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The Physiological and Psychological Dilemmas of War- Torn Children: A Discursive Study of Akpan's *My Parent's Bedroom*

Amna Saeed, M.A.



Abstract

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Amna Saeed, M.A.

The Physiological and Psychological Dilemmas of War- Torn Children: A Discursive Study of Akpan's *My Parent's Bedroom*

This qualitative research focuses on the effects of adult discursive structures, on the consciousness, identity formation and development of worldview of children belonging to war-torn regions, as portrayed in contemporary literature. I have analyzed *My Parent's Bedroom* by Uwem Akpan, based on Dijk's socio-cognitive models for Critical Discourse Analysis. Various language strategies in relation to discursive structures/practice, used in the texts have been analyzed to explore the physiological as well as psychological effects of war and violence on children. The ultimate motive of the research is to highlight the provision of a safe zone for children belonging to war-torn regions, where they can nourish and nurture into confident members of the society.

Introduction

My Parents' Bedroom (2008) in *Say You're One of Them* by Uwem Akpan is a short story written in the political context of the 1994 Rwandan genocide. Monique, the nine year old narrator tells how, in order to save her and her younger brother's life, their father (who is a Hutu) murders his wife (because she is a Tutsi) in front of the children. The children thus, not only lose their parents and relatives but also their trust in life and humankind in general. The author voices the fear and shock of the violence-hit child and his/her status in the war-torn continent of Africa.

Methodology

Critical Discourse Analysis (CDA) is employed as the strategy of analysis and interpretation, of the selected texts, in this study. Discourse Analysis does not constitute a single unitary approach; rather it is a constellation of different approaches and as a method of analysis rests on multidisciplinary approaches to analysis and interpretation.

Wodak and Meyer (2001, p. 2) state, "CDA is not interested in investigating a linguistic unit per se but in studying social phenomenon which are necessarily complex and thus require a multidisciplinary and multi-methodological approach." CDA is thus, a critique of the social issues related with dominance and injustice in society and views discourse in the light of Language in India www.languageinindia.com

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ideological and socio-political context, through a multidisciplinary and multi-methodological approach to discourse analysis. Most importantly, it views *power/dominance* as the driving force behind all discourses that regulate the society. This study aims to investigate how the psyche/identity of children, as presented in the selected texts, proves to be a consequence of the dominance practiced by the cultural/political/religious institutions on adults and by adults on children and thus distort their worldview.

Socio-cognitive Analytical Framework

To achieve the objectives of this study, I have selected van Dijk's (1993) socio-cognitive analytical framework within the domain of CDA, for the Analysis and Interpretation of the selected texts. Dijk himself does not follow any hard and fast, fixed method of analysis, and instead molds the methodological approach according to the needs/nature of research. However, he bases the methodological framework/s on his socio-cognitive approach to the *micro level* and *macro level* structures of the social order.

The socio-cognitive approach to discourse analysis holds that *discourse, society* and *cognition* are interrelated and embedded in a socio-political context of power relations in society. Dijk further differentiates between the *micro* and *macro* levels of social order and considers that discourse, language use, and verbal interaction belong to the micro level of the social order, whereas, power, dominance, inequality between different groups belong to the macro level of social order.

The aim of CDA is to bridge the gaps between the micro and macro levels of the social order, and draw conclusions which aim to end social injustice and inequality caused by the power relations in society.

The methodological framework selected for this study is therefore, based on Dijk's socio-cognitive approach to CDA and includes the analysis of socio-political context, the *micro level* critique of discourse structures including lexical style, embedded local meanings, and the *macro* Language in India www.languageinindia.com

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level critique of power structures enacted /resisted by them as incorporated in different implications and global meanings of the selected passages.

Literature Review

One of the most terrible forms of violence which human beings suffer from is war. Its effects are not only limited to the physical destruction of humans and their world, but also psychological devastation. In his research paper, *Children Exposed to War/ Terrorism*, Shaw (2003, p. 244) defines war as “War by definition implies a chronic and enduring exposure to trauma-related events with marked disruption in the contextual and social fabric within which one lives.”

War, therefore, is not only an armed conflict between different groups of people; instead it is a series of inhumane, traumatic events which result only in destruction and devastation. The present day armed conflicts are no more a series of man to man fight; instead it has become a massacre of the civilian population by terrorism, bombings and drone attacks. The worst victims of war are children who suffer from severe physical and psychological injuries as a result of being directly involved in war or by being indirect victims.

Psychological Trauma

More than the physical injuries caused to children in war, it is the psychological trauma that has a drastic effect on their personalities, their understanding of self and the world, cognitive skill and normal development of a physically and psychologically nourished child. The psychological trauma, suffered by children during war and genocide, keeps on haunting them in even adulthood.

While discussing the neurobiological effects of war and violence on children, Shaw (2003, p. 239) states:

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It is known that exposure to intense acute and chronic stressors during the developmental years has enduring neurobiological effects vis-à-vis the stress response and neurotransmitter systems with subsequent increased risk of anxiety and mood disorders, aggressive dyscontrol problems, hypimmune dysfunction, medical morbidity, structural changes in the CNS, and early death.

Effects of War on Children

In *The Effects of War on Children in Africa*, Albertyn, Bickler, Van As, Millar and Rode (2003, p. 228) highlight the effects of war in Africa, which seems to be a particular background for several civil and international wars. Some of the direct and indirect effects of war on children, as highlighted by them are:

In situations of armed conflict it is children who are increasingly exposed to abandonment, abduction and forced soldiering, separation from and loss of parents, health problems, poverty and hunger....it is estimated that during war 5% of children's deaths results from direct trauma and 95% from starvation or illness, and that many are left with permanent disabilities. As many as 37% have lost both parents, 45% their mother and 55% their father.

As Albertyn, Bickler, Van As, Millar & Rode observe, the worst victims of present day wars are children who are suffering physically, mentally and psychologically. In addition to the direct physical and psychological trauma, the indirect effects of war include low socio-economic conditions which result in poverty, hunger and starvation. Lack of health facilities cause numerous diseases in children which result ultimately in their death. Children are left homeless and parentless, and in hostile environments, they become victims of abuse and torture at the hands of the enemy clan.

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Forced Soldiering

Apart from physical and psychological victimization of children during war, another important devastating experience for children is ‘forced soldiering’, that is, children are forced to fight in wars as child soldiers with or without their consent. Plunkett and Southall (1998, p. 73) state:

In Afghanistan, after more than 17 years of war, it is estimated that up to 45% of soldiers are under 18 years of age. Drugs, alcohol and violence, physical and psychological have been used by military organizations in brutal induction ceremonies where children may be compelled to kill others, including their own family members.

While some child soldiers may be inducted in the military by force or by exposing them to drugs, many adolescents willingly join the military in order to gain a sense of belonging and protection in the chaotic world. They find taking up arms in war as liberating since it frees them from the unending tortures, and gives their life a structure and purpose. So, in order to be safe and to get food and shelter, many children make the deliberate choice of fighting in the war although they are neither trained for it nor are they economically benefitted by it.

Physical and Sexual Torture and Abuse

Finally, the worst form of war victimization is physical torture and child abuse, both physical and sexual. Since children do not have the physical strength to stand up to the tortures of the strong adults and also because no one listens to their pleas, children become easy victims of torture in events such as war. Plunkett and Southall (1998, p. 73) state:

Children have been detained and tortured in the pursuit of military objectives.

Torture of children may be used as part of a collective punishment of a community, as a means of extracting information from the child, the child’s peers or parents, or as entertainment. Allegations to cruelty to children as

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young as 12 years—involving solitary confinement while naked and blindfolded, beatings, electric shocks, and hosing with cold water—all have been documented by Amnesty International and corroborated by medical evidence.

War, terrorism and physical/ sexual abuse, thus are the worst forms of violence which a child can suffer from, and it is no less than a nightmare for the child which affects his/her physical and psychological health, identity, sense of belonging, natural comfortable family life with siblings and parents and the overall worldview.

The Future of Children Who Suffer from War and Violence

The future of children who suffer from war and violence is even bleaker than their horror filled experiences of war. The *Human Rights Watch* (2003, p. 41) observe the situation of Rwandan children after the 1994 genocide as:

Perhaps the most devastating consequence of the genocide and war in Rwanda is the hundreds of thousands of children who have been orphaned or otherwise left without parental care since 1994. During the genocide and afterwards in refugee or displaced person camps, these children were left to cope with atrocities taking place around them and to fight for their own survival. Today, they struggle to rebuild their lives with little help in a society that has been completely devastated. With many living in poverty, they confront the daily challenges of feeding, sheltering, and clothing themselves; trying to attend school; or trying to earn a living. In the meantime, thousands of vulnerable children are exploited for their labor and property and denied the right to education.

So, it is very difficult to rebuild the lives of children who are left orphaned and without protection after war and conflicts. The physical devastation and the psychological trauma they

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have to go through is a life time consequence of their suffering in events such as wars. As a result, not only their physical and psychological health is affected but their personalities, identities and worldviews are also distorted for their lives. With such marks of horror on their personalities, these children fail to follow a normal childhood and developmental route to a healthy and nourished adulthood.

Micro and Macro Analysis of ‘Say You’re One of Them’

(I circle the parlor, like an ant whose hole has been blocked)

Synopsis of the Story

My Parents’ Bedroom is a short story from the collection *Say You’re One of Them* by Uwem Akpan, written in the socio-political context of war and violence in Africa. The collection focuses on the situation of the suffering children in different parts of the continent. *My Parents’ Bedroom* is written in the political context of the 1994 Rwandan genocide of the Tutsis by the Hutus.

The story opens with the introduction of the child narrator, Monique, who is “nine years and seven months old”, and loves to play peekaboo with her little brother, Jean. The children’s father belongs to the Hutu tribe and their mother comes from the Tutsis. While the parents hide out in the night to survive the Hutu massacre of the Tutsis, the children’s uncle and other relatives breaks in the house to kill their mother. Not finding the parents at home, they tear the house upside down in rage, and one of the men tries to rape the nine year old Monique.

This physical and sexual abuse leaves the children fearful and in pain when they finally leave only to return back the next night, and demand from the father to kill his wife in order to save his children. In his desperate attempt to save his children, the father murders the children’s mother with a machete before them and leaves the children in shock. Ultimately, the house is lit on fire, and Monique runs away into the chilly night with her younger brother. The children witness

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vultures poking their beaks on the dead bodies left unattended in the open. Finally, they escape the site of violent Tutsis rushing after Hutus and run into the hills.

Context Analysis

The short story *My Parents' Bedroom* by Uwem Akpan is written in the political context of the 1994 Rwanda genocide. The Rwanda genocide originated from the conflict between Tutsi and Hutu tribes, the two dominant tribes in Rwanda because of political and historical reasons. Tutsis, being in minority, were brutally massacred by the Hutus, who claimed to be the righteous owners of Rwanda. Apart from being in minority, the Tutsis differed from the Hutus in physique as well, being taller and fairer like Europeans.

In 1994, after the assassination of President Juvenal Habyarimana of Rwanda, Hutu extremists took over the government, blamed the Tutsis for the assassination and within 24 hours began slaughtering the Tutsis. In the next hundred days, thousands of Tutsis were brutally murdered, mostly with machetes, clubs or knives and were not even spared in churches, hospitals and even schools. Thousands of women and children were raped and tortured. To further degrade the Tutsi, Hutu extremists did not allow the Tutsi dead to be buried, and their bodies were left to be fed by the vultures and dogs.

The genocide ended when Rwandan Patriotic Front, a trained military group consisting of Tutsis, took over the country. Thousands of children were killed during the genocide, worst of all those who survived witnessed brutal acts of murder of their loved ones, like parents and siblings were tortured, mutilated and sexually abused. In their research paper, *Trauma Exposure and Psychological Reactions to Genocide Among Rwandan Children*, Dyregrov, Gupta, Gjestad and Mukanoheli (2000, p. 9) state:

Virtually all the children interviewed had witnessed some kind of violence during the genocide. More than two-thirds of the sample actually saw someone being injured or killed, and 78% experienced death in their immediate family, of which

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more than one-third of these children witnessed the death of their own family members. In addition, almost all the children saw dead bodies or parts of bodies, and more than half of the children witnessed many people being killed at one time (massacres), people being killed or injured with pangas (machetes), and people being beaten with sticks. The majority of children saw their homes destroyed/looted and/or heard people being injured/killed.....Finally, 16% of the children reported that they had to hide under dead bodies in order to survive the genocide.

With this kind of traumatic violence, the Rwanda Genocide is considered to be one of the most brutal acts of violence in human history, and its worst outcome strikes child survivors. Children who survived the genocide developed severe psychological problems, and suffered from impaired cognition. Their situation, ultimately turned equivalent to “an ant whose hole has been blocked.”

The Focus of Analysis Here

The Analysis (Micro and Macro Analysis) and Interpretation of the selected passages focuses on the effects of violence, massacre and abuse on children. The psychological and physical effects of events, such as genocide, are critical for children’s normal development. Such political events shape children’s worldviews and distort their ethnic, personal and social identities. The psychological trauma that children face during war haunts them even in adulthood, and it becomes very difficult for them to regain a normal routine in life. Following is the *micro* and *macro* analysis and interpretation of the story.

4.3. Micro and Macro Analysis

In the start of the story, Monique the child narrator introduces a slight background of her family stating that her father belongs to the Hutu tribe while her mother is Tutsi woman. Although they belong to different tribes, her parents share a deep love for each other. The family is devoted to Language in India www.languageinindia.com

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Christianity as their religion and finds solace and peace in its practice. The parents hide out at night knowing that the tribal conflict will lead the outraged mob to their house, ultimately leading to their murder. The children are left at home alone, when finally their uncle, with all other Hutu relatives, crashes the doors of the house open to look for them. The children are afraid when they see the aggressive mob turning the house upside down. The worst however, falls upon little Monique when a “big-bellied man” tries to rape her. He fails to finish the brutality because the elder tells him to stop as they consider the children parts of the Hutu tribe, and only their mother, who is a Tutsi, as a rival. After the rampage is over, the fear that takes over Monique is expressed as:

(1) I want to sleep, but fear follows me into my room. My fingers are shaking. My head feels heavy and swollen. There's a pebble in my left thigh where the naked man hit me. My mouth is still bleeding, staining the front of my nightie. Jean is covered in goose bumps. I m too afraid to tidy up our room. We huddle in one corner, on the mattress, which has been tossed onto the floor. I start to pray. (p. 273)

Micro Analysis

Lexical Style and Local Meaning

The lexical choice of the author features vocabulary that expresses “**fear**” of the child caught up in violence, war and abuse. At the local level of meaning, the author focuses on the physical and psychological effects of violence on children. The words “**shaking**”, “**head feels heavy**”, “**swollen**”, “**bleeding**” reflect the physical outcomes of violence on children, while “**fear**”, “**goose bumps**”, “**too afraid**” refer to the psychological effects of violence on children. In the first line, the narrator explains that she wants to sleep but “**fear follows**” into her room and makes her sleepless.

The word “**staining**” refers not only to the physical blood stains on the child’s dress, but also to the psychological marks of horror and pain left on the child’s mind as a result of physical and

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psychological torture that originates in war-torn regions. The sentence “I am too afraid to tidy up our room” marks the disturbance of children’s life because of severe situations like ethnic conflict and war. Violence interrupts the lives of children in a terrorizing manner, making them mentally, physically and psychologically inactive.

The last two lines express children’s reaction to adult violence. The child’s retreat to a safe place and the desire to be protected is expressed in the line, “**we huddle in one corner**”, and the child’s dependence on some sort of physical and psychological support system is revealed in the last line, “**I start to pray.**” Children therefore, who are suffering in violent situations across the globe because of adult savagery, are left at the mercy of God and are forced to retreat physically and psychologically to spaces that are cornered. The child’s position is thus defined as children are pushed to physical and psychological spaces that are not noticed or paid attention to by the adults. Thus they are without protection and support, and left to suffer the brutalities and horrors of war and violence.

Macro Analysis

Global Meanings and Implications

At the macro level, the author highlights the physical and psychological effects of violence and abuse on children. Bloomaert (2005) considers it more important to analyze the “power effects” than to just criticize power practice or to react against domination. When it comes to war and ethnic violence, it is the children who are the worst affected victims since they do not understand the adult ideological reasons for such acts.

To children, all humans are equal and the same whereas adult thinking divides people on the basis of gender, race, religion and ethnicity. This division of the *self* and the *other* becomes the reason for ethnic conflicts. Children are not only physically traumatized in ethnic genocide but psychologically tortured also. Moreover, the worst part is that they become easy victims of physical and sexual abuse at the hands of the rival groups. Tamashiro (2010, p. 1), while stating some of the worst impacts of armed conflict on children, claims that “children, especially girls, Language in India www.languageinindia.com

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are subjected to an increased risk of sexual violence from armed combatants during conflict. Rape has been a prevalent component of armed conflict....causing increased risk of psychological trauma, unwanted pregnancy, and susceptibility to sexually transmitted infections.”

Nevid, Rathus and Greene (1997) hold that the physical injuries suffered by physically abused children are tragic, and the emotional wounds may run deeper and are even more long lasting. Child survivors of sexual abuse fall at an increased risk of different psychological disorders like post-traumatic disorder, anxiety problems, phobias, low self-esteem, lack of trust and social withdrawal. To save children from such horrible acts, it is important that they should be given attention as a separate group in society, and protected by adults in situations like war and genocide. It is therefore, adult responsibility to protect children in war-torn regions, and also show potential commitment to safeguarding the future from such heinous crimes.

The next night the mob arrives again and finds the family together. The Hutu people and Tonton Andre, who is Monique’s father’s brother, demand him to kill his Tutsi wife because she is not one of them. Not finding the courage to kill the love of his life himself, he asks someone else to do it. But he gets the following reply:

(2) *“If we kill your wife for you,” the wizard says, “we must kill you. And your children too.” He thuds his stick. “Otherwise, after cleansing our land of Tutsi nuisance, your children will come after us. We must remain one. Nothing shall dilute our blood. Not God. Not marriage.” (p. 285)*

Micro Analysis

Lexical Style and Local Meaning

At the local level of meaning, the lexical style features vocabulary which highlights the notion of ‘ethnic cleansing’ and how people adhere to their cultural and social identities with respect to their superior rights to land and its resources as compared to other ethnic groups. The phrase Language in India www.languageinindia.com

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“cleansing our land of Tutsi nuisance” reflects that people associate qualities of being “clean” and pure with their own group and “dirt” and impurity with other groups. Based on such assumptions people kill other people like animals and forget associating any goodness with them. The sentence “**we must remain one**” reflects how people are devoted to their ethnic groups and the strength of ethnic identities with which they associate is depicted in the last line, “**Nothing shall dilute our blood. Not God. Not marriage.**” The last lines of the passage express the importance of ethnic identity and the role of ethnicity in the lives of people. Every group of people considers itself as superior to others, based on their self-proclaimed truth claims, find the rest as false, and it is for this ethnic superiority that humans find rationale to brutally murder other humans.

Macro Analysis

Global Meanings and Implications

At the macro level, the passage implies the role of ethnic identity in cultural group dynamics and functioning. According to Burke and Stets (2009) ethnic identity is a part of the subject’s social identity. Through the development of social identity, individuals categorize self and others in particular ways and therefore, associate certain forms of behavior and thoughts with people belonging to their group and the *other* group. This *othering* helps individuals to gain control over their actions and lives. It also provides for a multicultural dialogic platform for different groups of people belonging to different cultures.

However, as Barker and Galasinski (2001) observe, the multicultural stance of different groups also leads to various cultural differences between them and become a cause of contestation for ascendancy and pragmatic claim to truth within various patterns of power. On the basis of these truth claims, people consider their groups as righteous and the other groups as inferior and wrong.

Culture then, as Allan (1998) states, functions as an ideology that produces a type of false consciousness and works to oppress a group of people. It is because of this ideological interplay Language in India www.languageinindia.com

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that adults refuse to tolerate *others* and impose ideas such as ‘ethnic cleansing’ of human beings and their lands. Children however, fail to grasp such contesting ideological rationales for massacre and genocide and suffer more, both physically and psychologically, because they cannot make logical sense of such events. The effect of this confusion is a distortion of their cognitive skills and their understanding of the world and life in general. Ultimately, they grow up into perplexed adults with distorted psyche and understanding.

(3) Papa lands the machete on Maman’s head. Her voice chokes and she falls off the bed and onto her back on the wooden floor. It’s like a dream.....There’s blood everywhere—on everybody around her. It flows into Maman’s eyes. She looks at us through the blood....the blood overflows her eyelids, and Maman is weeping red tears. My bladder softens and pee flows down my legs towards the blood. The blood overpowers it, bathing my feet. (p. 285)

Micro Analysis

Lexical Style and Local Meaning

At the local level of meaning, the words, “**her voice chokes**” suggest the repression of ‘voice’ of certain members of the society, in this case a Tutsi woman for not being a Hutu by blood. The role of the woman as a mother and as a wife is not considered because she is looked at as the “other” who does not belong to the tribe. It is thus, this ‘otherness’ that causes all the havoc and deprives people of even their lives.

The sentence, “**It’s like a dream**” reflects upon the child’s perception of the event, that is, the murder of her mother by her own father right before her eyes. The fact that the narrator expresses it as a dream shows that the child finds it hard to believe and does not consider it as a realistic event. Also it depicts the child’s unwillingness to accept the event as a real one.

The next sentence, “there is **blood everywhere, on everybody around her**” expresses the fact that everybody around her is her murderer and everybody has her blood on them. The line, Language in India www.languageinindia.com

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“Maman is weeping red tears” expresses not only sorrow at death of the woman but also at the brutality and violence of humankind. The severity of cruelty which marks the event is depicted by the term “red tears”.

Macro Analysis

Global Meanings and Implications

At the macro level, the passage implies the killing of *voice* of one group in the society by other groups. As Bakhtin (1981) claims, human existence is in essence a dialogic existence dependent on shared mutual understanding of socio-cultural beliefs and norms. Dialogue, in all forms, be it linguistic, cultural, social or political, develops respect for mutual understanding and sharing of *voice*, giving rise to multiple accents and meanings in society.

This multiaccentuality is repressed when, based on certain ideologies, meaning gets fixed for a particular group of people, because the kind of shared mutual understanding displayed by violent groups as ‘mob mentality’, leaving many different traces upon weak and dependent minorities is not justified. As a result, different groups come in direct contest with each other with respect to what is right and what is wrong, and fail to tolerate others’ views and beliefs. This ultimately leads to political power possession, and creates situations like war and ethnic violence.

The fact that is ignored, in such violent acts, is the suffering of innocent children who become victims of physical and psychological trauma as a result of these. Moreover, children are indirectly forced to be a part of such adult violent acts. This is the most inhumane consequence of political and ethnic rivalries that result in wars, causing innumerable deaths and massive destruction with unimaginable after-effects.

At the macro level, the author has also highlighted the horror filled, inhumane, actions committed by adults during the genocide and its impacts on children’s minds. The worst that a child can witness in his/her life is the murder of one of its parent by the other. For children, the site of blood and killing, and its lingering in their psyche, is in itself a horrifying image but the Language in India www.languageinindia.com

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killing of parents and siblings is the worst one can imagine for a child to suffer from. The Rwandan genocide was one of the worst political events for children who got orphaned and were left shelter less, vulnerable to terrorist acts such as abuse and torture by the rival groups. The *Human Rights Watch* (2003, p. 44) reports:

Some 400,000—more than 10 percent of Rwanda’s children— are estimated to be orphans today. Most were orphaned during the genocide or the war.....genocide survivors who were orphaned in 1994 are the most visible of these groups. They are among the most vulnerable children in the world: many witnessed unspeakable atrocities including the murder of family members and some narrowly escaped death themselves, leaving them deeply traumatized. Many of those who survived now live in misery, often lacking the means for education and basic health care.

So, the future of children who suffered from the brutal acts of the genocide is among the most traumatized groups of children in the world. The lack of education facilities and health care leaves them at the mercy of the circumstance.

(4) I cry with the ceiling people until my voice cracks and my tongue dries up. No one can ever call me Shenge again. I want to sit with Maman forever, and I want to run away at the same time.....my mind is no longer mine; it's doing things on its own. It begins to run backwards, and I see the blood flowing back into Maman. I see her rising suddenly, as suddenly as she fell. I see Papa's knife lifting from her hair. (p. 286)

Micro Analysis

Lexical Style and Local Meaning

The lexical selection in the first line, “**until my voice cracks**”, suggests how adult conflicts and violence affect children and repress their voice in society. The word “**crack**” refers to the fact Language in India www.languageinindia.com

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that something intact gets *cracked* because of mishandling or carelessness. The *voice* of the child should have an authentic status in the social order, but, because of adult ignorance and mishandling, the child's voice gets not only repressed but crushed. Children, who suffer from the violence and brutalities of adult political events such as war and ethnic conflicts, fail to understand their social position and thus do not recognize that they have a *voice* in the first place.

Adults do not care how the violent outcomes of their conflicts affect and harm children's physical, psychological and mental health and growth. The same is suggested by the words, "**my tongue dries up**". Children are thus physically and psychologically pushed into a state of cognitive paralysis in which they fail to think of themselves as independent beings who have a voice of their own.

The second line, "**no one can ever call me Shenge again**", suggests that adult manipulate and distort children's identities depending on their own situations and needs. In the beginning of the story, Monique states that her father and his Hutu people call her "**Shenge** (my little one)" because she has physically taken after her mother (p. 266). After her father murders her mother, the child not only loses the parent but the identity that was given to her because of her mother.

At the local level of meaning, in the next line, "**I want to sit with Maman forever, and I want to run away at the same time**" the author brings to light the child's desire to be protected, loved and cared and the adult brutality which forces the child to do otherwise. Children are therefore, left confused with respect to what is right and what is wrong.

The line, "**my mind is no longer mine; it's doing things on its own**" reveals the loss of control from which the child suffers because of the severity of adult ignorance of the child's suffering in situations like war and genocide. And the child's mind "**begins to run backwards**" enforces the child's desire to undo the brutal act of murder, and bring things back to normal the way they were when her mother was alive.

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Macro Analysis

Global Meanings and Implications

At the macro level of meaning, the passage focuses on the status of child's voice in society in the socio-political context. According to Bakhtin (1981) a mutual understanding of meaning develops in dialogue, which is an amalgamation of two consciousnesses, in other words, two different *voices* in society. However, the result of this mutual understanding is supposed to be constructive for humankind. The understanding shared by the groups belonging to the power bloc proves to be destructive for the minorities who suffer because of their understanding of their groups as the dominant ones. One of such negative impacts of adult dialogic understanding is that adults hold the right to voice their choices and opinions in life but when it comes to children, they do not get a chance to raise their voice against adult actions which are imposed on them. For instance, the event of war or genocide is mono-accentuated because it is understood in a socio-political context by the adults who perpetuate it. As a result, the violence of war or ethnic conflict is imposed on children that is not understandable to the adults. Therefore, the dialogic understanding of meaning fails when it comes to the in socio-political interaction between adults and children. This failure to achieve a dialogic understanding thus turns into adult imperialism, as Kincheloe (1997) contends, and represses the voice of the child to a "discursive closure."

The second important implication of the passage is the discursive construction of identity. As Lye (1997, discussed in Ch. 2, p. 49) observes, subject identity originates from a dialogic process of the social and cultural interaction of the individual with its group members and the ideological beliefs of his/her society. Subjects therefore, develop a self-image from their identity groups, from their activities in society and from the repertoire of common and shared meanings and practices of their sub-cultural groups. Right from birth, a child is "interpellated" (Althusser, 2001) into a subject of the society. S/he is given a name according to a cultural understanding of the individuals place in society. This naming or construction of identity also draws upon the child's gender, religious and ethnic positions and roles. From early childhood onwards, the child accepts this identity as something natural which positions him/her in the society, and barely ever challenges it. However, the socio-political events such as war, 'ethnic cleansing' and tribal

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conflicts confuse the child's sense of self and belongingness since it becomes very difficult for children to rationalize war and violence 'others are not a part of us.' The effect of ethnic violence on child's development of identity and self-image is, thus, crucial in the overall understanding of 'self and others'.

(5) *There are corpses everywhere. Their clothes are dancing in the wind. Where blood has soaked the earth, the grass does not move. Vultures are poking the dead with their long beaks; Jean is driving them away, stamping his feet and swirling his arms. His hands are stained, because he has been trying to raise the dead. He's not laughing anymore. His eyes are wide open, and there's frown on his babyish forehead. (p. 288)*

Micro Analysis

Lexical Style and Local Meaning

The lexical selection of the word “**corpses**” in the first line associates the local meaning with the idea of death. The words “**corpses everywhere**” emphasize the idea of death as a massive effect of war and conflict. Similarly, the fact that the clothes of the corpses are “**dancing everywhere**” expresses the seriousness of the event. It also refers to the *silence* created as an effect of death, the immobility of human life.

The line “**where blood has soaked the earth, the grass does not move**” suggests the effects of human brutality on nature and nature's response to it. The fact that the grass does not move, while the clothes of the corpses dance, reflects how even nature is affected by human cruelty. It also expresses the prevalence of death and ending signs of healthy life on earth.

The line “**vultures are poking the dead**” refers to the gravity and horror of violence created by adult conflicts, the disrespect that people have for each other is reflected in the idea of vultures poking the corpses.

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Furthermore, “**Jean is driving them away**” represents child’s repulsion for violence and cruelty and their sense of right and wrong. The child is aware of the fact that vultures are not supposed to “poke the dead”, and it is something that should not be allowed.

The effect of adult imposition of violence on children is expressed in the line, “**his hands are stained, because he has been trying to raise the dead.**” Consciously or unconsciously, adults involve children in their brutal wars and conflicts and do not care of their horrible implications for them. The word “**stained**” refers to the marks adult wars leave on children, physically as well as psychologically. The fact that “**he’s not laughing anymore**” shows the emotional crisis which is thrust upon the children suffering from violence and abuse.

Similarly, “**his eyes are wide open**” represents the surprise and shock with which the child faces violence. The placement of the words “**frown**” and “**babyish forehead**” shows the emotional effects of adult discursivity on children since babies are supposed to laugh and smile and not frown, but the adult gesture is imposed on the child as a result of ethnic conflict.

Macro Analysis

Global Meanings and Implications

The passage focuses, at the global level of meaning, on the development of child’s worldview in war-torn regions where violence has not only destroyed the physical and natural world but also the child’s sense of the world as a place worth living in. The author has brought to light “the darkness of human heart”, which devoid of all kindness and humility, preys upon its own species.

Witnessing the site of corpses lying on grounds, bloodshed, brutal murders and vultures preying upon the corpses leaves severe traumatic marks on not only adults’ but on children’s minds as well. Children however, get more perplexed and fearful because they cannot relate the events of violence with the love and kindness they are always preached to live with. Also because children are used to of adult protection, their experiences in war and genocide leave them more fearful,

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dreading the darkness of human heart. Dyregrov, Gupta, Gjestad, & Mukanoheli (2000, p. 11) state:

More than two-thirds of the children reported that they often tried to stay away from situations or things that reminded them of the event. Overall, the data indicate that many children continued to have intrusive images, thoughts, and feelings 13-20 months after exposure to the events of the war, despite their attempts to remove the event from their memory and to avoid these reminders. Many of the children also reported increased arousal symptoms such as inability to concentrate or pay attention.

So, according to the authors, one of the greatest psychological effects of violence on children is the post-traumatic stress which immobilizes and impairs children's cognitive and mental skills. The passage thus, highlights the effects of war and violence on children. Children are directly affected emotionally, physically, and mentally by war and violence. The passage also implies the child's position in war-torn regions. Children are not paid any attention to and are left alone to suffer from the trauma of murders and genocide without any help.

(6) Then he wanders towards the UN soldiers at the corner, their rifles shiny in the twilight. They are walking away from him, as if they were a mirage. The vultures are following Jean. I scream at them, but they continue to taunt him, like stubborn mosquitoes. Jean does not hear. He sits on the ground, kicking his legs and crying because the soldiers won't wait for him. I squat before my brother, begging him to climb on my back. He does and keeps quiet. (p. 288)

Micro Analysis

Lexical Style and Local Meaning

The lexical choice in the passage features the absence of any help for children suffering from war and violence. The first line introduces the idea of “UN soldiers” who are “**moving away from** Language in India www.languageinindia.com

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him (Jean)". Global peace keeping like UN who are supposed to help those who are suffering in different parts of the world neglect the fact that children are also a part of the social event and need attention and help in situations of political turmoil.

The word "**mirage**" refers to the help and support that may be there for children but in actual practice does not exist. The next line, "**vultures are following Jean**" depicts the position of the unprotected child in the socio-political context. Children, who are parentless in war and violent situations, are left at the mercy of the circumstance and become vulnerable victims of adult abuse and violence.

The words "**I scream at them**" raise the child's voice in situations like genocide. The word "scream" refers to the horror, surprise and anger of the child at adult cruelty. The author expresses children's frustration and sadness at the absence of help in the line, "**he sits on the ground, kicking his legs and crying because the soldiers won't wait for him.**" The words also express the child's desire and plea to be rescued. Ultimately, children are left with their siblings or other children for support and help.

Macro Analysis

Global Meanings and Implications

The passage brings to focus the importance of organizations like the UN in upholding the status of children suffering in war-torn regions. More than that, it is a critique of the role of such organizations, which claim to be participating in peace keeping activities and providing support to people in the war-torn areas of the world. The author uses the word "mirage" to relate to them, when it comes to child support and help in areas of violence and war. To children suffering in different parts of the world, their help and support is like a mirage, which shows itself but is actually never in their reach.

Fleishman (2002, p. 10), while stating the problems for children's rehabilitation after war and referring to a speech by Kofi Annan, observes that "the problem, Mr. Annan's report makes Language in India www.languageinindia.com

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clear, has not been the absence of money, but the lack of will.” Ultimately, children suffer unprotected and isolated in conflict hit areas without any care or support.

(8) We limp on into the chilly night, ascending the stony road into the hills. The blood has dried into our clothes like starch. There’s a smaller mob coming toward us....these are our people on Maman’s side, and they are all in military clothes. Like another soccer fan club, they’re chanting about how they’re going to kill Papa’s people. Some of them have guns. If Papa couldn’t spare Maman’s life, would my mother’s relatives spare mine? Or my brother’s? (p. 288)

Micro Analysis

Lexical Style and Local Meaning

At the local level of meaning, the word “**limp**” refers to the physical injuries and damage done to children in war-torn regions by adults. As an outcome of violence, children are handicapped and their physical health is severely affected. The phrase, “**chilly night**” refers to the coldness of situation in which children are caught as opposed to the warm and comforting situation of a normal happy and peaceful life.

The line “**ascending the stony road into the hills**” depicts the strife of children caught up in war-torn regions of the world. Their life becomes as difficult as a journey on a stony road, moreover it is the “ascending” that shows their struggle to survive the violence and brutality of mass murders in war. The innocent perception of children is expressed by associating the chants of “**soccer fan club**” directly the chanting of the mob about “**how they’re going to kill Papa’s people.**”

The passage is full of words that refer to the conflict between the in-group and the out-group, for instance, “**our people**”, “**us**”, “**our people**”, “**they**” and “**them.**” The words not only highlight the struggle between different cultural, social and political groups of people but also depicts Language in India www.languageinindia.com

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children as a separate group in the society as against the adults. When the narrator uses the words “a smaller **mob** coming toward **us**”, she places herself and her brother into a separate group of people who stand against the opposing group of people, that is, the “mob”. Children therefore, understand themselves as a separate group of people than the adults, however, adults fail to recognize the same.

Macro Analysis

Global Meanings and Implications

At the macro level, the passage implies the effects of ethnic confusion on children, which results from political events like ‘ethnic cleansing’ of a land. According to Burke and Stets (2009) ethnic identity is a part of the individual’s social identity and it helps people to relate to a certain group, giving them confidence and a sense of belongingness. It also reduces uncertainty and develops a sense of positive self-worth.

However, this association with one group originates in opposite or similar response to some *other* group. Hence, one’s own group is seen as the ‘in group’, which comes in direct opposition to the other’s group, that is, the ‘out group’. This categorization of self and others in defined categories, and expecting particular thoughts, feelings and behaviors to follow from these categorizations enables individuals to exercise control.

Critically however, this distinction of the ‘in group’ and the ‘out group’ turns into a form of imperialism when one group tries to dominate the other by repressing their voice and access to various resources. This ends up in ethnic wars and conflicts resulting in massacres and genocides through the so-called process of *ethnic cleansing*.

The impact of such violent actions on children is severe; it affects their physical, psychological and mental health and growth often leading them to a state of “crisis heterotopia” (Foucault, 1967). The mental state of crisis, ‘heterotopia’, is a state of liminality and confusion, in which children tend to fight out what is real and what is not. Being taught by adults about kindness of Language in India www.languageinindia.com

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heart, love and non-violent ways of life, when children witness brutal acts of genocide, they become confused and therefore become victims of different psychological disorders.

Finally, the passage highlights the future of the world since children are the future and for them, life as defined by the adults is only “ascending the stony road” and the world merely “chilly night.” As Dyregrov, Gupta, Gjestad & Mukanoheli (2000, p. 19) state:

Children and adolescents who managed to survive the genocide represent the future generation of Rwanda, and serious attention must be given to these survivors in order to restore a sense of hopefulness about their future and to prevent long-term psychological sequelae.

So, the survivors of the genocide call for attention because they are the future of the world. Otherwise, the psychological trauma and physical ailments they carry are to be passed on to the future generations. It is not only the future of the children, suffering because of irrational brutal adult wars and genocides, that is bleak and filled with horror, but the future of the world is equally dark and hopeless.

Conclusion

The short story, *My Parents' Bedroom* in the collection *Say You're One of Them* by Akpan is thus, a highly important piece of literary discourse that highlights the problems of children suffering in Africa because of adult wars and conflicts. It reflects the most brutal acts that have been imposed on children; when they watch their parents kill each other, watch their siblings being raped, witness massacres and bloodshed, hide under corpses to save their lives, face health and nutrition problems and are drugged to participate in wars as child soldiers. The future of the world indeed, appears bleak if children across the world are subjected to such suffering.

The analysis and interpretation of the selected passages from the texts leads to the unnoticed status and position of the child in society. The voice of the child is repressed because children are

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not considered as an independent group in society who may think and feel other than the adults' choices for them and their lives. Moreover, various socio-cultural ideologies such as religion, social decisions of gender roles, child education and politics also limit the child's cognitive abilities by constraining their thoughts to fixed ideals and related behavioral patterns in society. These limitations perplex the child with reference to his/her identity, worldview, and his/her place and role in society.

Childhood, therefore, becomes a social construct; a socio-cultural process of interpellations through which children are shaped as members of a certain group or class of society. Through such social construction of children into interpolated subjects, they are bound to grow up into individuals with distorted concept of 'self' and the world as isolated, psychologically troubled or disordered members of the society instead of healthy, nourished minds that can contribute to the development of the society at large. Thus, the future generations are bound to be confused and psychologically disturbed if issues concerning today's children are not attended properly.

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The Study of Pro-drop Parameter in Two of the Persian Dialects - Baluchi and Sistani

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Sistan & Balochistan of Iran

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Abstract

The purpose of this paper is to present certain aspects of the pro-drop parameter among two of the least studied languages in the Middle East, Sistani and Balochi which are spoken in the south-eastern corner of the linguistic area of Iran, where until recently there were no such

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phenomena as language planning, education, mass media, newspaper or administrative language (Breseeng, 2001: 133- 134). According to this research, the Persian language is pro-drop and in Iran it has started to play a constantly growing role in Balochistan.

Key terms: pro-drop parameter, Balochi, Sistani

Introduction

Absolute universal is a property that all languages have in common. These universals are scarce (Bauer, 1992: 166). For example, all languages contain vowels. There are also frequency based universals such as those found in Greenberg (1963) which state general tendencies for languages of a particular type. When Chomsky (1965) discussed the problem of poverty of stimulus, principles and parameters theory, he made use of absolute and probabilistic universals to solve this problem. He proposed that learners possess an innate grammar, which consists of universal rules and these principles are true of all natural languages (Haegeman, 1991: 12). His theory also consists of a set of parameters, or options which contain binary choices. These binary choices refer to the fact that rather than learning many individual rules, a learner merely chooses between two possible types of rules and all other characteristics associated with that rule are followed consequently. Pro-drop is one of these parameters which describe languages that do not require an overt subject. According to this parameter, there are four characteristics of a language that should pattern together.

Characteristics of a Pro-drop Language

The first characteristic of a pro-drop language is that overt subjects are optional in many cases. It is observable in the contrast between the English sentence “I eat a sandwich”, and the Persian equivalent sentence ((man) yek sândwich mixoram), where the parentheses indicate that the subject pronoun is optional. In addition, this parameter implies a subject-verb inversion characteristic in pro-drop languages. For example in Persian both ([?ali be madrese raft]: Ali to school went) and ([be madrese raft ?ali]: to school went Ali), are acceptable sentences. However, it is not implied that this language has free words order (Liceras, 1988).

The existence of expletives is another characteristic of the pro-drop parameter. English, which is not a pro-drop language, requires the expletive ‘it’ and ‘there’ since the subject position in a

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sentence cannot be left empty, like “It rains” in English and ([mibârad]) in Persian. That trace effect is final characteristic involved in pro-drop parameter. In languages which do not allow pro-drop, the complementizer ‘that’ may not be left in the sentence after wh-movement has taken place. Because of this the sentence “*whom did you say that is coming?” is not grammatical, whereas a similar sentence in Persian ([če kasi râ gofti ke miâyad?]) is grammatical.

As it is noticed, Persian Language as the official language in Iran is a pro-drop language having all these four characteristics. The aim of this research is to study the pro-drop parameter in two dialects Sistani and Baluchi spoken in Sistan- Baluchistan a province in southeast part of Iran.

Review of the Literature

Until recently, many studies in pro-drop parameters have been carried out. Geldren 2011 for example, investigates pro-drop parameter in the history of English. His studies reveals that referential pro-drop is grammatical in Old English but disappears as the reanalysis is complete (Gelderen, 2011).

Jellinek collected interesting data to describe his thesis. Based on his data, nominal subjects can never be placed as subject of a verb. They are, instead, contrast targeted and emphasize on a relationship marked by a verb suffix creating subject information.

Nichols (1992) discusses the complexity trait of morphology. Morphological indicators can be demonstrated in forms such as affixations, clitics or any other morphological variability demonstrating related meanings, roles and relations. Therefore, more complexity results in a higher probability in pro-dropping (Nichols, 1992 p.48).

Rasekhmahand (2003) examines the process of omitting subject pronoun in Persian dialects Gilaki, Mazandarani, Lori, Urami and Surani. His research shows that all these dialects have the possibility of using an optional subject.

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Many other scholars have carried out similar researches into their languages being a pro-drop and have compared their languages with other languages in this aspect. Melnik (2007) Strunk (2005) Butt (2010) Han & Kocheton (2005) Geeslin (2000) Muller (2011) Simpson are to name a few. There is also few researches on each of the dialects which are to be discussed in this article.

There is very little known about the early history of Sistan and Baluchistan. The native of Baluchistan are called Baloch. Generally Baloch people speak Balochi. The Baloch tribes were forced to migrate towards Sistan Baluchistan province from 4th century onwards (Ghorab, 1985:15).

Balochi tribe is classified as one of the Iranian group of the Indo-European language family which is closely related to Persian. Balochi was used only as an oral language until the post-colonial period. Before that, it was generally regarded as a Persian dialect and there was no tradition of using it in writing. The Balochi literary movement got fully under way only after the creation of Pakistan in 1947. Their direction was from north to south (Yaghmaee, 1981:255).

Based on the Constitution of the Islamic Republic of Iran (1980), “The official language and script of Iran, the lingua franca of its people is Persian... The use of regional and national languages in the press and mass media, however, as well as for teaching in schools the literatures written in them, is permitted according to Persian”. The reality, however, is quite different.

At present there are no publications in Sistani or Balochi language. A number of magazines emerged after the Islamic revolution in 1979, but were closed down soon, due to the pressure from the authorities. There is no provision to teach Sistani or Balochi literature in Iranian schools of Baluchistan.

Ravaghi (1985) claims that some written traces of Sistani can be found in a translation of ‘Koran of Ghods’. It is also claimed that some words and lexical combinations of the Sistani are found in the three well-known historical books i.e. Tarikh-e Sistan (Bahar, 1935), Etyaolmouk

(Setudeh, 1965), and Farhang-e Mohazzabol Al-asma written by Mahmood ibn Omar Zanji Sanjeri. There is no doubt that the authors of these books were Sistani.

Sistani is one of the ancient dialects of Persian. (Bahar, 1970:42) Among foreigner researchers who have done studies on Sistani are Wery ho (1983), Gryanberg (1983), and Lazard (1991). There is also another research into 'Impersonal construction in Balochi' which is written by Jahani and et al (2010). They conclude that in balochi the 3PL construction allows the speakers to distance themselves from the event somehow.

Languages in contact can affect each other in different ways. It much depends on the relative status of the languages. Nowadays it is quite obvious that the national language, Persian, is the socially and culturally dominant language.

Discussion

Vosughi (1992) has distinguished 11 language population or group in Iran. Nevertheless, Persian language has the majority of the speakers in Iran (Vosughi 1992:7 cited in Jamshid 1992: 14) and other dialects spoken in Iran are in a minority and as a result, deeply affected by Persian language. The two dialects discussed in this article have been selected based on their geographical location. Data have been collected from the native speakers of the dialects as well as previous studies. Balochi has the oldest form among recent Persian languages (Asgari, 1978:123). The two examined dialects have several species. Yet, the difference between them is not too much to prevent communication.

Lexical order can statistically predict many characteristics. In Sistani, lexical order is in SOV form (Oveysipoor 1974:194). Following a SOV form in lexical order, Balochi is also the same as Sistani. The following is a sample of collected data from Sistani dialect.

1)var šo kouš stondâ

for them shoes buy. Pt. 1sg

I bought a pair of shoes for them. (Oveysipour, 1995: 103)

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2) va kadu su bra?

To which way go. pt. 3sg

Which way did he go? (the same: 111)

The above examples show sentences with no subjective pronoun, yet correct and grammatical.

3) diro injâ bâreš ka

Yesterday here rain. pt.

Yesterday it was raining in here. (the same: 145)

No expletives such as “it” or “there” have been used in this sentence and merely the verb “rain” has been used.

4) dār-în zar ham akan.in

have-prog.1sg money gather

I am gathering money (Jahani, 2010: 2273)

5) dašt-un šut-un pa ges-a ke morg-g dist-un

Have-pl.1sg go-pt.1sg with house.obl hen-indef.see-pt.1sg

I was going to house that I saw a hen

The above example clearly shows that this dialect has also the possibility to have that-trace.

6) Tabre sar-e kal

To the field go-1pl

Let's go to the field

In example number 6, there is no subjective pronoun. Besides, an inversion of subject and object of the verb is also observable and the sentence is still grammatical. The next examples are from Balochi.

7) Pa wti dōst-ān-o tārīp ko

For self.Gen friend-Pl-Pr.Cl narrate do.Pst.3Sg

I narrate (this) for my friends

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8) teh bīrjand rapt-e pa bāzār-e sarpōš
In Birjand go.Pst.1Pl
In Birjand, we went to the linded market.

As we can notice in the two examples mentioned above, this language likewise has the possibility of omission of subjective pronoun with no need for expletives. Omission of subjective pronoun is optional and it can be used if necessary. For example;

9) mā rapt-ō hord-e
I go.Pst.1Sg. small-Attr sea
I went to the small sea

A rich inflection system is a kind of language system which gives information about person, number and form of the verb. This rich inflection should be accessible to reconstruct the meaning of omitted subject. But the precondition is that it should be permissible in a specific language to lack a subject. This leads to another modification based on Jagoli and Safir's uniformity principle which means that each consistent language either in terms of having obvious markers for person and number in any form of a verb or in terms of lacking them, can allow a null subject and the process of identifying and retrieving a null subject can be explained by means of compare and contrast (Jagoli and Safir 1989, p.32) comparing and contrasting allows languages with no clear morphology to make them able to give the meaning of the verbs and nouns in null subjects.

In Sistani language if the subject is living the verb agrees with it but if it is not living the verb will not be in agreement in plural form. The wall fell. The walls fell (Oveisipour, 1995:182).

Conclusion

This article examines pro-drop parameter in two of the Persian dialects; Sistani and Balochi. Pro-drop parameter refers to the possibility of omission of subjective pronouns in a language. It means that it is possible for some languages to omit the subjective pronoun without forming an ungrammatical sentence. These languages are called pro-drop languages. There are four

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parameters to identify this original parameter: the subjective pronoun being optional, lack of any pronoun to show null subject, the probability of existence of a relative pronoun in addition to the possibility of a shift between the verb and the subject. Word order may not be a strict criterion but it reveals the fact that many of the pro-drop languages.

Another point is related to comparing subject and object. This comparison should exist in all of the examined cases and this makes the omission of subject pronoun possible. If subject pronoun is mentioned, it can be an emphasis on the pronoun.

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Project-based Learning in Business English Classroom

Dr. Fauzia Janjua

Abstract

Project Based Learning (PbL) is an instructional approach built upon the engagement, interest and motivation of the learner which allows them to reflect upon their own choices and opinions to make decisions that affect the outcomes of the project under study. PbL is an effective pedagogy for teaching business students. Engaging the learners in business projects is a practical way to enhance their learning.

A class of 40 MBA students was experimented using a two group pre-test post-test design. The class was divided into two groups; the experimental and the control, by conducting a “communication skill test” both for oral and written skills which was considered as pre-test. PbL is generally done by groups of students working together towards a common goal but the performance is assessed on an individual basis by the evaluation of the contributions made to the process of project realization. The same was taken into account and the students of the

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experimental group were divided into five groups of four each but the control group remained undivided. Treatment period was one semester and the subject was “Business Communication”.

Project-based learning takes a variety of forms in the classroom; two popular forms are WebQuests and research investigations. The later was chosen for this study. Four mini and one major term projects were assigned to the students of the experimental group and the control group was taught theoretically with two written assignments and one oral presentation at the end of the semester. Both the groups were tested for communication skills by conducting a post-test. The results of the pre and post tests were compared statistically using t-test and it was found out that the communication skills of the experimental group improved significantly.

Introduction

English Language has been taught and learnt in a structured, linear fashion, accustomed with the teaching of loads of grammar which is based on unrealistic examples. The behaviorists attempt to teach language through decontextualized practices. Learners end up knowing about the language but not knowing how to use it (Short, Harste & Burke, 1996). Littlewood (1984) criticizing the approach says that there are no mental or cognitive implications of behaviourism in language teaching but only a mechanism of habit formation through imitation and repetition. According to constructivists, knowledge is constructed not transferred. The basic principle of constructivism is that learning takes place when there is construction of knowledge; it is not only concerned with the end product, the process of constructing that knowledge is considered rather more important.

PbL situates language learning in the real world by using real-life problems as the starting point and focus of learning (Barrows, 1985; Dunlap, 2005). It is based on the principle of learning in the arena of social interaction (Mardziah, 1998) where the social participants decide the content and amount of learning (Cole and Engestrom, 1993; Salomon, 1993).

The purpose of the present study is to investigate the use of PbL for the development of oral and written communication skills of the Business learners. The study also attempts to quantify the effect of PbL on the development of communication skills of Business learners.

PbL and Language Learning

Originally, PbL, known as a curricular method, emerged from the field of medical sciences over three decade ago (Barrows, 2000). The use of PbL in different disciplines of science has been effective in the production of learners who are capable of meeting their needs by gearing out the relevant generic skills of life outside the classroom (Wood, 2003; Oliver and McLaughlin, 2001). Dewey introduced PbL into the field of ESL nearly two decades ago as a student-centered teaching (Hedge, 1993). Since then, PbL has also become a popular pedagogy at various levels and in various contexts (see Beckett, 1999; Fried-Booth, 2002; Levis & Levis, 2003; Kobayashi, 2003; Luongo- Orlando, 2001; Mohan & Beckett, 2003; Weinstein, 2004).

PbL is an instructional approach based upon activity learning techniques that engage the interest of the learner and enhances the level of motivation for learning. These activities are designed to connect classroom with the outer world in order to make learning realistic. PbL has now been successfully used as an effective teaching method in EFL and ESL classrooms. Mardziah (1998) emphasizing the use of PbL in language classes points out PbL can provide real-world for language learners by the use of problem-solving activities.

Well-designed, authentic and reliable projects are have been used into language classrooms at all levels with a variety of objectives. PbL is provocative and make learners proceed with their own effort and struggle to gain understanding. It helps developing the language skills as well as assists teaching the content. ELT has much to benefit from the use of PbL in the classroom.

Important Characteristics of PbL

According to Tan (2003), the major characteristics of PbL are:

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- Problems are the thrust of the curriculum – they do not test language skills, rather, they assist in the development of the skills themselves.
- The Problems are poorly-structured – there is more than one solution to a Problem, as new information is gathered, the perception changes and so does the solution.
- Learners are given only guidelines to approach the Problem.
- Authentic performance-based assessment
- Learners share information but they construct their own knowledge.
- Interdisciplinary and integrative

The Benefits of PbL

PbL has an integration of benefits. It:

- Motivates the learners by providing the opportunities and freedom of exploration of knowledge.
- Encourages learners to think creatively and helps them developing their rational thought patterns to find solutions to the problems.
- Builds confidence and inculcates a habit of self directed learning.
- Promotes the habit of working in groups and teams. Teaches the collection of information, sorting it out into relevant to develop solutions.
- Develops acquaintance with the Computers, the Internet, and programs like Microsoft Office Word and Microsoft Office PowerPoint.

Learning Frameworks for PbL

PbL has been practiced in a variety of forms in the classroom. Teachers chose the format that suits their teaching style. Two popular kinds are WebQuests and research investigations.

- **WebQuests:** On WebQuests, the Internet is used to search the required information to complete the task.

- **Research investigations:** Research investigations make use of real-world problem-solving and emphasize critical thinking towards learning. During research investigations, learners collect information; make choices of their own by using higher level thinking to create solutions.

Objective of the Study

This study aims to determine the effect of Pbl in a Business English classroom on the learners' oral and written communication skills.

Hypothesis of the Research

The use of PbL is beneficial for the enhancing the English language communication skills in a Business classroom.

Methodology

This study took a quantitative approach that attempted to investigate the effect of PbL on the learners' English language in a business classroom in the area of communication skills. The nature of inquiry for the present study was experimental which was quantified by the used of statistical procedures.

Population of the Study

All Students registered in MBA and BBA programmes in the public sector universities of the federal capital territory of Islamabad, Pakistan provided the population of the study.

Delimitation of the Study

The study was delimited to the International Islamic University Islamabad only. The selection was made on the basis of convenience sampling technique.

Cohort of the Study

40 MBA students having CGPA ranging between 2.5 and 3.5 formed the cohort for the present research.

Experimental Design

Two group pre-test post-test design was used for the present study.

Instrumentation

Tests for the evaluation of oral and written communication skill used as pre and post tests were the instruments of the study. Oral communication skill was evaluated during presentations of the assigned projects and the written skill was evaluated on the basis of written test.

Experimentation Procedure

The class was divided into two groups of twenty students each; the experimental and the control respectively. A “communication skill test” for oral and written skills was conducted to equate the groups and was considered as pre-test as well. Pbl is generally done by groups of students working together towards a common goal but the performance is assessed on an individual basis by the evaluation of the contributions made to the process of project realization. The same was taken into account and the students of the experimental group were divided into five groups of four each but the control group remained undivided. Treatment period was one semester and the subject was “Business Communication”. Project-based learning takes a variety of forms in the classroom; two popular forms are WebQuests and research investigations. The later was chosen for this study. Four mini and one major term projects (see appendices) were

assigned to the students of the experimental group. The control group was taught traditionally with two written assignments and one oral presentation at the end of the semester. Both the groups were tested for communication skills by conducting a post-test. The results of the pre and post tests were compared statistically using t-test.

Data Analysis

The data for the present study was analyzed using statistical procedures. The results of the evaluation of pre and post tests were analyzed using t-test. The t-test assesses the difference of mean scores of the two groups from each other. This analysis is appropriate whenever comparison of the two groups is required. There are different types of t-tests as per data. For the present study “independent samples t-test” was used and the results were analyzed at .05 level of significance.

Written Communication Skills Analysis

Variable	No. of Cases	Mean Value	Difference of Means	Standard Deviation	t-value	df
Control group	20	39.69	23.09	15.45	3.78	62
Experimental group	20	62.78		31.08		

The result shows that t-value is significant at .05 level which means that the performance of the experimental group is better than that of the control group thus accepting the hypothesis of the study, we can say that the effect of PbL is positive towards the development of written communication skills of Business English learners.

Oral Communication Skills Analysis

Variable	No. of Cases	Mean Value	Difference of Means	Standard Deviation	t-value	df
Control group	20	29.42	13.33	9.96	3.77	62
Experimental group	20	42.75		17.43		

The result shows that t-value is significant at .05 level which means that the performance of the experimental group is better than that of the control group, therefore the hypothesis of the study is accepted again and PbL proves to an effective pedagogy for the development of oral communication skills of Business English learners.

Conclusion

As per results of the present study, PbL is an effective approach to prompt speaking, to improve listening, to provoke reading and to develop writing. However, the focus of the present study was on speaking and writing but the integrated nature of language has shown the effects of PbL on the other two skills as well. “Considerations for teachers,” as suggested by Mathews-Aydinli (2007) provided useful framework for the assessment of the learners. It was also observed that the confidence level of the learners boosted up and the generic skills were enhanced as well. The experimental group was more participative in class room discussions and their argumentation seemed to be more logical which was reflective of the development of creative thinking among the learners. It is recommended that PbL may be tested for all those variables which were not a part of this study to substantiate the findings of the present study and for further research to guide teachers and learners both.

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The Arabic Origins of Derivational Morphemes in English, German, and French: A Lexical Root Theory Approach

Zaidan Ali Jassem, Ph.D.

Abstract

This paper investigates the genetic relationship between derivational affixes or morphemes like *ensure*, *whiten*, *opinion*, *activity* in Arabic and English mainly as well as German, French, and Latin. Applying the lexical root theory as a theoretical framework, it shows, unlike traditional claims in comparative historical linguistics that Arabic and English, for example, are members of different language families, how such morphemes are related to and derived from one another, where Arabic may be their end origin. More precisely, *a-*, *e-*, *n-*, *m-*, *t-*, *be-*, and *s-* based affixes are found in all the above languages to be identical cognates with the same or similar forms and

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meanings or functions, regardless of minor phonetic and morphological changes.

Keywords: Derivational morphemes, Arabic, English, German, French, Latin, historical linguistics, lexical root theory

1. Introduction

The lexical root theory has been proposed by Jassem (2012a-f) to reject the claims of the Comparative Historical Linguistics Method that Arabic and English, German, French, and so on belong to different language families (Crystal 2010: 302; Campbell 2006: 190-191; Crowley 1997: 22-25, 110-111; Pyles and Algeo 1993: 61-94) and to establish instead the genetic relationship between Arabic and English, in particular, and all other (Indo-)European languages. In his (2012a) investigation, he found that all the numeral words in Arabic, English, German, French, Latin, Greek and Sanskrit have the same or similar forms in general, forming true cognates with Arabic as their end origin. Jassem (2012b) provided further evidence from common contextualized religious terms such as *Hallelujah*, *God*, *Anno Domini*, *Christianity*, *Judaism*, *ruthful*, *welcome*, *worship*, *solemnity*, and so on, which were also found to have true Arabic cognates. For instance, *Hallelujah* is a reversal and reduction of the Arabic phrase *la ilaha illa Allah* 'There's no god but Allah (God)' where *Halle* is *Allah* in reverse- i.e., *Allah* → *Halla* (*Halle* 'God'). Jassem (2012c) showed that personal pronouns in Arabic, English, German, French, Latin and related languages are true cognates, which descend from Arabic directly. Jassem (2012d) investigated determiners such as *the*, *this*, *an*, *both*, *a lot*, *very* in English, German, French, and Latin which were all found to have identical Arabic cognates. Jassem (2012e) established the genetic relationship between verb *to be* forms in those languages and Arabic. Finally, Jassem (2012f) showed that inflectional 'plural and gender' markers formed true cognates in all.

In all studies, Jassem (2012a-f) used the lexical root theory as a theoretical framework. As it has been fully described in the above works, a few words will suffice here as a reminder. The name derives from using the lexical (consonantal) root in examining genetic relationships between words like the derivation of *rewritten* from *write* (or simply *wrt*). It comprises a construct, hypothesis or principle and four practical procedures for analyzing lexical roots. The theoretical principle states that Arabic and

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English as well as (Indo)European languages are not only genetically related but also are directly descended from one language, which may be Arabic in the end. In fact, it claims in its strongest version that they are all dialects of the same language. The applied procedures are (i) methodological, (ii) lexicological, (iii) linguistic, and (iv) relational. The methodological procedure concerns data collection and selection (excepting loans) by using semantic fields, e.g., numeral words, religious terms, personal pronouns, determiners, inflectional morphemes, verb to be, derivational morphemes, water terms, etc. The lexicological procedure analyzes words by (i) deleting affixes (e.g., *overwritten* → *write*), (ii) using primarily consonantal roots (e.g., *write* → *wrt*), and (iii) search for correspondence in meaning. The linguistic procedure analyzes words phonetically, morphologically, grammatically, and semantically. The relational procedure examines the relationship between words in form and meaning. The method of describing and analyzing the genetic relationship between words is comparative historical. (For further detail, see Jasem 2012a-f; 4. below).

This paper applies the lexical root theory to the investigation of derivational morphemes in Arabic, English, German, French, and Latin to show their genetic relationship to and/or their descent from Arabic cognates. It has five sections: introduction, data, results, discussion, and conclusion.

2. The Data: Derivational Morphemes (Affixes)

Affixes, which may be suffixes (e.g., *happiness*), prefixes (e.g., *unhappy*) and infixes (e.g., *spoke*) in English, German, French, Latin and Arabic, can be inflectional and derivational. The former indicate grammatical information such as tense, person, number, gender, and case; the latter are word-building devices, attached to words for making nouns, adjectives, verbs, and adverbs. The affixes are generally similar in form and function in English (e.g. Kreidler 2006: 273-283), German (e.g., Canoonet 2012), French (e.g., Lawless 2012), Greek and Latin (Green 2008).

Arabic affixes are called 'extra letters' or morphemes, which are *ten* in number: viz., *s*, *a*, *ʔ* (glottal stop), *l*, *t*, *m*, *n*, *w* (*oo*), *y* (*ee/i*), and *h* (Al-Ghalayeeni 2010). They may be used singly or in combination as prefixes, suffixes, and infixes. For example, *musta-* in *mustarjil* 'behaving like a man' from *rajul* 'man' is three in one: viz., /m/ for present/past participle forms or agent nouns, /s/ for reflexive action, and /t/ for making verbs.

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A closer comparison of English and Arabic affixes shows that they are similar in having the above ten consonants in common, in general. Therefore, these consonants will be used in presenting the results below. The inflectional affixes have already been presented and discussed in Jassem (2012c, 2012f). The focus in this paper will be mainly on the derivational ones here.

3. The Results

3.1 A-Based Affixes

The affix *a-* has several inflectional and derivational functions in English and Arabic. As an inflectional suffix, it indicates feminine gender and plurality (Jassem 2012f). Derivationally, as a prefix, it makes verbs or adverbs from nouns like *scribe/ascribe*, *claim/acclaim*, *side/aside* and adjectives such as *sure/assure*, *certain/ascertain*, *round/around*, *loud/aloud*, modifying their meaning sometimes as in *rise/arise*, *wait/await*, *wake/awake(n)*. Sometimes, it denotes the negative, e.g., *asocial*, *atypical*, *abnormal*. As an infix, it marks irregular verbs as in *sing/sang*, *ring/rang*, *sit/sat*.

In Arabic, *a-* may make:

- (i) verbs from nouns like *arsal* 'send' v. *rasool* 'messenger',
- (ii) transitive verbs from intransitive ones such as *amaata* v. *maata* '(cause to) die', *azaala* v. *zaala* '(cause to) vanish',
- (iii) transitive verbs stronger such as *anha* v. *naha* 'finish, end',
- (iv) comparative adjectives like *ajmal* v. *jameel* '(more) beautiful',
- (v) irregular verbs, alternating with /ee/ or /oo/ as in *saala* v. *yasseel* 'flowed, flow', *qaala* v. *yaqool* 'said/say', and
- (vi) yes/no questions as an interrogative particle in Standard Arabic, e.g., *a-katabt?* 'Have you written?' However, in Syrian 'coastal' Arabic dialects, it is usually used as a negative verbal prefix, e.g., *a-katabtu* 'I haven't written it.'

In short, the prefixes *a-* in English and Arabic are identical cognates, having the same or similar form and functions.

3.2 E- or Y-Based Affixes

3.2.1 The Affix e(e)-

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Sometimes *e-* may be (i) prefixed, though often in combination with *-ate*, to make verbs from some nouns and adjectives like *spouse/espouse*, *strange/estrangle* (cf. *emit*, *evict*, *edit*, *elope*, *escape*, *exit*), *vapour/evaporate*, *scale/escalate*, *value/evaluate*, *long/elongate*, (ii) infixed in irregular verbs as in *hold/held*, *fall/fell*, and (iii) silent in verbs like *make*, *take* and nouns like *tale*, *sale*. As to *-ee*, it makes nouns from verbs as in *employee*, *refugee*.

In Arabic, *e-* (*i-*) (sometimes spelled *a-* but pronounced /i/) may be added to:

- (i) trilateral verbs in the imperative as in *jalasa/ijlis* 'sit',
- (ii) transitive verbs, making them intransitive like *Tawa* 'fold' v. *inTawa* 'be folded',
- (iii) irregular verbs as an infix or suffix, replacing /a/ as in *saala/yaseel* 'flowed/flow', *rama/yarmee* 'threw/throw', and
- (iv) nouns for making adjectives or nouns as in *lubnan* 'Lebanon' v. *lubnani* 'Lebanese'.

Therefore, the English prefix *e-* and Arabic *e-* are cognates. However, silent *e-* in nouns and adjectives as in *tale*, *white* is cognate to the Arabic feminine singular suffix *-a(t)* (pronounced /e/ at pause without /t/ in spoken Arabic as in *qaalat* 'tale' → *qaale*, *jameelat* → *jameele* 'beautiful'). In verbs, its cognate is /a/ as in *kataba* '(he) wrote' which is pronounced *katabe* in Iraqi Arabic. (Note that *tale* and *qaal(at/e)* are identical cognates in which /q/ became /t/ and so are *comely* and *jameele* where /j/ became /k/).

3.2.2 The Suffixes *-y* and *-ly*

Both suffixes go together in English where *-y* may make adjectives from nouns as in *funny*, *hairy* and nouns from verbs as in *entry* (cf. *summary*, *fury*, *diary*) whereas *-ly* forms adverbs from adjectives as in *nicely*, *beautifully* and, occasionally, adjectives from nouns such as *friendly*, *lovely*, *manly*. Thus both suffixes are one in origin with /l/ being an insertion in nouns to facilitate pronunciation or distinguish meaning as in *manly* v. *many*. In fact, in Old English adding *-e* turned adjectives into adverbs such as *loud* v. *loude* 'loudly' (Pyles and Algeo 1993: 116). In Modern English, *-ly* replaced it.

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In Arabic, the suffix *-y* or *-i* (pronounced /ee/) turns nouns into adjectives or nouns, for example, *jabal* v. *jabaly* 'mountain, mountainous', *Arab* v. *Araby* 'Arab/Arabic'. To turn them into adverbials, the suffix *-(a)n* is added, e.g., *Arabiyan*. It also changes verbs to nouns as in *jara* v. *jary* 'running'. Therefore, the English and Arabic suffixes *-(l)y* are identical cognates in which /l/ is an insertion.

3.3 N-Based Affixes

3.3.1 The Suffix *-en* and Prefix (e/i)n-

Jassem (2012c, 2012f) discussed the inflectional cognates of *-en* in English, French, German, Latin, and Arabic. Derivationally, the affix *-en-* is very productive in English which makes (i) verbs from adjectives, e.g., *redden*, *(e/i)nsure*, and nouns like *enact*, *encourage*, *intone*, *inscribe* (cf. *invite*, *insult*, *include*, *embolden*, *impress*), (ii) irregular past participles like *spoken*, *taken*, *fallen*, and (iii) opposites as in *inhuman*, *inanimate*, (*unhappy*). In Old English, it marked the infinitive as in *helpan* 'to help' (Pyles and Algeo 1993: 120-123).

In German, *-en* is very common which (i) indicates the infinitive such as *singen* 'to sing' and (ii) makes verbs from nouns such as *Übersetzung* (n) v. *übersetzen* (v) 'exercise'. In French and Latin, the suffix *-re* is used for the infinitive as in *etre* 'to be', *amare* 'to love'.

Similarly, *-an* is productively employed in Arabic verbs derivationally. It may be:

- (i) suffixed to make verbs from certain nouns like *ward* 'roses', *wardan* 'to flower' and adjectives such as *azraq* 'blue', *zarqan* 'become blue';
- (ii) prefixed and infixes to past tense and present tense verbs each to indicate the passive and/or reflexive such as *inkatab* 'was written', *yinkatib* 'can be written'. In varieties of Syrian and Egyptian Arabic, /t/ replaces /n/, e.g., *itkatab*, *yitkatab* 'was/is written' (see 3.5.3 below); and
- (iii) used as a negative particle alone, which is very common in the Holy Quran and Classical Arabic.

Thus the similarities between the form and functions of *-en* in English and Arabic show that they are identical cognates and point to one common, genetic origin.

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3.3.2 The Suffixes –ion (-ation)

–ion is very common in European languages, turning verbs into nouns as in *opinion, nation, discussion, correction*. In other cases, –ation is used such as *information, civilization, activation* (see 3.5.3 below).

In Arabic, the suffix –an (pronounced /on/ in some Arabic varieties) may be added to verbs to form nouns such as *ankar* v. *nukraan* 'deny, denial', *Taar* v. *Tayraan* 'fly, flight', *hajar* v. *hujraan* 'leave, leaving'. Thus in light of their similarity in form and function, these suffixes are true, identical cognates.

3.3.3 The Suffix –ing

–ing may be added to verbs (in the progressive tense) which may be used as adjectives and nouns (gerunds), e.g., The man is *running*; The *running* man is fast; *Running* is healthy. In Old English, –(e)nde was used (Pyles and Algeo 1993: 123), which varied with –ing in Middle English (Pyles and Algeo 1993: 161); in Modern English, /g/ is usually dropped (Chambers 2009: 120-25).

In Arabic, its cognate is the compound nominal suffix –anat (= *an* 'v./n. suf.' + *at* 'fem. suf.') as in *wardanat* 'flowering' from *ward* 'roses' in which /t/ turned into /d/ or, less likely, verbal –an as in *wardan* 'to flower' and *yaktuban* 'they (f) write' in which /d/ is an insertion. In other words, –in(g)/–inde can be considered variants of the Arabic nominal suffix –anat. To these can be added –ant/–ance as in *applican(t/ce)*, *defian(t/ce)* (cf. Arabic *bardanat* 'one (f.) feeling cold' from *bard* 'cold').

3.3.4 The Suffix –ness

–ness is a very productive suffix in English for turning adjectives into abstract nouns such as *carefulness, business*.

In Arabic, the nominal suffix –anat (pronounced /-ana(h)/ at pause) changes verbs to abstract nouns productively, e.g.,

ward 'rose' → *wardan* 'to blossom' → *wardanat* 'flowering',
walad 'boy' → *waldan* 'act like one' → *waldanat* 'childishness',
azraq 'blue' → *zarqan* 'become blue' → *zarqanat* 'bluishness'.

Therefore, the Arabic suffix –anat is the source cognate of –ness in which /t/ (or /h/ at pause) evolved into /s/. In other words, –ness may be

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analyzed as *n-* 'v. suf.' + *-ess* 'fem. suf.', which is exactly what *-anat* is in Arabic: i.e., /an/ 'v. suf.' + /at/ 'fem. suf.' which became /s/.

3.3.5 The Suffixes *-er/-or*

-er/-or are used in English, German and French to make agent nouns from verbs, e.g., *speak, speaker; act, actor*. In addition, *-er* may be used in comparative adjectives as in *tall/taller, thin/thinner*.

In Arabic, the suffix *-an* can make agent nouns from verbs and adjectives, for example, *sakira* 'drink alcohol', *sakraan* 'drunkard, drunken'; *shariba* 'drink', *sharbaan* 'drinker, drunkard'. In addition, although the comparative is made according to a certain pattern in which vocalic changes apply such as *jameel* 'comely', *ajmal* 'comelier', *Taweel* 'tall' v. *aTwal* 'taller', the suffix *-aan* is often added to nouns in spoken Arabic to express a 'hypothetically' comparative state, e.g., *Tawlaan* 'grown taller (than before)', *bardaan* 'getting colder (than usual)'.

Thus, Arabic *-an* and *-er/-or* in English are cognates where /n/ developed into /r/. To support that *-er/-or* being a further development of *-an*, consider its usage in *American, Arabian, republican*, etc. Adding *-er* to **Americar* and **Araber* would sound very odd indeed. In fact, there are words in English that have both forms with slight semantic differences, for example, *drinker, drunkard, drunken; speak, speaker, spoken*. Moreover, the use of *-er/-or* instead of *-en* in such words differentiates verbal from nominal functions.

3.3.6 The Suffixes *-al, -ar*

-al varies with *-ar* in making adjectives from nouns like *logical, departmental; particular, circular* (cf. **circular*). Like *-(e/o)r* above, their Arabic cognate is *-an*, split into /l & r/.

3.3.7 The Suffix *-ure*

-ure varies with *-ion* in making nouns from verbs such as *pressure* (cf. *compression, depression, repression*), *pleasure*, (cf. *measure, treasure*). Like *-(e/o)r* and *-a(r/l)* above, it derives from the Arabic suffix *-aan* which makes nouns from (i) verbs as in *baTula* 'expire' v. *buTlaan* 'expiry', *khasar* 'lose' v. *khusraan* 'loss' and (ii) adjectives or nouns as in

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baaTil 'false, invalid' v. *buTlaan* 'invalidity'. Sound change turned /n/ into /r/.

In short, all the *n*-based affixes in English, German, French and Arabic are identical cognates in which /n/ turned into /r/ or /l/ in certain cases. In French and Latin, Arabic /n/ passed into /r/, especially in the infinitive. That is, the changes of /n/ to /r/ and /l/ can be treated as kinds of assimilation or dissimilation as happens in *inappropriate*, *illegal*, *improper*, *irreparable*.

3.4 M-Based Affixes

3.4.1 The Suffix –ium

In Latin place names (and English, German and French loans), *-ium* is used for place, for example, *auditorium*, *stadium*. In Arabic, the prefix *ma-* signals place when prefixed to verbs as in *katab* 'to write' v. *maktab* 'a place for writing, desk, office'. Therefore, the affixes *-ium* and *ma-* are cognates, whose positions are interestingly reversed.

3.4.2 The Suffix –eme

-eme denotes 'singularity, smallness' in English nouns, e.g., *sememe*, *phoneme*, *morpheme*, *grapheme*. In Arabic, the suffix *-eem* occurs with this meaning once in the Holy Quran in the word *zaneem* 'illegal child' from *zina* 'illegal sex'. So both are identical cognates. (For inflectional use, see Jassem 2012c).

3.5. T-Based Affixes

3.5.1 The Suffixes -ity, -ite, -t, -th, and -itis

All these suffixes are related in English, French, and German. *-ity* makes nouns from adjectives such as *equality*, *legality* (French *legalite*, German *legalität*); *-ite* may be used in nouns and adjectives as in *termite*, *site*, *erudite*, *white*; *-t* makes nouns from verbs and adjectives like *weight*, *sight height* and may mark the irregular past and past participle forms like *slept*, *wept*, *dreamt*, *learnt*; *-th* forms nouns from verbs as in *health*, *death* (cf. *fourth*); *-itis* signals disease as in *tonsillitis*, *hepatitis*.

In Arabic, the suffix *-at* (pronounced /a(h)/ at pause) forms nouns from (i) verbs like *walada* 'give birth' v. *wiladat* 'birth' and (ii) adjectives, e.g., *aSfar* 'yellow' v. *Sufrat* 'yellowness', *Islami* 'Islamic' v. *Islamiat*

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'Islamism'. Sometimes the related compound suffix *-iat* (*i-* 'adj. suf.' plus *-at* 'fem. suf.')

 turns (i) adjectives into nouns such as *Zurr* 'free' v. *Zurriat* 'freedom' and (ii) nouns into 'artificial' ones like *wathan* 'stone' v. *wathaniyat* 'paganism'.

In summary, the Arabic suffixes *-(i)at* and *-ity, -itis, -ite,* and *-t(h)* in English are cognates, especially in view of the fact that all are 'feminine' in gender (cf. *-ette* 'fem. suf.' in *Henriette* (Jassem 2012f). In *-th,* /t/ became /th/ (cf. Jassem 2012a).

3.5.2 The Suffix *-hood* (German *-heit*)

In English *-hood* makes abstract nouns from common ones such as *manhood, motherhood.* Originally, it has two meanings: 'hat' and 'manner or quality' (Harper 2012).

Arabic has two formally similar but semantically different cognates, which are (i) *2aTTat* 'head cover' in which /2/ became /h/ and (ii) *hai'at* 'manner' where /t/ changed to /d/. However, it might also derive from the above suffix *-at* into which /h/ was inserted as happens in certain Arabic plurals such as *umm* 'mother' v. *umma^hat* 'mothers', *abb* 'father' v. *ubba^hat* 'fathers'; also it makes abstract from common nouns as in *rajul* 'man' v. *rujoolat* 'manhood'. Furthermore, as /-at/ may be pronounced with /t/ in connected speech (e.g., *rujoolat*) but with /h/ or Ø at pause (e.g., *rujoola(h)*), *-hood (-heit)* might be a reversal of *-at* together with the usage of both /h/ and /t/ at the same time and the passage of /t/ into /d/: i.e., *-a(t/h) → -tah → -hat* (hood).

3.5.3 The Suffix *-ate*

-ate is a productive English suffix for marking verbs such as *activate, educate,* adjectives such as *separate, alternate,* and nouns like *consulate, emirate.*

Similarly, the Arabic prefix *ta-* changes trilateral verbs to quadrilaterals in the past tense such as *basama* 'smile' v. *tabassama* 'smile', and quadrilaterals to quintelaterals, e.g., *qaatal* 'fight' v. *taqaatal* 'fight with'. Sometimes, *ta-* varies with *id-* as in *tadhakarra* and *iddakkara* '(he) remembered' from *dhakara* 'mention, remember'; *tadarraba* and *iddarraba* 'train (it.v.)' from *darraba* 'train (t.v.)'. In Damascus Arabic, *-id* passes into *-it* in the passive as in *ittakal* '(it)'s eaten' and *yittakil* '(it) can be eaten'. As an

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infix, it forms reflexive verbs as in *fakhr* 'pride', *tafaakhar* 'to boast', *iftakhar* 'to be proud'; *sami3a* 'hear' v. *istama3a* 'listen' (cf. Jassem 2012e). Finally, as a suffix, it marks nouns such as *wiladat* 'birth' (3.5.1).

In short, English *-ate* and Arabic *ta-/-at* are true cognates, though in different positions.

3.5.4 The Prefixes *de-*, *des-*, *dis-*, & *ad-*

These prefixes are all similar in making verbs from certain nouns such as *scribe/describe*, *value/devalue*, *term/determine*, *ploy/deploy* (cf. *decorate*, *desecrate*, *deserve*, *discuss*, *discriminate*, *dismiss*); *advice*, *advocate*, *admit*, *admire*, *adsorb* (cf. *aggravate*, *accumulate*, *assign*, *attach*, *afford*, *allocate*, *absorb*). They may also signal the negative, e.g., *cry/decry*, *rail/derail*, *ascent/descent*, *unite/disunite*.

The different functions of these prefixes are derived from different Arabic cognates as follows:

- (i) The negative meaning comes from Arabic *Did* 'against' where /d/ turned into /s/ or was deleted;
- (ii) *de-* and *ad-* derive from Arabic *ta-* above which might vary with *id-* as in *tadarraba* and *iddarraba* 'train (it. v.)' (see 3.5.3 above);
- (iii) *des-* and *dis-* derive also from Arabic *ta-* in addition to the infix *-s-* which usually accompanies it to modify meaning, e.g., *katheer* 'much' → *takthur* 'become much' → *tastakthir* 'find it much';

In short, *de-*, *des-*, *dis-*, and *ad-* are all variant forms of their identical Arabic verbal cognate *ta-* (plus *-s-*) in word initial position where /t/ passes into /d/ (or splits into /d/ and /s/).

3.5.5 The Suffixes *-(at)ion* and *-dom*

-ation is a compound of *-ate* plus *-ion* whose Arabic cognates have already been settled (3.5.3, 3.3.2). Alternatively, its cognate is the compound *-atun* (*-at* 'fem. suf.' plus *-un* 'indef. sg. suf.')

as in *ummatun* 'nation', *karamatun* 'dignity' in which /t & n/ became /d & m/ each.

As to *-dom* as in *freedom*, *boredom*, it comes from Old English *dom* 'statue, judgement' and/or *doom* 'law, judgement, condemnation, fate, ruin, destruction' (Harper 2012). Arabic has two formally similar but semantically different cognates, which

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are (i) *dumia(t)* 'statue, dummy' and *dhamm* 'condemnation' where /dh/ became /d/. However, this might not be the case at all. Its true Arabic cognate is *-atun* above in which /t & n/ became /d & m/ each. To substantiate that further, consider *martyr* v. its identical Arabic cognate *ma(y)it* 'dead' in which /r/ is an insertion and *martyrdom* v. *meetatun* 'death' which consists of the root *mawt* 'death', *-at* 'fem. suf.', and *-un* 'indef. sg.'. Thus its relationship to English *-ate/-ation* and Arabic *-at* is clear (see below 3.8.3).

In short, all the *t*-based affixes in Arabic and English are identical cognates in some of which /t/ became /d/.

3.6. S-Based Affixes

3.6.1 The Suffix *-i(s/z)e*

-i(z/s)e is very productive in current English which makes verbs from nouns like *summarize*, *organize*, *devise*, *revise* and adjectives like *Americanize*, *Arabize*.

In Arabic, a few source cognates are possible. First, the prefix *sa-* 'will/shall' changes present tense verbs to the future, e.g., *aktub* 'I write' v. *sa-aktub* 'I will write'. Alternatively, the Arabic prefix *ist-* is a highly likely cognate which modifies meaning in verbs and adjectives, e.g., *katab* 'write' v. *istaktab* 'continue to write', *qaabal* 'meet' v. *istaqbal* 'receive someone', *sahl* 'easy' v. *istashal* 'find it easy'. Finally, it may be considered a phonetic evolution of *-ate* (cf. *summarize* and **summarate*) where /t/ became /s/ or /z/, whose Arabic cognate has already been resolved (3.5.3).

3.6.2 The Prefixes *ex-* and *se-*

Ex- 'out' may modify meaning such as *ex-wife*, *excommunicate*, *extradite*, *exacerbate*, *exaggerate*, *excrete*, *exclude*. Its Arabic cognate is *aqSa* 'out, far' in which /q & S/ became /k & s/ each. Another possible cognate is the above Arabic prefix *-ist* in which /s & t/ turned into /k & s/ together with reordering, for example, *kabeer* 'big' v. *istakabar* 'to be

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proud' (cf. *exacerbate* in Jassem 2012b). Note that **istcavate* would be phonotactically impossible in English and so *excavate* is the right phonetic choice.

As to *se-*, it modifies meaning in such words as *secrete* (*excrete*), *seclude* (*include*, *exclude*, *preclude*), *separate* (*pair*, *repair*). As its original Latin meaning is 'aside, hidden', then its true Arabic cognate is *zaa2a* 'move aside, shift' where /z & 2/ merged into /s/. Alternatively, it is cognate to Arabic *sa* or *ta-* above as **taparate*, **taclude* would be inadmissible phonotactically. (Cf. Arabic *katab* 'write', *inkatab* 'written', *istaktab* 'go on writing', *binkatib* 'writeable', *sayaktub* 'will write' with *seclude* above.)

3.6.3 The Suffixes –ese, -ous

–*ese* may be added to certain (i) proper nouns to make adjectives or nouns such as *Chinese*, *Japanese* and (ii) common nouns to make abstract ones such as *journalese*, *motherese*. As to –*ous*, it makes adjectives from nouns as in *furious*, *marvelous*.

In Arabic, their direct cognate is the nominal 'feminine' suffix –*at* which makes abstract nouns from (i) common ones as in *umm* 'mother' → *umoomat* 'motherhood' and (ii) adjectives as in *saalim(at)* 'safe (m/f)' → *salaamat* 'safety'. In speech, /t/ is pronounced /h/ or Ø at pause. Thus, –*at* and –*ese/-ous* are identical cognates where /t/ (or /h/) turned into /s/.

3.6.4 The Suffixes –ic (German -isch, French -ique), -age

–*ic* is very productive in English which makes adjectives from nouns, e.g., *terrific*, *rhythmic*, *Arabic*. –*age* is added to nouns like *orphanage*.

In Arabic, the suffix –*y/-i* (pronounced /ee/) makes adjectives from nouns such as *naar* v. *naari* 'fire', *islam* v. *islami* 'peace', *gharb* v. *gharbi* 'west, Europe' (where *gharb* and *Europe* 'west' are identical cognates where /gh & r/ merged.). In some ancient Arabic dialects, /j/ was added, yielding *narij*, for instance. In addition, –*ik* varied with –*i* in ancient Arabic dialects as in *hindi* or *hindik* 'Indian'. In Kuwaiti and UAE Arabic dialects today /j/

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is replaced by /y/ such as *wajh/wayh* 'face', furthermore. (For further detail, see Jassem 1993: 118-120; Jassem 2012c)

In summary, the suffixes *-ic*, *-age*, and *-i* or *-ij* are identical cognates, in which 'inserted' /j/ turned into /k/ (cf. Jassem 2012c). *Age* and Arabic *2ijja(t)* 'age' are identical cognates where /2/ was deleted or merged into /j/, furthermore.

3.7 W-Based Affixes

3.7.1 The Suffix -ive

This is a very productive suffix in English, German, and French which makes adjectives from verbs and/or nouns such as *active*, *negative*, *relative*, *creative*.

In Arabic, the very productive suffix *-wi* changes nouns to adjectives and nouns, e.g., *dam* 'blood' v. *damawi* 'bloody', *Hama* 'Syrian city' v. *Hamawi* 'one from Hama', *baiD(a)* 'egg, ovum' v. *baiDawi* 'oval'. (Note that *ovum* and *baiD* 'egg' are identical cognates where /b & D/ merged into /v/ and so are *egg* and *ji2* 'melon' in which /j & 2/ merged into /g/.) Thus, *-wi* and *-ive* are identical cognates in which /w/ turned into /v/.

3.7.2 The Suffix -fy

-fy makes verbs from adjectives or nouns, e.g., *personify*, *beautify*, *stupefy*, *defy*. It has two possible Arabic cognates. The first is *-wi* above whose function shifted from an adjectival to a verbal function in English. In other words, *-fy* is a further development of Arabic *-wi* via *-ive*. The second is the very common prefixed particle *fa-* 'so, then', which indicates phrasal succession and sequence, e.g., *katab* '(he) wrote', *fakatab* 'then (he) wrote'. It is reported that a Christian monarch, when he saw the second greatest Caliph of Islam, Omar ibnu-l-Khattab, sleeping rough under a tree, exclaimed: "*2akamta* 'you ruled', *fa3adalta* 'then you were just', *faaminta* 'so you felt safe"', *fanimta* 'and so you slept'. In summary, Arabic *-wi*, English *-ive*, and *-fy* are identical cognates where the last shifted from an Arabic adjectival to an English verbal function.

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3.8 Miscellaneous Affixes

3.8.1 The Prefixes *be-*, (*pre-*, *pro-*, and *per*)

Be- may (i) modify meaning as in *come* v. *become*, *side* v. *beside*, (ii) make verbs such as *head* v. *behead*, *little* v. *belittle*, and (iii) be inserted in certain words like *absorb*, *abstain*, *abscond*.

In Arabic, although the particle *bi-* 'in, with' is a preposition as in *bi-al-bait* 'at-the-home', it is usually prefixed to all present tense verbs in spoken 'Damascus' Arabic as in *bi-naam* '(he) sleeps'. This is the most likely source cognate thereof.

As to *pre-* as in *prescribe*, *prevent* and *pro-* as in *pronounce*, *programme*, *produce*, they can be considered variant cognates of *be-/bi-* above in which /r/ is an insertion. Noting their meanings, however, both derive from two formally similar but semantically different Arabic cognates: i.e., *pre-* from a reordered *qabl* 'before' while *pro-* from *qaabil* 'accepting' in both of which /q/ turned into /r/ into which /l/ merged. *Per* and *bi-* are identical cognates in which /r/ is an insertion.

3.8.2 The Prefixes *com-* & *con-*

The prefix *com-* and its variants *con-*, *col-*, *cor-*, *co* are added to such words as *compose*, *commute*, *connect*, *consider*, *collect*, *correct*, *co-author*. Since all come from Latin *cum* 'with' (Harper 2012), then their identical Arabic cognate is a reversed *ma3* 'with' in which /3/ became /k/. Alternatively, *com-* might derive from (i) the compound prefix *mus-* (*m-* 'noun suffix' + *s* 'verb suffix') in reverse where /s/ became /k/ as in *qatal* 'kill', *mustaqtil* 'eager to kill' or (ii) *?in-* 'reflexive pref.' as in *?inkasar* 'to be broken' from *kasar* 'break' in which /?/, a glottal stop, changed to /k/.

3.8.3 The Suffix *-ment*

-ment is uncommon, which is used to make nouns from certain 'French' verbs such as *establishment*, *bewilderment*, *amazement*. It comes from Latin *mentum* 'result or product of action' (Harper 2012). Although Arabic *muntaha* 'end, result (of something)' may be its cognate where /h/

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merged into /t/ or was dropped, this might not be the case at all. However, it can be more appropriately treated as a 'compound' suffix comprised of *m + n + t* as in *activities* (-ive + -ity + -s). In light of this, its identical Arabic cognate is *-anat* in which /n/ split into /m/ and /n/ as in *zarqanat* 'getting blue' (from *azraq* 'blue', *zarqan* 'to get blue'). To support this view, consider *ferment* (*fermentation*) which comes directly from Arabic *khamr* 'wine' and related derivatives like *khamrat* 'wine', *khamraan* and *khamraanat* 'fermenting, fermented' in which /kh/, a velar fricative, changed into /f/. Thus it is related to *-ness* above (3.3.4).

Alternatively, it comes, though less likely, from the compound prefix *muta-* with /n/ being a split or an insertion, e.g., *mutafarriq* 'divided' from *tafarraq* 'divide', *farq* 'division'.

3.8.4 The Suffix *-ship*

-ship makes abstract nouns (especially professions) from common ones such as *friendship*, *professorship*. As a full word in origin, its cognates were described in detail in Jassem (2012b). For example, *friendship* is two words in one: *Friend* derives from a reordered Arabic *rafeeq*, pl. *rufqaan*, *rifaaq* or *rufqat* 'friend(s)' in which /q/ became /d/; *ship* is from Arabic *Saa2ib* 'owner, companion' in which /S/ and /2/ merged into /sh/. In Arabic, *Saa2ib* usually refers to one's job like *Saa2ib San3a* 'work owner, craftsman', *Saa2ib shahadat* 'degree holder'. Thus *friendship* combines both such meanings.

3.8.5 The Expression in a (adj.) way

This phrase and similar others are very often used adverbially, e.g., *in a nice way/manner*, *in good fashion*, *in elegant style*. *In* is a cognate of Arabic *min* (lit., from) via lexical shift in which /m/ and /n/ merged. *Way* may derive from either of two closely related Arabic words: (i) *wajh* 'face, way' and related *wijhat* 'direction, way' in which /j/ became /y/ while /h/ merged into /w/ or was deleted, or (ii) *hai'a(t)* 'way, manner' in which /h/ became /w/, though less likely. *Style* comes from Arabic *shakl* 'shape, form' in which /sh & k/ became /s & t/ each.

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4. Discussion

The above results agree with Jassem's (2012a) investigation of numeral words, common religious terms (Jassem 2012b), pronouns (Jassem 2012c), determiners (Jassem 2012d), verb *to be* forms (Jassem 2012e), and inflectional 'gender and plurality' markers (2012f) in English, German, French, Latin, Greek, and Arabic which were found to be rather dialects of the same language. In all, the percentage of shared vocabulary or forms between Arabic and English, for instance, was 100%, which means that they belong to the same language (i.e., dialects), according to Cowley's (1997: 172-173) classification.

Of all the studies above, the most pertinent is Jassem (2012f) which compares very well with this. In both studies, the same morphemes like *a*, *at*, *en* may be used inflectionally (as suffixes) and derivationally (as prefixes and suffixes). Because such morphemes change form or pronunciation due to morphological causes such as derivation, grammatical category, word position, and so on, they are more properly termed morphophonemes: i.e., phonemes with a grammatical function or morphemes with a different pronunciation. Besides, their alternation is morphologically conditioned, resulting in morphophonemic rules, for which a brief summary is attempted below.

- i) The affix *a* was derivationally used as a prefix for making verbs in Arabic and English (3.1 above) and inflectionally as a suffix for feminine gender and plurality (see Jassem 2012f).
- ii) The *e-/y*-based affixes occurred word initially as *e-* in verbs like *estrangle* and word finally as *-ee/-y* in nouns and adjectives like *refugee*, *fury*, *funny*; /j/ (and /k/) are insertions or additions as in *rhythmic*, *leakage*. In Arabic they occurred as suffixes in verbs and nouns as in *jari* 'running', *Araby* 'Arab' (3.2 above). Inflectionally, *e*-marked feminine gender in French and spoken Arabic and plurality in Arabic and Latin (Jassem 2012f).
- iii) The *w*-based affixes occurred as adjectival and nominal suffixes in Arabic as in *baiDawi* 'oval' which changed in English to /v/ in nouns and adjectives as in *relative* and /f/ in verbs as in *rectify* (see 3.7.1-2 above).
- iv) The derivational *t*-based affix was used in Arabic as a prefix in verbs as in *takathar* 'increase', which became /d/ in English as in *decrease*,

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describe, admit; as a suffix, Arabic /t/ remained the same as in *activate, activity* or became /s/ in nouns and adjectives as in *journalese, wondrous, grandiose* (3.5.1-5 above). Inflectionally, Arabic /t/ varied with /s/ in signaling mainly feminine gender and plurality in English, German, French, and Latin (Jassem 2012f; cf. Jassem 2012c).

- v) The derivational *s*-based affixes overlap with *t*-based ones, which are used as prefixes in Arabic verbs as in *sa-aktub* 'I'll write' or *istaktab* 'continue to write' which remained unchanged in English as in *seclude, secrete* or became /ks/ as in *exclude, examine*. As suffixes, English /s/ developed from Arabic /t/ via /h/ as in *motherese* from Arabic *umoomat* 'motherhood' and *summarize* (3.6.1-4 above). The alternation between *-ize* and *-ate* seems to be phonetically and morphologically conditioned with the former being attached to 'vowel-final' nouns like *summary, American* while the latter to 'consonant-final' adjectives like *active*. This means that they are variants of the same morpheme, say, *-ate*, which was the case in Old English (3.5.3 above). As an inflectional 'plural and feminine gender' suffix, English, German, French, and Latin /s/ developed from Arabic /t/ although it (the latter) stayed the same in some (cf. Jassem 2012c, 2012f).
- vi) The derivational *n*-based affixes occurred as noun and verb suffixes and prefixes in Arabic and English. The *n-*, *m-*, *r-*, and *l-*forms are phonetically conditioned in English, German, and French (3.3.1-7 above). Inflectionally, they occurred as suffixes of plurality in Arabic, English, German, and French, of masculine gender in Arabic but feminine gender in English, German, and French (Jassem 2012f; also cf. 2012c).
- vii) The *m*-based affixes in English, Latin, and Arabic are identical cognates (3.4 above).
- viii) The Arabic and English *b*-based affixes are identical cognates where Arabic /b/ turned into /p/ as in *become, prescribe, proscribe, per* with /r/ being an insertion (see 3.8.1 above).

Thus this study shows over and over again the adequacy of the lexical root theory for the analysis of the close genetic relationships between the above languages where the percentage of shared affixes in general was

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100% which means that they are dialects of the same language according to Cowley's classification. As a consequence, the main lexical root theory principle that states that Arabic, English, German, French, Latin, and so on are not only genetically related but also are dialects of the same language is empirically sound and verifiably true.

Regarding the four applied procedures of analysis, all operated neatly. First, the lexicological procedure showed that the lexical (consonantal) root was an adequate, analytic tool in relating derivational morphemes to each other. For example, English *de-/di(s)-/ad-* have been successfully traced back to their Arabic root cognate *ta-* (3.5.3 above) by isolating the root 'consonants' and overlooking the 'precise quality of vowels' (cf. Jassem 2012a-f). The etymology or historical origin and meaning of morphemes was found very useful also. For example, English *-i(s/z)e* came into Middle English from Latin via French, which was *-attan* in Old English (Harper 2012); its Arabic cognate is *ta-* where /t/ became /s/.

The phonetic analysis played an indispensable role in relating affixes to each other as a result of the enormous changes that affected Arabic consonants especially in English, German, French, Latin, and even Arabic varieties themselves (e.g., Jassem 1993, 1994a, 1994b, 2012a-f). The main sound changes that affected Arabic consonants here can be summed up as follows:

- (a) Arabic /t/ as in *takallam* 'talk' and *jameelat* 'comely' changed to (i) /d/ as in *determine*, (ii) /s(z)/ as in *obvious*, *grandiose*, *summarize*, (iii) /th/ as in *health*, and (iv) /h/ (or (iv) Ø) in spoken Arabic at pause (3.5 above).
- (b) Arabic /n/ as in *nukran* 'denial' and *inkasar* 'to be broken' passed into /l, r, & m/ as in *logical*, *circular*, *weaker*, *American*, *phoneme* (3.3.1-7 above).
- (c) Arabic /w/ as in *baiDawi* 'oval' passed into /v & f/ as in *active*, *deify* (3.7.1-2 above).
- (d) Arabic /y/ (i/ee) as in *naari* 'fiery' palatalized into /-ij, -ic, -age/ as in *funny*, *acidic*, *roughage* (3.2, 3.6.4 above).
- (e) Vowel shift in tongue height (raising, lowering), part (fronting, backing, centering), length (long, short), and lip shape (round, unround) occurred in all languages; for example, consider the Arabic affix *at* (pronounced /e(h), i/ when final in spoken Arabic) and its

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English cognates *de-*, *dis*, *ad-* where the low central vowel /a/ became low, mid, and high (cf. Jassem 2012a-e).

Morphologically and grammatically, all the derivational morphemes here and inflectional ones (Jassem 2012e) had Arabic cognates.

Finally, the same or similar semantic or functional patterns occurred as reported in Jassem (2012e). Morphological stability was evident in all derivational morphemes like *t-*, *n-*, and *s-* based forms in English, French, and German, which still retain the same or similar meanings or functions as their Arabic cognates (3.1-8 above). Morphological shift was noted in Arabic *-aan* whose function shifted from a masculine noun marker (e.g., *sakraan* 'drunkard') to nominal marker in English, (German, and French) (e.g., *Anglican*) (3.3.5 above). Morphological split affected Arabic *ta* from which initial *de-* and final *-ate* came in English (3.5.3 above); also Arabic /n/ split into /l, r, & m/ in English (3.3.1-7 above). Lexical convergence occurred in *-ize* which might derive from (i) Arabic *sa-* 'future suffix' (3.6.1 above) or (ii) *ta* (3.5.3 above). Morphological multiplicity is manifested in the double usage of all the morphemes derivationally and inflectionally; e.g., *n-* and *t-* forms mark (i) verbs, (ii) nouns, and (iii) adjectives besides (iv) plurality and (v) feminine gender (3.3, 3.5 above). Morphological change happened in constraining *-(e)n* in English to certain verbs and nouns and its overgeneralization in German to all infinitives, realized as *-r(e)* in Latin and French (3.3 above). Finally, morphological variability was evident in the presence of several word derivation variants, which are utilized in different ways in all the languages above, e.g., *de-/dis*, *ad-*, *-ate*, *-ize*, *-en* in English (3.1-8 above).

As regards the relationship between form and meaning, all the above derivational morphemes like *t-*, *s-*, and *n-* based affixes in Arabic, English, German, and French have similar forms and meanings: i.e., true cognates, with Arabic being their main origin (3.3-6 above); some underwent morphological shift, however. Some are formally different but semantically similar such as *desire*, *admire*, *attack*, *acclaim*, *activate*, all of which derive from Arabic *ta-* (3.5.4 above). Formally similar but semantically different markers occurred such as *-ic*, *-age* v. *Ich* 'I in Old English and German', which all have Arabic cognates (3.6.4 above; cf. Jassem 2012c).

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In light of the above, therefore, all the foregoing derivational affixes in Arabic, English, German, French, and Latin are true cognates in the sense of having similar forms and meanings. Arabic can be safely said to be their origin all for which Jassem (2012a-f) offered some equally valid reasons which the curious reader can refer to. For example, Arabic has multiplicity and variety in the sense that it has for each morpheme all the above-mentioned variants and many more whereas every other language may have two or three for each type. That is, Arabic has for each morpheme more variants that can accommodate all those in English, German, French, Greek, and Latin put together. As an example, take verb markers in Modern English (e.g., *-ate*) and Old English and German (e.g., *-en*), French and Latin (*-re*) and compare them with Arabic, you will find that Arabic has them all. Furthermore, Arabic is structurally more open as affixes can be prefixed, infixes or suffixed to words while all the others are less so or closed. In addition, all Arabic affixes are related to each other functionally, e.g., the *t*-based suffixes being feminine in gender. Therefore, due to variety, multiplicity and openness, Arabic affixes are the original cognates of all such forms in English, German, French, and so on.

5. Conclusion and Recommendations

The different derivational morphemes (and the inflectional 'plural and gender' markers (Jassem 2012f)) in English, German, French, Latin, Greek, and Arabic were found to be genetically related to one another, forming identical cognates. Almost all morphs have double functions: inflectional and derivational. Inflectionally, they are always in end position while they may be initial and final derivationally. Because they change form according to morphological and phonological factors, they are technically called morphophonemes whose variations are morphologically conditioned. The main conclusions of this paper can be summed up as follows.

- i) *t*-based affixes: Arabic *ta* as in *takathar* 'increase', *salaamat* 'safety' and English *de-*, *di(s)-*, *ad-* (also *at-*, *ac-*, *ag-*, *am-*, *-al*) as in *describe*, *discuss*, *admit*, *attest*, *acclaim*, *amputate*, *allocate*, *aggravate* and *-ate*, *-ity-*, *th*, *-ese* as in *activate*, *activity*, *health*, *journalese*, (*obvious*, *grandiose*) are identical cognates where Arabic /t/ developed into /d., th, & s/ mainly. That is, as a prefix, Arabic /t/ varied with /d/ and its

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- alternants in English but, as a suffix, it remained the same or became /th or s/ (3.5 above). As an inflectional, the same rule holds in general (Jassem 2012f, cf. 2012c). As a rule, one can state that derivational and inflectional Arabic /t/ changed to or varied with /d & s/ in all the above languages (cf. Jassem 2012c). Formulaically, /t/ → /d/ ##----- (word initially); /t/ ↔ (varied with) /d, th, & s/ -----## (word finally)
- ii) *s*-based affixes: As prefixes, Arabic *sa-* and *ist-* as in *sa-aktub* 'I'll write' or *istaktab* 'continue to write' and English *se-* and *ex-* as in *seclude*, *secrete*, *exclude*, *examine* are identical derivational cognates where /ist/ became /iks/. As suffixes, English /s/ as in *motherese* and *summarize* developed from Arabic /t/ (via /h/) as in *umoomat* 'motherhood' (3.6 above). The same rule applies to the inflectional *t-* and *s-* based 'gender and plural' morphemes (Jassem 2012f) in Arabic, English, German, French, and Latin where Arabic /t/ varied with /s/. As a rule, one can state that, although derivational and inflectional /s & t/ in Arabic, English, German, and French overlap in many ways, Arabic /t/ turns in these languages into /s/ in final position, signaling feminine gender and plurality in essence (cf. Jassem 2012c).
 - iii) *n*-based affixes: Arabic, English, German, and French *n*-based morphemes are identical cognates derivationally (and inflectionally (Jassem 2012f) where /n/ turned into /m, r, & l/ also (3.3 above). As a rule, one can state that derivational and inflectional Arabic /n/ may vary with /r, l, & m/ in all such languages.
 - iv) *m*-based affixes: Latin and English *-ium* and Arabic *ma-* are identical cognates (3.4 above).
 - v) *w*-based affixes: Arabic *-wi* as in *baiDawi* 'oval' and English *-ive* as in *relative* and *-fy* as in *rectify* are identical cognates where /w/ changed to /v & f/ (3.7 above).
 - vi) *b*-based affixes: Arabic *bi-* and English *be-* (also *pre-*, *pro*, and *per*) as in *become*, *prescribe*, *proscribe*, *pervert*, *per* are identical cognates where Arabic /b/ turned into /p/ with /r/ being an insertion (3.8.1 above).
 - vii) *e*-/(*y*)-based affixes: Arabic *-y* (pronounced/spelled /i or ee/) as in *Araby* 'Arab' and English *e-*, *-ee*, and *-y* as in *estrangle*, *evolve*, *refugee*, *funny*, *lovely* are identical cognates (where /j/ and /k/ may be inserted or added as in *rhythmic*, *leakage*) (3.2 above).

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viii) *a*-based affixes: Arabic and English *a*- as in *azaal* 'demolish' and *amass* are identical cognates derivationally (and inflectionally where Arabic /a/ may vary with /e & i/ in feminine and plural nouns in English, German, French, and Latin (Jassem 2012f)) (3.1 above).

Thus, despite the huge number of affixes in English, (German, and French), they can be reduced to a limited, mainly consonant-based set.

In summary, the lexical root theory has over and over again proven to be applicable to and adequate for the analysis of the close genetic relationship between derivational and inflectional morphemes in Arabic, English, German, French, Greek, and Latin. The double use of the same morphemes inflectionally and derivationally in all point to a common genetic source at the top of which Arabic firmly stands. To consolidate these findings, further research is required into all language levels and their application to language teaching, lexicology and lexicography, translation, cultural (including anthropological and historical) awareness and understanding (Jassem 2012a-f). As a vast, useful, and extremely interesting research area, its results will hopefully help unite a deeply disunited world where learning a language and, consequently, adapting to a new culture may become awfully easier in the end.

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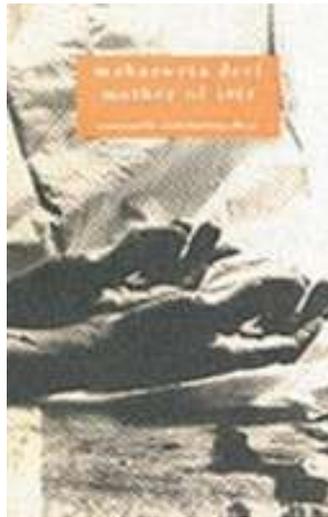
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A Committed Social Activist

Mahasweta Devi is a well-known Indian woman writer in the twentieth century. She is a committed social activist. Her writings portray the poverty, hunger, oppression and corruption in the society. As Sujit Mukherjee states, Mahasweta Devi turns “to recording the present instead of reconstructing the past.”



Her novel *Mother of 1084* is a fiction of documentation in which she seeks the roots of the revolutionary fervor of the urban rebels. In the novel, Mahasweta Devi deals with an immediate past in order to comment on the present in which many mothers and their sons are driven to martyrdom.

Mahasweta Devi's works concentrate on the issues of exploitation and marginalization as long continuing socio-historical process embedded in social and cultural practices, a focus on the interlocking structures of oppression, the criss-cross of multiple hierarchies of class, caste and gender. Her works fill the gap within

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literature on what must be considered the most significant peasant movement in the India of the last third of the twentieth Century. This paper focuses on the language of defiance in relation to female emancipation in Mahasweta Devi's *Mother of 1084*.

Women- An Exploited Group

Mahasweta Devi believes that “a responsible writer, standing at a turning point in history, has to take a stand in defense of the exploited” (18). She considers women as one group among the exploited and under subjugation. Her writings provide scope for viewing her work from the feminist angle. Mothers bearing the brunt of social and political oppression, enduring all, and later offering resistance with indomitable will, dominate her writing.

Psychological Crisis of a Mother

Mother of 1084 focuses on the psychological and emotional crisis of a mother who awakens one morning to the heart-rending news that her dear son is lying dead in the police morgue, and is demeaned to a mere numeral – corpse No. 1084. This article to examine how this emancipation leads her to a journey of discovery, in the course of which, struggling to understand her Naxalite son's revolutionary commitment, she begins to recognize her own alienation, as a woman and wife, from the complacent hypocritical, bourgeois society her son had rebelled against.

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Mahasweta writes:

I set an apolitical mother's quest to know her martyred Naxalite son, to know what he stood for; for she had not known true Brati ever, as long as he had been alive. Death brings him closer to her through her quest and leads the mother to a journey of self-discovery and discovery of the cause of her son's rebellion (31).

Mother's Journey

After Brati's death, his mother Sujata journeys into the past and undergoes a process of self-introspection and wonders at herself and her family members, or at the society which is responsible for his death. As she seeks an explanation for the death of her son, she too finds that the entire social system is cadaverous and as she takes a closer look at the society, she finds no legitimacy for his death.

She discovers that Brati had rebelled because he was not happy with the way things were. He found that hypocrisy and corruption was rampant throughout society – in the administration, in the police, in the politics, in cultural-intellectual establishment and in fact, in every individual belonging to a particular class. He had lost faith in the social system itself which did not care for moral and human values, he wondered why only the corrupt and immoral people occupy the highest position in the society and people who care for morality and their country are killed.

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Mother's Probe – Who Is the Criminal?

As Sujata probes deeper into the causes of her son's death, she realizes that the killers in society, those who adulterated food, drugs and baby food, had every right to live; the leaders who led the people to face the guns of the police and who found themselves the safest shelter under police protection had every right to live, but Brati and his friends, who wanted to reform the society had no right to live. She wonders whether her son, or his killers are the criminals.

She discovers that her son was the criminal because he had lost faith in this Indian society ruled by profit-crazy businessmen and leaders blinded by self-interest, and had protested against injustice. The mother becomes aware that death was the sentence reserved for every one of them, for all those who had rejected a society of spineless, opportunistic, time-serving corrupt people, masquerading as artists, writers, and intellectuals. The men who rejected the Parties of Establishment were killed in a ruthless manner and to kill these faithless men, one did not need any special sanction from the court of law or the courts of justice.

Brati was killed because he had come to place such absolute faith in the cult of faithlessness. Brati had decided for himself that freedom could not come from the path the society and the state followed. He did not remain content with writing slogans on the wall; he had to commit himself to the slogans and this was his offence.

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His firm conviction in the right cause, his courage and his selflessness, his exemplary integrity and his irresistible passion, led to his death.

Anindya and the Grim Facet of the Society

At times, the mother feels guilty and wonders whether her hungry clinging love was indirectly responsible for his death as Brati had stayed on in Calcutta on that fateful day only to avoid hurting her. Mahasweta explores a grim facet of the society where people like Anindya exist. He is, in fact, responsible for the deaths of Brati and his friends. Money, jobs, power did not mean a thing to Brati, but these were the temptations which seduced those who had joined them only to betray them.

Moral Rationale of Sujata

Sujata can find a moral rationale for her son's revolt only when she can piece together a part of her son's life she had never known. Unaware in her situation of life of the politics of economic deprivation and exploitation, the more she can see in Brati's revolt is the articulation of the silent revolt she has carried within herself against her corrupt, respectable husband, her other children and their spouses and friends. She feels sorry for her dead son and she feels the loss very poignantly. In a sense, she can find in his death a fulfillment she had yearned for and never dared to claim for herself.

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One day in the life of Sujata is spent in ‘discovering’ Brati for the first time, in a series of encounter with people beyond her circuit of experience; it is spent in forging a connection with Brati, or rather with what he strove for and died for.

Brati’s Death - A Moment of Self-Discovery

Brati’s death is a moment of self-discovery for the mother. She journeys into the past to look back into her personal life too – her daily humiliation as a woman and her silent, determined struggle for self-autonomy and freedom which ironically gathers momentum from her son’s death.

For the first time, she realizes that all her life she has had a shadowy existence and she has been very subservient, silent and faithful. Her husband Dibyanath and his mother constituted the centre of attention in the home. Sujata held on unquestioningly to all these values, comfort, security and all that went with them. Whenever Sujata was expecting a child, her mother-in-law would leave the house to go and live with her sister. Even Dibyanath never accompanied her when it was delivery time. He had not allowed Sujata the most common rights that a woman possessed. His mother held the reins and he never understood that one could honour one’s mother without humiliating one’s wife.

A Male Chauvinist Husband

Sujata’s husband’s ethos was that his wife should be under his feet and his mother held aloft. He was a male chauvinist and thought that as an Indian wife,

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Sujata's primary duty was to love, respect, and obey her husband and he was not required to do anything to win his wife's respect, love and loyalty. He used to say, "I am the Boss in this house. What I say goes – thousands of times" (43). Sujata was aware that her husband flirted with women, but she did not possess sufficient courage to interrogate him. When her husband had financial problems, she was advised to take up a job and later on when his condition improved she was asked to give up her job. Even Brati said that "father used you like a doormat" (81). Initially, she took injustices lying down and did not have the courage to protest.

Transformation from Passive to an Independent Woman

The novel traces her transformation from a passive to an independent woman. Her husband always complained that she wanted to be independent and did not like to share the responsibilities of running the household or bringing up children. Refusing to leave her job was Sujata's second act of rebellion. Her first act of rebellion was when Brati was two and she refused to be the mother for the fifth time. She rebels for the third time after Brati's death when she shouts at her husband,

For thirty-two years, I never asked you where you spent your evenings, or who accompanied you on your tours for the last ten years or why you paid the house rent for your ex-typist. You are never to ask me a thing. Never. (94)

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Her son's death makes her discover that she is not all that submissive and meek now. Her husband's accusation that she is responsible for Brati's death accelerates the process of her recognition of her ideological moorings. She now feels relieved of the burden of guilt she has all along been bearing.

Do Not Remain Silent Sufferers

The novel ends with Sujata breaking down at her daughter's engagement party, passionately exhorting the audience not to be silent sufferers, but respond actively in the face of social reality. She lashes out at the police and the brutally complacent and ignorant people of the richer, or rather, upper middle class that have lately come into being. She says:

Why don't you SPEAK? Speak, for heaven's sake, speak, speak, speak! How long will you endure it in silence? Speak!...

Let it tear down the happiness of every one cooped up in his own happy happiness.(80) Sujata's voice comes out as a universal protest against the heartless society in which we all live. From silent suffering and a sense of imprisoned guilt within, Sujata moves in the direction of issuing a clarion call to women in society to awake and arise or be forever fallen (81).

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The novel is an insightful exploration of the complex relationship between the personal and political. It focuses on an individual's independent realization and 'the awakening of an apolitical mother' and is a journey of discovery for the protagonist.

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Overcoming Mental Inhibition through Experiential Learning Strategies

Krishnan Namputhiri. M.R., Ph.D. Candidate

Prof. J. Sundarsingh, Ph.D.

Introduction

In spite of its troubled journey in India during the last four centuries, English language has retained its distinctiveness and uniqueness in India. Besides, during this lengthy sojourn in India, English has shaped the communicative capability of Indian minds and in turn it has been influenced by the Indianness of society in India. At present the evolving status of English as a leading global language further strengthens the position of English in India.

In his *English as a Global Language* David Crystal states:

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“Indeed, if there is one predictable consequence of a language becoming a global language, it is that nobody owns it any more. Or rather, everyone who has learned it now owns it – ‘has a share in it’ might be more accurate – and has the right to use it in the way they want” (2003:2&3).

Crystal also says that some countries use English as second language “because it is seen as a complement to a person’s mother tongue or ‘first language’ (2003:4). Joshua A. Fishman in his “Sociology of English as an Additional Language”, categorically puts forth the following:

“The growth of English speaking “false foreigners” in various parts of the non-English mother-tongue world (e.g. West Africa, East Africa, India, Puerto Rico) is an indication that a non-native variety of English may succeed not only in stabilizing itself cross-generationally (i.e., in nativizing itself), but also in becoming a mother tongue in certain speech networks.... Steps have been taken to make sure that English does not intrude upon the domains of local ideology, literature, history and citizenship” (Kachru, ed., 2001:20&21).

However English has not been used effectively in the formal context by L₂ learners. It is mainly due to the mental inhibition which affects acquisition process both in the school and college levels. In the present study it is found that the students struggle with the inferiority complex and due to that they are not able to communicate well. Various approaches and methods are put forth by many scholars and linguists to make the classroom teaching of English student-centric and contextually oriented. Among the teaching methods, experiential learning method, proposed in the present paper, is considered productive. This method particularly helps students to overcome mental inhibition.

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Experiential Learning Method (ELM)

Having accepted “mental inhibition” as a serious ‘communication barrier’, I make an attempt in this paper to introduce English Language Lab with a specific teaching module to overcome the same inhibition. The focus is to enable a learner at the college level to effectively bring out his or her understanding of a topic without any mental inhibition and assert himself or herself as a ‘creative person’. Experiential learning method (ELM) based on the ‘Experiential Language Learning theory’ formulated by David Kolb using the ‘learning cycle’ is applied to meet the objective of helping the students to overcome mental inhibition and learn the skills comfortably. Kolb considers ‘learning as a process of creating knowledge.’ (p.38)

To know more about this learning, human knowledge should be explored to find out the types and the methods through which knowledge was acquired. Knowledge creation happens, whether small or big, in all spheres. Interaction between ‘social’ and ‘personal’ knowledge creates knowledge. Social knowledge is the ‘the civilized objective accumulation’ of the learners’ cultural experience. Personal knowledge is the collection of each individual learner’s ‘subjective’ experience. Thus knowledge is created by the close interaction between the above objective and subjective experiences in a ‘process called learning’

Kolb connects experiential learning to a level that can create a situation where ‘everyone is a winner’ or ‘can make winning and losing irrelevant’. Kolb turns a bit spiritual and says that each learner should be aware of his self and existence and integrate ‘value, facts, meaning and relevance’. And also fully remembering and acknowledging his past taking ‘choiceful responsibility of the future’; only then he can experience the ‘dialectic conflict necessary for learning experience.’

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Four Cycles

Kolb presents an experiential learning cycle and his model theory has a four-dimensional cycle. In this four-dimensional cycle, learners, a) 'have some form of concrete experience, b) reflective observation of this experience through which one has gone through, c) 'abstract conceptualization d) 'actively experiment with application of these concepts', creating new concrete experiences through doing the cycle repeatedly. The final products of this learning method are: convergent knowledge, divergent knowledge, accommodative and assimilative knowledge. Kolb calls apprehension, comprehension, extension and intention ideas, and their various combinations as styles of learning.

Application of the ELM

A sound mind produces sound communication. One of the very common factors which make a learner mentally inhibited in the classroom is being conscious of the audience and the fear of exposing oneself ineffective. This 'inhibition' can be overcome if the Teacher allows freedom for the learners to think and process their learning in their own learning style. As Kolb suggested the learning has to happen with regular reflection of familiar experiences. The activities proposed in the research enabled the learners to use ELM more effectively. The students are given the tasks based on their own experience which in turn made them involve more closely in doing the tasks. Thus ELM has become effective in the L₂ classroom.

Psychological Inhibition

A child learns his language in his desperation to express himself. Communicative compulsion creates a ceaseless longing within a child to learn his language through 'trial and error method'. Similar environment can

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be created for learning a second language. It is possible only through ELM-enabled tasks. Psychologically ‘inhibition’ means conscious exclusion of unacceptable thoughts or desires. Physiologically ‘inhibition’ means the process whereby nerves can retard or prevent the functioning of organ or part. In other words ‘inhibition’ can be termed as learning disorder wherein a learner fears failure in public. Since it is impossible to make the learner forget the environment, it is imperative to provide learning privacy by bringing in a familiar environment. In such a case, experiencing and reflecting on the experience for learning can be easily implemented in the English Language Lab or classroom.

Communication and Monitoring System

To make the learning process fruitful, it is necessary to create the following levels of communication and monitoring system:

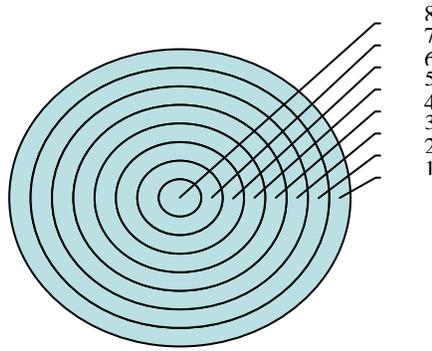
1. Teacher as Guide
2. Creating English environment
3. Focusing on Creative Ability
4. Student as Teacher
5. Student as Student
6. Self – Evaluation
7. Mutual Evaluation
8. Student Performance Monitoring

The following is the diagrammatic representation of the levels of learning and monitoring system.

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The diagram focuses on the monitoring system of the learning process. Teacher, as Guide stands at the boundary of the learning process, guiding and not directing. The middle part of the learning process is governed by the learner himself, and close by the language acquisition remains the ‘self evaluation’ and ‘mutual evaluation’.

A Three-level Learning Process

Through ELM it is possible to impart language skills, if it is done in a systematic way. It allows learner to learn in their own style with little inhibition. With the above structure as monitoring system, the researcher has proposed a three-level learning process which he experimented successfully with his students at the undergraduate level. A batch of thirty students was taken for a 100-minute session. Students were introduced to familiar topics for discussion and shown pictures for observation. All the three levels were taken up with group activity as the first, pair activity as the second, and individual activity as the third.

Level I: Group Activity: (Total Time required : 30 minutes)

A batch of 30 students is divided into 6 groups with 5 students in each group. Any one of the interesting topics is given to each group and is allotted 10 – minute time for preparation. All the levels of monitoring system are adopted. Each group is allotted 5-

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minute time for presentation and they are asked to speak through the microphone which they find comfortable.

Level II: Pair Activity: (Total Time required: 30 minutes)

All the 30 students are divided into pairs and given the topics or pictures. They are allotted 5-minute preparation time and their presentations are recorded. All the levels of monitoring system are adopted. Each pair is allotted 2-minute presentation time.

Level III: Individual Activity: (Total Time Required: 30 Minutes)

In this activity everyone is asked to speak on the topic given to them through the microphone while all the others listen to the speaker through the headphones. No preparation time is allowed. This method enables the listener to better his/her presentation when his/her turn comes for presentation.

The entire proceeding was recorded and while one group or pair or individual was sharing the information, the others had been allowed to listen to their presentation through headphones. This method enabled the students to better their own presentation in the light of the presentation of others and a remarkable improvement was noticed in overcoming the mental inhibition. The same process was repeated in the next 100-minute session for effectively overcoming inhibitions. The mental inhibitions like lack of reasoning, lack of emotional freedom, cultural blocks, intellectual reservations and academic indifference were identified and corrective measures were taken in the classroom itself. The concept of using one's own experience for learning and communicating enabled the learners to achieve the required competency level. By implementing around 10 tasks according to the learners' various experience level, the researcher could assess and find out that the ELM strategy showed good result.

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Sample situations

1. What is your ambition in life? Can you share your ambition with others in the group and arrive at a common ambition, which may develop your society?
2. What kind of job prospects you will be expecting once you take up a post? Is it possible to determine ideal job prospects?
3. “Women prove smarter than men”. Have you experienced this in your personal life? If you come across such a situation, how will you react?
4. Do you want to be independent or dependent? Tell the truth.
5. “Young mind does not like to be instructed”. Do you agree with this or not?

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A Study of Infrastructure Facilities of Primary Education of the Bodos in Kokrajhar District of Assam

Kusum Brahma, M.A.



Abstract

Primary education appears to be a basic foundation of social, political, education and economic development of a country. It is primary education that empowers an individual to become self-

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reliant and enables them ultimately to participate in the process of national development. Many studies also highlight that countries which have made proper provision for primary education are far ahead of those of inadequate provision. Infrastructure facilities are also another basic provision of primary education. Providing sound and adequate infrastructure facilities can contribute a lot to the qualitative improvement of primary education as well as participation of students.

The present paper focuses on the infrastructure facilities of primary education of the Bodos in Kokrajhar district in respect to housing facilities, types of school building, number of rooms, types of furniture, etc., provided in the schools.

Introduction

Primary education is the basic foundation of all higher education. In this stage, an individual first learns to read, write and do mathematical calculation. We can expect the future progress of our country only from a well-planned and implemented primary education. At this stage child's cultural, emotional, ethical, intellectual, moral, physical, social and spiritual development also takes place. Primary education empowers the individual to become self-reliant and enables them to participate in the process of national development. It develops the human efficiency and competency and contributes to the overall economic growth and development. Primary education raises the productivity and earning potential of a population and improves the quality of lives (World Bank, 1993, Barrow 1991). It is the indicator directly associated with economic development and indirectly with poverty alleviation and population growth.

Widespread illiteracy among people has hindered their access to information. Without basic literacy, it is much more difficult to promote better understanding of our changing social scenario. The knowledge of primary education can produce a literate and numerate population who can deal more or less satisfactorily with their problems encountered in daily life. Primary education serves as a basis on which a society is to be restructured and further education planned. It can bring a positive effect on the productive capacity of a society. Recent research by Bridesall and Londono (1998) confirms that there is a high correlation between country levels of

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income inequality and inequality in the distribution of literacy. Thus, primary education advances human capability, economic opportunity and political participation. It fructifies multiple dimensions of freedom from fear and want, it generates self-confidence, and supports orientation towards future, offers coping mechanism in terms of crisis (Amartya Sen). Without a quantitative and adequate development of primary education, the process of development of the country will come to a grinding halt.

In India, primary education has been given special importance in Article 45 of the Directive Principles of state policy of the Indian constitution. It clearly states, “The state shall endeavour to provide within a period of ten years from the commencement of the constitution for free and compulsory education for all children until they complete the age of fourteen years.” Special emphasis is given for providing free and compulsory education for all with concrete plan of action. To achieve the goal of UEE, government has undertaken many programmes ranging from Operation Black Board to SSA. In spite of the various mentioned act and policy it has not been able to achieve the target.

So, it is an urgent need to conduct an in-depth study of the present existing primary education system of India to ensure ‘education for all’. However, in-depth study of such a large number of populations is not possible. Therefore, the present study try to locate only the area of Kokrajhar District which has only 9, 05, 764 population.

Rationale of the Study

Article 350-A of the constitution laid down that mother tongue should be used as the medium of instruction at primary level. The 1986 National Policy of Education also gives emphasis to implement this obligation as far as possible and accordingly some of the modern Indian languages are already being used as medium of instruction.

So, it seems that the present study would be very significant as the Bodo language has been introduced as the medium of instruction in primary level since 1963 and it is also included in the 8th schedule of the Constitution of India through and amendment by the Parliament. Now Bodo is also the associate official language of Assam. No significant work has been carried out on any aspects of education of the Bodos. That is why studies such as the present paper will be

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significant as these will throw light on the existing infrastructure facilities of primary education of the Bodos.



Title of the Study

Keeping in view of the rationale of the study, the title given to the present study is ‘A Study of Infrastructure Facilities of Primary Education of the Bodos in Kokrajhar District of Assam’.

Objectives of the Study

The present study is undertaken with the following objective –

To Study the infrastructural facilities of Primary education of the Bodos in Kokrajhar District in terms of:

- Housing facilities
- Types of school building
- Number of rooms breaking for different purposes
- Types of furniture provided in the schools
- Playground facilities
- Drinking water and electricity facilities
- Teaching aids facilities
- Hostel facilities

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- Provision of physical training facilities
- Toilet facilities
- Provision of Health check-up facilities
- Mid-day Meal facilities

Delimitation

The present study is delimited to Primary Education (from class I to IV) of the Bodos in Kokrajhar District.

Methodology

This is descriptive research. This method describes and interprets what exists at present.

Population

The population of the present study comprises of all the provincialized lower primary schools (class 1-4) of Kokrajhar district.

Sample

There are 1084 Lower Primary schools in total in Kokrajhar District (DISE-2006-07, MIS, SSA, Dhubri, Assam). As per the objectives of the present study, an equal proportion of 10% sample (total 108) schools representing each medium from five (5) educational blocks have been selected by using stratified random sampling technique. Then the selected schools are categorised into three as Bodo medium, Non-Bodo medium and Mixed medium of instruction schools. All the Assamese medium schools, Bengali medium schools and Hindi medium schools are included under the category of Non-Bodo medium schools and all the schools having two media of instruction are included under the category of Mixed medium schools. Out of 108 selected schools, 40 are from Bodo medium, 55 schools are from Non-Bodo medium and 13 are from mixed medium schools. Each and every Head teacher of selected sample schools was the respondent of the present study.

Tools

For collection or gathering of data standardised open and closed form of school information schedule is used. Here information of infrastructural facilities was collected from the Headmasters of the selected sample schools.

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Interpretation of Data

Qualitative and quantitative analysis and interpretation of data are made on the basis of the nature of the data and this is presented below.



As per the objective number one, i.e., housing facilities

Housing facilities play a significant role in maintaining quality education. A school having its own building helps in carrying out each and every activity of the school.

Table -1: Housing Facilities

Medium	No. Of Schools	Own Buildings		Rented Buildings		Donated		Rent Free		Others	
		score	%	Score	%	score	%	score	%	score	%
Bodo	40	40	100	-	-	-	-	-	-	-	-
Non-Bodo	55	55	100	-	-	-	-	-	-	-	-
Mixed	13	13	100	-	-	-	-	-	-	-	-

Source: Field Study

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It is found from the above table that all the selected Bodo, Non-Bodo and Mixed Medium schools are run in their own building.

As per the objective number two, i.e., type of building

Types of school building have a great impact on education.

Table – 2 Types of School Building

Medium	No. Of Schools	Open Air		Pucca		Kuchcha		Semi-Pucca		Mixed		Thatched Huts	
		Score	%	Score	%	Score	%	score	%	score	%	Score	%
Bodo	40	-	-	32	80	2	5	3	7.5	3	7.5	-	-
Non-Bodo	55	-	-	52	94.55	-	-	3	5.54	-	-	-	-
Mixed	13	-	-	9	69.23	-	-	-	-	4	30.77	-	-

Source: Field Study

The above table shows that out of the 40 Bodo medium primary schools, 80% schools have *pucca* type of building, 5% schools have *kuchcha* type of building, and 7.5% schools have semi-pucca and mixed type. There is no thatched hut school in Bodo medium. Among Non-Bodo medium schools 94.55% schools have *pucca* type, 5.54% schools have semi-pucca type of building. There is no school which has kuchcha, mixed and thatched huts in its compound. On the other hand, out of 13 mixed medium schools, 69.23% schools have *pucca* building and the rest 30.77% schools have mixed type building. When compared to Non-Bodo medium schools, Bodo medium schools have less number of *pucca* buildings.

As per objective number three, i.e., number of rooms used for different purposes

Availability of rooms increases the attention and motivation of the students and improves their academic performance.

Table – 3: Number of Rooms used for different Purposes

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Medium	Head Masters Room		Teachers' Common Room		Total Class Room		Others		Total no. of rooms	
	Score	%	Score	%	Score	%	Score	%	Score	%
↓ ↓										
Bodo	-	-	4	4.76	78	92.86	2	2.38	84	100
Non-Bodo	2	1.09	10	5.43	162	88.04	10	5.43	184	100
Mixed	1	1.75	4	7.02	47	82.46	5	8.77	57	100

Source: Field Study

Regarding the number of rooms, it is found that the selected Bodo medium schools have a total of 84 rooms. Of which 4.76% is used as Teacher's Common room, 92.86% is used as classrooms, 2.38% is used for other purposes. In selected Non-Bodo medium schools, there is a total of 184 rooms of which 1.09% is used as Head Master's room, 5.43% is used for Teacher's Common room, 88.04% is used for Class room and remaining 5.43% is used for other purposes. In selected Mixed medium schools, there is a total of 57 rooms, of which 1.75% is used as Head Master's room, 7.02% is used as Teacher's Common room, 82.46% is used as Classrooms and 8.77% is used for other purposes. Compared to other two medium schools, i.e., Non-Bodo and Mixed medium, Bodo medium schools are run without Head Master's room, and in schools there is no teacher's common room. But, Bodo medium schools have maximum number of classrooms.

As per objective number four, i.e., type of furniture provided in the schools:

Table -4 Types of furniture facilities provided in the Schools

Medium	No. of Schools	Wooden Bench & Chair		Steel Bench & Chair		Individual Desk & Chair		No Furniture	
		Score	%	score	%	score	%	score	%
Bodo	40	36	90	2	5	1	2.5	1	2.5
Non-Bodo	55	54	98.18	3	5.45	-	-	1	1.8

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									2
Mixed	13	13	100	2	15.38	-	-	-	-

Source: Field Study

Regarding furniture, out of 40 Bodo medium schools, 90% of schools is having wooden benches and chairs, 5% of schools has steel benches and chairs, 2.5% of schools has individual desks and chairs. Only a few schools have no furniture at all. In Non-Bodo medium schools, out of 55 selected schools, 98.18% of schools has wooden benches and chairs, 5.45% of schools has steel benches and chairs, 1.82% of schools has no furniture. In mixed medium schools, out of 13 selected schools, all the schools have wooden benches and chairs and a few schools have both wooden benches and chair and steel benches and chairs. The data reveals that Bodo Medium schools have less number of wooden benches and chairs and steel benches and chairs than the Non-Bodo and Mixed Medium schools. One school each of Bodo and Non-Bodo medium schools was running without furniture facilities.

As per objective number five, i.e., in respect to playground facilities

Sports and games play vital roles in education but these cannot be possible to organised without sufficient playground facilities.

Table -5: Schools Having Playground

Medium	Number of Schools	Schools Having Playground Facilities	
↓	↓	Score	%
Bodo	40	29	72.5
Non-Bodo	55	47	85.45
Mixed	13	9	69.23

Source: Field Study

The above table indicates that out of the 40 Bodo medium schools, 72.5% of schools has playground facilities. Out of 55 Non–Bodo medium schools, 85.45% of schools has playground facilities .On the other hand, out of 13 selected sample schools, 69.23% of schools does not have

playground facilities. Both Bodo and Mixed medium schools have less playground facilities to organise various activities than the Non-Bodo medium schools.

As per objective number seven, i.e., availability of teaching aids

Table – 7: Teaching aids

Medium	Total Score	Blackboard		Chalk / Duster		Chart/ Globe		Radio	
		Score	%	Score	%	Score	%	Score	%
Bodo	40	40	100	22	55	21	52.5	23	57.5
Non-Bodo	55	55	100	55	100	49	89.09	45	81.82
Mixed	13	13	100	13	100	13	100	8	61.54

Source: Field Study

The above analysis reveals that out of the selected Bodo medium schools all the schools have blackboards, 55% of schools has chalk/duster, 52.5% of schools has chart/globe and 57.5% of schools has Radio facility. In Non-Bodo medium schools also all the schools have blackboard and chalk/duster, 89.09% of schools has chart/globe and 81.82 % of schools has Radio facility. In Mixed medium schools all the selected schools have blackboards, chalk/duster, chart/globe facilities and only 61.54% of schools has Radio facilities. Although all the medium schools have blackboard facilities in schools, in Bodo medium schools chalk/Duster, chart/globe aids are less in number. Not all schools also have radio facility.

As per objective number eight, i.e., hostel facilities

Hostel facilities also form another important part of school infrastructure.

Table -8: Schools Having Hostel Facilities

Medium	Number of Schools	Schools Having Hostel Facilities	
		Score	%
↓	↓		
Bodo	40	00	0
Non-Bodo	55	00	0

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Mixed	13	00	0
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Source: Field Study

Table -8 shows that all the three medium schools, i.e., Bodo, Non-Bodo and Mixed medium schools have no hostel facilities.

As per the objective number ten, i.e., toilet facilities

Proper toilet facilities help to increase the school attendance of the students and help in maintaining hygiene. These inculcate clean habits in students, ensure the health of individuals and protect people from several diseases.

Table -10: Toilet Facilities

Medium	No of Schools	Schools Having Toilet Facilities	
		Score	%
Bodo	40	40	100
Non-Bodo	55	55	100
Mixed	13	13	100

Source: Field Study

Table -8 shows that all the Bodo, Non-Bodo and Mixed medium schools have toilet facilities.

As per objective number nine, i.e., physical training facilities

Table -9 Schools having Physical Training Facilities

Medium	No of Schools	Schools Providing Physical Training Facilities			
		Yes		No	
↓	↓	Score	%	score	%
Bodo	40	24	60	16	40
Non-Bodo	55	25	45.45	30	54.55
Mixed	13	5	38.46	8	61.54

Source: Field Study

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The above table exposes that out of the selected Bodo Medium schools, 60% of schools provides physical training to students whereas 40% of schools does not have physical training facilities. In Non-Bodo Medium schools, 45.45% of schools provides physical training whereas 54.55 % does not provide physical training facilities to students. On the other hand in Mixed medium schools 38.46 % of schools provides physical training whereas 61.54 % schools does not provide physical training to students. Regarding physical training facilities, Bodo medium schools are much more advanced than other two medium schools.

As per objective number 9, i.e., Games and Sports and other facilities:

Table- 9 Schools Providing Games and Sports and other Facilities

Medium	No of Schools	Outdoor	Indoor	Social Service	Scout & Guide	Picnic	None
Bodo	40	37.5	17.5	-	2.5	10	32.5
Non-Bodo	55	32.73	14.55	1.82	-	7.27	43.64
Mixed	13	61.54	15.38	-	7.69	15.38	-

Source: Field Study

In Bodo medium schools 37.5% of schools has outdoor game facilities, 17.5% of schools has indoor game facilities, 2.5% of schools has Scout and Guide facilities, 10% of schools has picnic facilities and 32.5% of schools has no other facility. In Non-Bodo medium schools 32.73% of schools has outdoor game facilities, 14.55% of schools has indoor game facilities, 1.82% of schools has social service facilities, 7.27 % of schools has picnic facilities. 43.64 % of schools has none of the above mentioned facilities. In Mixed medium schools 61.54% of schools has outdoor game facilities, 15.38 % of schools has indoor game facilities, 7.69% of schools has Scout & Guide facilities, 15.38% of schools has picnic facilities. It is found that more than half the number of selected Bodo medium schools has almost no outdoor games, indoor games, Scout & Guide and picnic facilities.

As per objective number twelve, i.e., Provision of Mid-day Meal facilities

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Improved Mid-day Meal programmes could have a major impact on school attendance, child nutrition and social equity. The following table shows the provision of Mid-day facilities of the selected sample schools.

Table – 12: Provision of Mid-day meal facilities

Medium	No of Schools	School provides mid-day meal to students			
		Yes		No	
		Score	%	Score	%
Bodo	40	40	100	0	0
Non-Bodo	55	53	96.36	2	3.64
Mixed	13	12	92.31	01	7.69

Source: Field Study

It is found that all the selected Bodo Medium schools have provision for Mid-day Meal to students. In Non-Bodo Medium schools 96.36% of schools has the provision of Mid-day Meal to students whereas 3.64% of schools does not have the provision of Mid-day Meal to students. On the other hand, in Mixed medium schools 92.31% of schools has the provision of Mid-day Meal to students and 7.69% of schools does not have the provision of Mid-day Meal to students. The data proved that Bodo medium schools following the rules of the government in providing Mid-day meal much better than the Non-Bodo and Mixed medium schools.

As per objective number thirteen, i.e., water and electric facilities

Table -6: Schools Having Water and Electric Facilities:

Medium	No of Schools	Water Facilities						Electricity		None	
		TubeWell/Well		Tap		Filtered		Score	%	score	%
		Score	%	score	%	score	%				
Bodo	40	20	50	5	12.5	5	12.5	-	-	10	25
Non-Bodo	55	43	78.18	2	3.64	6	10.91	2	3.64	2	3.64

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Mixed	13	9	69.23	1	7.69	1	7.69	1	7.69	1	7.69
											69

Source: Field Study

Above table shows that out of 40 selected schools, 50% schools have tubewell/ well facilities for water, 12.5% of schools has tap and filtered facilities for water, 12.5% of schools do not have water and electricity facilities. In Non-Bodo medium schools 78.18% of schools has tube well/well facilities for water, 3.64% of schools has tap water facilities, 10.91% of schools have filtered facilities, 3.64% schools have electricity facilities and 3.64% schools has no water and electricity facilities. In Mixed medium schools 69.23% of schools has tube well/well facilities for water, 7.69% of schools has tap water, filtered facilities and electricity facilities. 7.69% of schools has no water and electricity facilities. As compared to other medium schools none of the Bodo medium schools has electricity facility.

Major Findings and Conclusion

1. It is found that all the selected primary schools of Bodo, Non-Bodo and Mixed medium schools of Kokrajhar district are run in their own buildings without paying rent to others.
2. Although most of the schools of selected Bodo, Non-Bodo and Mixed medium schools function in *pucca* buildings, a few schools are still run in non-*pucca* buildings (i.e., *kuchcha*, semi-*pucca*, or mixed).
3. More than 90% of Bodo, Non-Bodo and Mixed medium schools are provided wooden benches and chairs but a few Bodo & Non-Bodo medium schools still do not have any furniture facility for seating.
4. Out of the selected Bodo (40), Non-Bodo (55) and Mixed (13) medium schools 72.5% of Bodo, 85.45% of Non-Bodo and 69.23% of Mixed medium schools have playground facilities in their respective schools.
5. All the medium of schools have blackboard facilities in their own respective schools but especially in Bodo medium schools there are some school which do not have chalk/duster, chart/globe and radio facilities.

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6. All the Bodo, Non-Bodo and Mixed medium schools have no hostel facilities.
7. It is found that all the selected schools of Bodo, Non-Bodo and Mixed Medium schools have common toilet facilities.
8. 60% of selected Bodo Medium schools have more physical training facilities compared to 45.45% of Non-Bodo and 38.46% of Mixed Medium selected sample schools.
9. It is found that there is less provision for social service and Scout & Guide in Bodo medium, Non-Bodo and Mixed medium schools. Only a few schools have such facilities. There are still many schools where no games and sports and other related co-curricular activities are organised.
10. Regarding the provision of Mid-day meal facilities, all selected Bodo medium schools provide Mid-day meal which is not the case with the other two medium schools, i.e., Non-Bodo and Mixed medium.
11. It is found that 25% of schools of Bodo medium are run without water and electricity facilities whereas only 3.64% and 7.69% of schools of Non-Bodo and Mixed medium schools respectively have no water and electricity facilities.
12. It is found that there is no provision for health check-up facilities in Bodo, Non-Bodo and Mixed medium schools.

School infrastructure is one of the basic components to provide quality education to students. This is already demanded in the 1986 National Policy of Education. As per the recommendation of N.P.E. 1986, Operation Blackboard Scheme (OBB) was launched in India to provide minimum basic requirements for quality education at the school level. Many significant basic changes have been observed after the implementation of the scheme, but in Kokrajhar district, there is still need to work for the improvement of school infrastructure (especially in school buildings, classrooms, furniture, water and electricity facilities, health facilities). More emphasis should be given to the specific study of each medium schools. Equal facilities for equal development are very necessary for overall improvement of primary education.

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**A Comparative Study of the Evaluation System of Semester System
and Annual System**

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Abstract

The study intends to analyze and compare in detail the evaluation system of the semester system and annual system. The evaluation system of both the systems is explicitly different with little similarities. There is a general view which prevails in public that the semester system keeps a constant check on the learning and comprehension of the students whereas in annual system, evaluation is based on cramming the material only.

The purpose of this study is to analyse which system is the better one from the point of view of evaluation and what improvements can we recommend in these systems.

The major instrument of study is the questionnaire. Two different kinds of questionnaires were designed, for Faculty Zone and for Student Zone. The method of taking interviews was also

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adopted, especially for the members of the Faculty Zone. For this research, Semester system of three universities, namely, those of National University of Modern Languages, International Islamic University and Quaid-e-Azam University and three colleges which follow annual system, namely, Asghar Mall Boys College, F.G. College for Women, and Sir Syed College for Boys were selected. Through random sampling 10 Students and 10 Teachers from each university and college were selected for the study and questionnaires were distributed among them.

1. Introduction

Evaluation is the process of judging or measuring the worth or appreciating it in the paradigms of that particular discipline.

1.1. Importance

Evaluation is concerned with making judgments about things. When we act as evaluators we attribute 'value' or 'worth' to behaviors, objects or processes. To be more effective however, evaluation requires that judgment be based on appropriate and relevant data. In every institution or classroom, abundant data exists, using which evaluations can be made. It is indispensable for all educators to employ such data when making their judgments particularly about students. Thus, an effective evaluation of a curriculum or a student's performance will be based upon appropriate data and will reflect what that data reveal.

All educators need to regard evaluation as both a necessary and integral function of their teaching. For curriculum developers, there is no option to providing guidelines and directions for the evaluations in the production of a final curriculum document. There are several powerful reasons for educators to become more familiar with and employ evaluation in purposeful, useful ways in educational institutions. Evaluation is essential to provide feedback to learners.

Researches have emphasized the valuable contribution evaluation makes to student learning through the feedback of student's performance. This means more than providing tests and examination scores, project results and so forth. It involves useful information that addresses student's strengths and weaknesses and how to improve their performance. Evaluation is Language in India www.languageinindia.com

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essential in determining how well learners have achieved the stated objectives. Evaluation provides information to improve curriculum. Evaluation data collected during a unit of study will provide the basis for changes that will make the curriculum more effective in meeting the objectives. Students in personal decision-making employ information from evaluation. In particular future courses of action concerning studies, employment, a career and the like are based on evaluative data given as feedback to students from their participation in a curriculum. Evaluation provides useful information to curriculum developers to clarify the stated objectives. Feedback obtained through evaluative procedures indicate how realistic and effective the original objectives were and where changes are required. Those interested in how well students perform, i.e., parents, students, educational systems, employers, government planners, and so forth need constructive information on student's performance to enhance their decision making effectiveness. Curriculum developers should ensure that provision is made for evaluative information that is meaningful and valid. Evaluation helps the teachers to understand to which extent the students are assimilating the course. It helps in measuring the effectiveness of the whole process of education. The process also helps in measuring the effectiveness of the teaching methods and the instructional material. It encourages students to do more and the teachers to work on refining the process of learning.

1.2. Research Objective

The main objective of the research is to find out the efficacy of the evaluation systems of annual system and semester system as these systems are prevalent in universities and colleges of Pakistan.

1.3. Procedure of Evaluation in Semester and Annual System

The process of evaluation is different in both the Semester and Annual Systems. In Annual System the process of evaluation of the students is based upon the exam taken at the end of the year and students are promoted to the next year. In this kind of system usually lecture method is followed. Evaluation is only based on written papers.

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On the other hand in Semester System the academic year is broken down into usually two equal parts of six months each. Exams are taken at the end of each semester. The process of evaluation in Semester System does not rely completely on the written exam taken at the end of each semester. Presentations assignments and assessment tests/Quiz are a part of final evaluation. In Punjab only Punjab University follows Annual System. Several colleges are affiliated with it whereas, all other universities follow Semester System.

1.4. Research Methodology

The major instrument of study is the questionnaire. Basically two different kinds of questionnaires were designed, for Faculty Zone and for Student Zone. The method of taking interviews was also in practice, especially for the members of the Faculty Zone. For the research three universities of Semester system i.e., National University of Modern languages, International Islamic University and Quaid-e-azam University and three colleges following annual system i.e Asghar Mall Boys College. F.G College for Women and Sir Syed College for Boys are selected. Through random sampling 10 Students and 10 Teachers from each university and colleges are selected for the study and questionnaires were distributed among them.

Literature Review

Mamta Agarwal (2004) suggests “Evaluation is universally accepted as an integral part of teaching and learning. It is one of the basic components of any curriculum and plays a pivotal role in determining what learners learn.”. Evaluation also plays a central role in deciding what teachers teach and how they teach; Reardon et al. (1994),

According to Charles D. Hopkins and Richard L. Antes (1992), “Evaluation is the continuous inspection of all available information concerning the students, teachers ,educational program and the teacher learning process to determine the degree of change in students and from valid judgment about the students and the effectiveness of the program”

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The basic purpose of the evaluation is to formulate a judgment based on the results obtained. It helps in determining the degree to which goals are being achieved. With the help of the process of evaluation the level of understanding can be assessed and future educational objectives are set based on students' needs. For the students, evaluation provides feedback regarding strengths and weaknesses. It increases the level of motivation. Improvement of the teacher's teaching and the student's learning through judgment using available information is the ultimate function of the process of evaluation.

Evaluation is an aid to clarification of the significant objectives of education as well as process for determining the extent to which students are developing in desired ways. Because an evaluation can take any number of directions, the first steps in its design aim to define its purpose and scope—to establish what questions it will and will not address. “To ensure the evaluation's credibility and relevance to its intended users, the evaluator must develop a clear understanding of the program's purpose and goals and develop researchable evaluation questions that are feasible, appropriate to the program and that address the intended users' needs” (Nancy.R.Kingsbury,2012)

Basically there are two types of evaluation:

- Formative Evaluation:

It is used to provide information for curriculum review, identification of the effectiveness of the instructional process and assessment of the teaching process during period of instruction.

- Summative Evaluation:

Its process are assigned of marks, certification of skills, knowledge, abilities, feedback to students and comparisons of outcome of different groups. This process is required where judgments are made concerning the terminal and semi terminal nature of the evaluation. (Robert cannon and David Newble, 2000)

As with all evaluation, the process of evaluating learning consist of two major elements

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Gathering information about learning, and then making judgment based upon that information.

- a. The first and major source of information about student's learning will be the results of your program of student assessment, the examination and the test results, assignments, projects, dissertations, field reports, clinical notes and other projects and observation of student learning.
- b. The second way of evaluating learning is through well designed and administered evaluations of teaching. Apart from formal questionnaire surveys, evaluation by brainstorming an issue with the students or by using the evaluation discussion method can be a very powerful learning experience for all involved.
- c. The third way of evaluating learning is classroom assessment techniques. (Richard Arends, 1998).

According to Leslie W. Trowbridge and Rodger W. Bybee (1997),

“A test is only a sample of what is being learned, other means of evaluation should also play a major part in determining the achievement and development of the students multiple talents”

The student is best able to determine what he is learning and how he feels about it. Teachers should ask students to judge their own achievements. One way to do so is to give the students a list of objectives for a unit or course and have them judge what they know or feel about the course before and after studying the material. This method has been shown to be a valid measuring technique and gives a better indication of the actual growth than does the typical test.

Gronlund (1991) provided several principles that should guide teachers as they design an assessment and evaluation system and create their own test. According to Gronlund teachers should construct their test so that it measures clearly the learning objectives they have communicated to students. The test should be in harmony with teacher's instructional objectives.

Most lessons and units of instruction contain a variety of objectives ranging from the recall of factual information to the understanding, analysis and creative application of specific principles.

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A good test does not focus entirely on one type of objective such as factual recall; rather it should measure a representative sample of the teacher's learning objectives. Remember however, that measuring more complex skills such as higher-level reasoning is more costly and time consuming. A good test items that are most appropriate for a particular objective. e.g. Some type of test items, such as matching or fill in the blanks are better for measuring recall of specific information, other such as essay items, are better for tapping higher-level thinking process and skills.

A test is considered reliable when it produces dependable, consistent scores for persons who take it more than once over a period of time. A test is said to be valid when it measures what it claims to measure. Teacher made test that are clearly written and minimizing guessing are generally more reliable than ambiguous ones that encourage guessing. Likewise, tests, containing a fairly large number of items are generally more reliable than those with just a few items. A test that is well planned and covers the full range of objectives and topics is most likely to ensure validity.

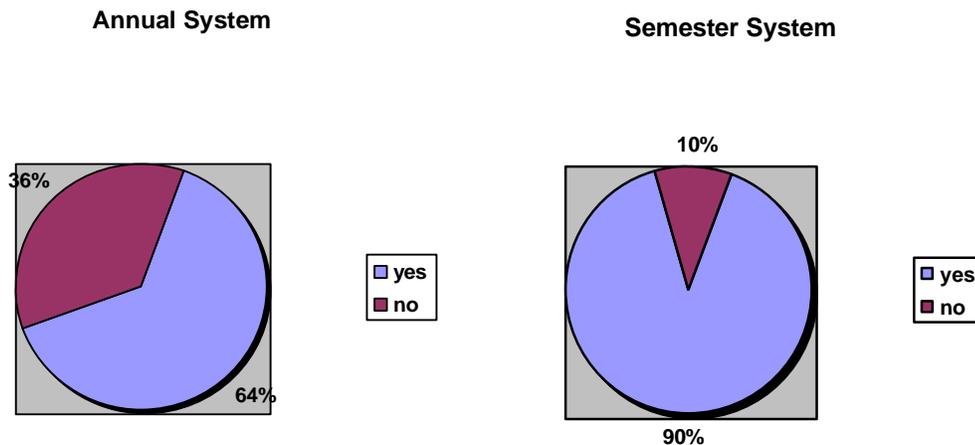
Teaching students the necessary skills to take the test also increases the validity because, in some instances, students may know the information being tested but simply cannot read or interpret the questions. No single test, however, can give a completely accurate picture of what student knows or can do. Thus, there is always the need to interpret the results with caution and to rely on multiple sources of assessment information before making final judgment about student's work.

This final principle is meant to remind teachers that although test may be used primarily to diagnose or assess student achievement, they can also be learning experiences for students. Going over test results, for instance, provides teachers with opportunities to re-teach important information students may missed. Debate and discussion over 'right' answers can stimulate further study about a topic. Effective teachers integrate their testing process into their instructional programme of the purpose of guiding and enhancing student learning.

Currently there appears to be a nationwide demand for more accountability for schools and teachers as well as a call for higher standards. There is a general belief that the emphasis over the past decade of focusing on minimal competencies measured with multiple choice, standardized tests has raised the basic skill level of the students slightly but has failed to promote and measure higher level thinking and problem solving many educators, parents and test the measurement experts believe that this situation can be corrected by introducing new approaches to student assessment such as the use of performance tasks, authentic assessment, student portfolios, and grading for team work. Assessment and evaluation are among the most important aspects of teacher's work and carry heavy responsibilities. Teachers must not only do this part of their job well but also must make sure that no harm comes to the vulnerable students. (Richard .I. Arends, 1998)

Data Analysis of the Faculty Zone

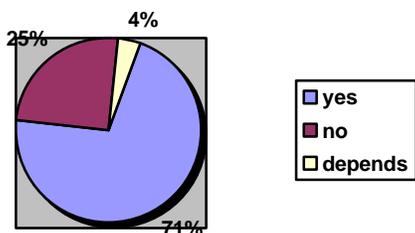
Q#1-Own Plan of Evaluation



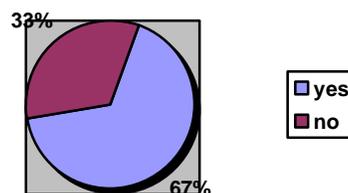
The teachers of the Semester System has the privilege over the teachers of the Annual System because they get the opportunity to devise their own plan of evaluation whereas, the teachers of Annual System has to follow the set pattern devised by the university.

Q#2-Stress due to work load

Annual System



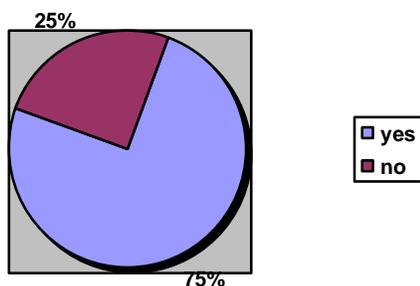
Semester System



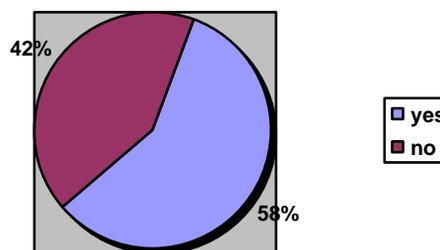
Faculty members of both the systems were of the view that there is more stress due to workload on the students of Semester System because they have to show continuous output through out the year. This result shows that Semester System demands more hard work on the student's as well as on the teacher's part.

Q#3-Continuous feed back of student's performance.

Annual System



Semester System



Majority of the faculty members agreed that Semester System provides continuous feed

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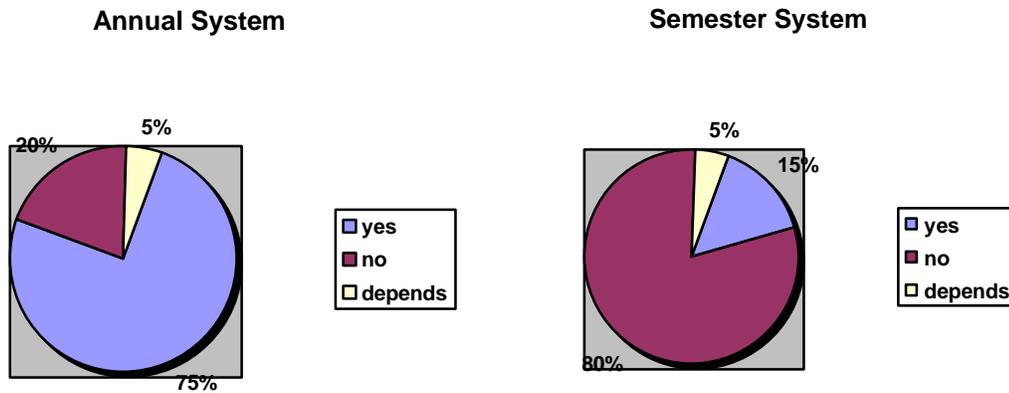
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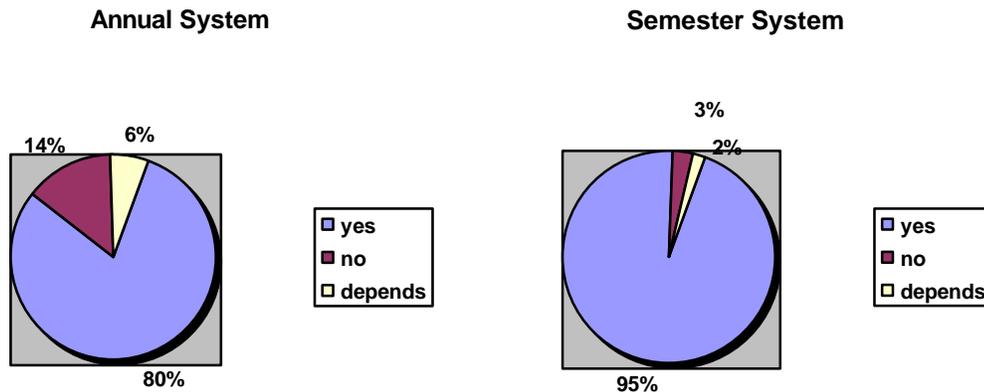
back of student's performance.

Q#4-Similar grading system



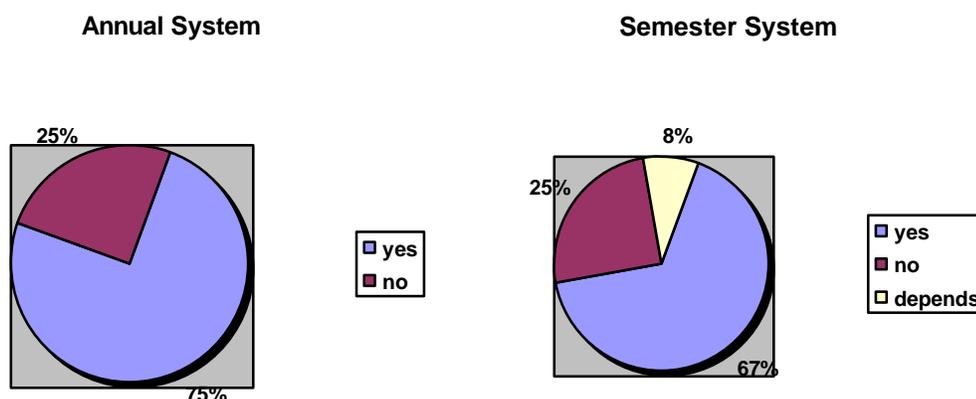
Majority of the faculty members think that good grading system helps in motivating the students to perform better therefore grading system in both Annual and Semester System should be the same, whereas rest of the faculty members think that it is impossible to have similar grading system in both. It means that the evaluation system of the Semester System is much more appreciated.

Q#5-Motivation due to grading system



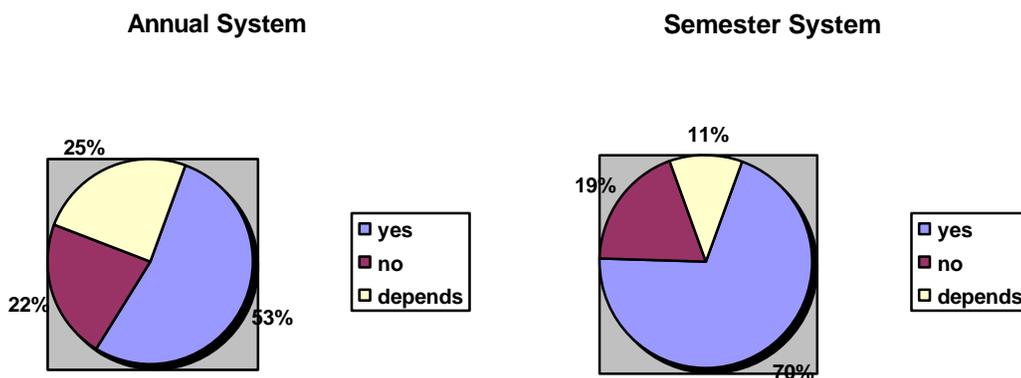
Faculty members of both Annual and Semester System agreed that students get motivated due to the encouraging grading system of the Semester System.

Q#6-Validity of the modes of evaluation



Most of the faculty members think that in Semester System the method of evaluation are more valid because of the continuous feedback of student’s performance, whereas others were of the opinion that the methods of evaluation in both the systems are equally valid.

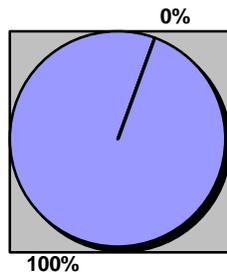
Q#7-Modes of Evaluation improves the standard of Education



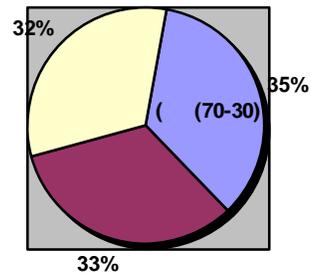
The percentages show that modes of evaluation of Semester System help a lot in improving the standard of education as compared to Annual System.

Q#8-Percentage of the subjective and objective type questions in the paper

Annual System



Semester System

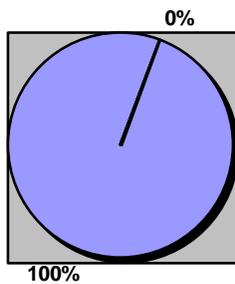


yes
no

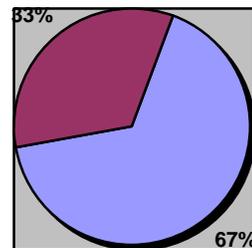
In Annual System, the paper is 100% subjective whereas in Semester System a fixed portion of the process of evaluation is devoted to objective type questions, which gives the idea of students understanding in a better way. It may also depend on the subject being taught.

Q#9-Criteria for paper setup

Annual System



Semester System



yes
no

yes
no

In Annual System the teachers have the criteria for paper setup set by the university. They have to follow that set pattern, whereas in Semester System the setup varies from subject to subject.

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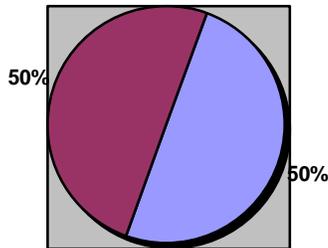
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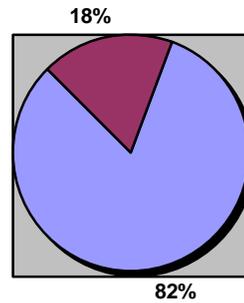
Q#10-Comprehension based questions

Annual System



yes
no

Semester System



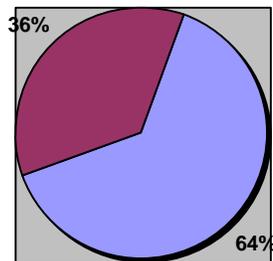
yes
no

Over all the result shows that the teachers prefer to give comprehension-based questions in the paper. In Semester System the percentage is higher because the whole system is more comprehension based and student centered. The reason for negative result is that some of the students want prepared material.

Data Analysis of the Student Zone

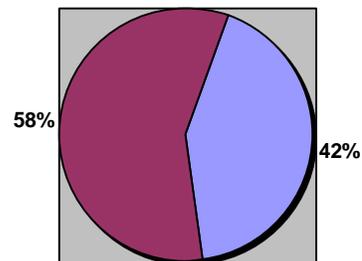
Q#1-Time period for the preparation of exams

Annual System



yes
no

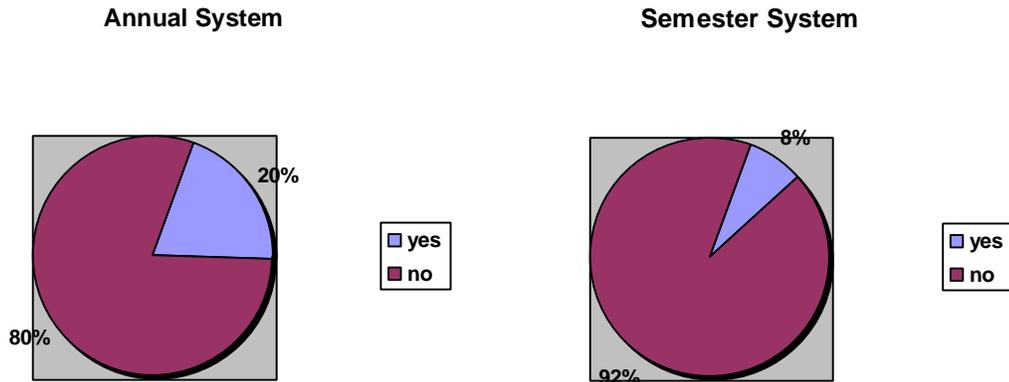
Semester System



yes
no

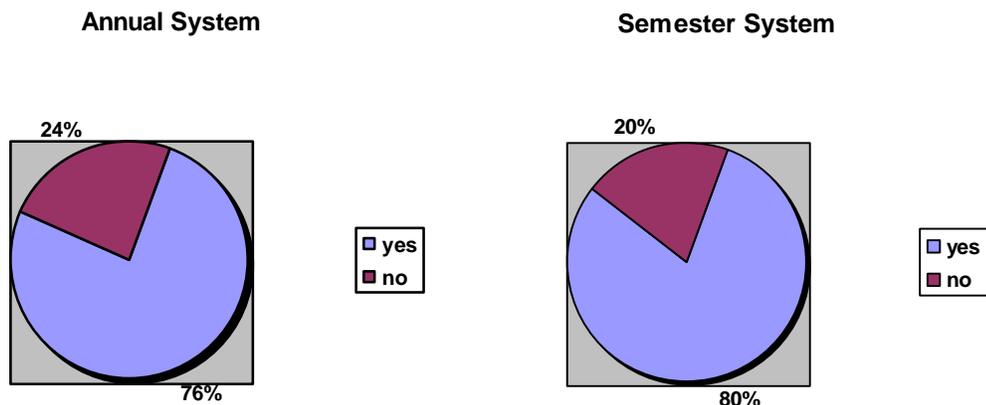
In Semester System only 42.3% students said that they are satisfied with the time period given to them for the preparation of exams, whereas in Annual System 64% shows the satisfaction of the students as far as the time period for the preparation of the exams is concerned.

Q#2-Chance to look at the marking



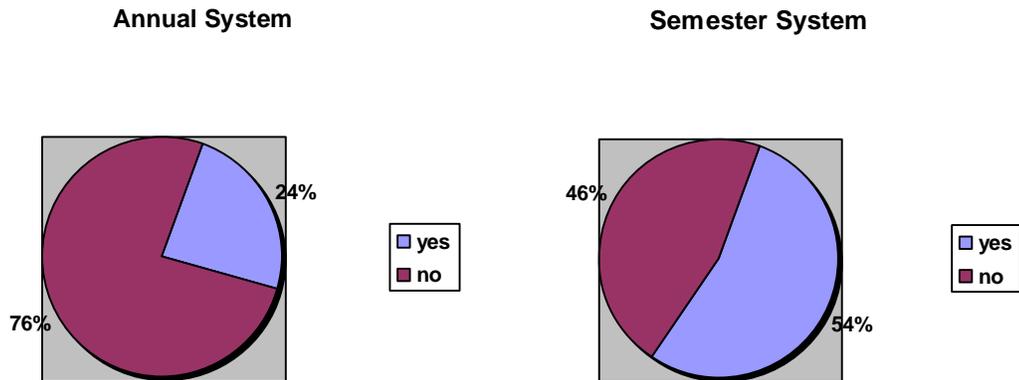
In Semester System 92.3 % students said that they don't get a chance to look at the marking, whereas in Annual System 80 % of the students said that they can't see their papers easily. They have to make special request to the university. The result shows that both the systems don't give the opportunity to the students to see their papers. However in Semester System the students get the idea of their marks in the forms of presentation and assessment test whereas in Annual System there is not even this probability.

Q#3-Comprehension based questions in the paper.



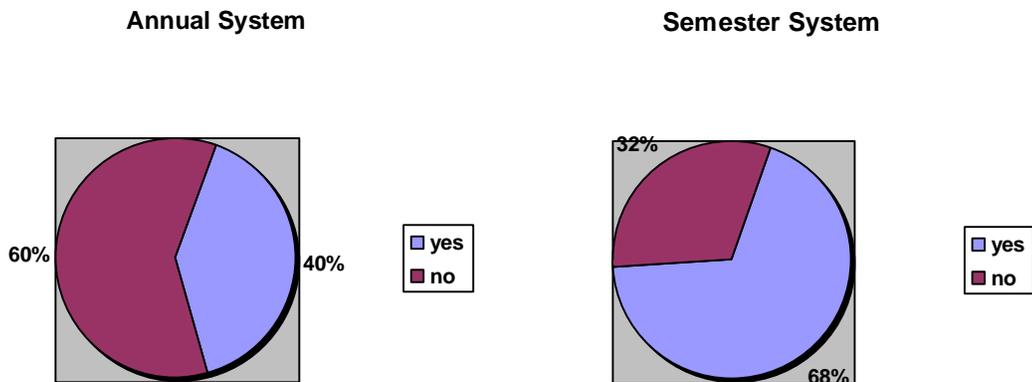
Over all the result shows that the students prefer to have comprehension-based questions in the paper. In Semester System the percentage is higher, i.e., 80.77% because the whole system is more comprehension based and student centered. The reason for negative result is that some of the students want prepared material.

Q#4-Satisfaction or motivation with grading system



It is observed that in Semester System majority was satisfied with the grading system whereas in Annual System majority is not satisfied. This shows that the Semester System provides satisfactions to the students which helps in motivating them .The reason is that in Semester System the students get more marks because of the modes of evaluation and the grading system.

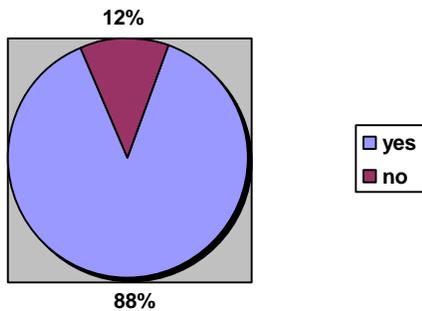
Q#5-Stress due to work load



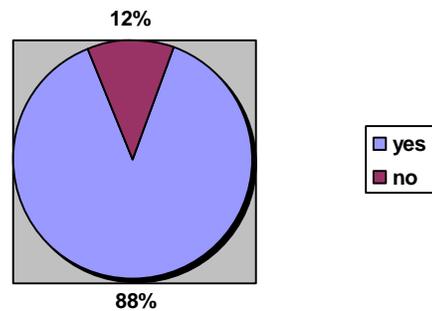
Students of the Annual System think that there is no special load on the students of Semester System. In their view the stress due to workload is equal on the students of both systems. Whereas the students of Semester System think that they are overburdened.

Q#6-Continuous feed back in Semester System

Annual System



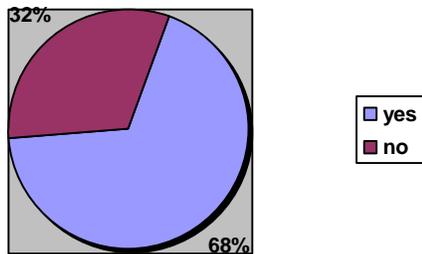
Semester System



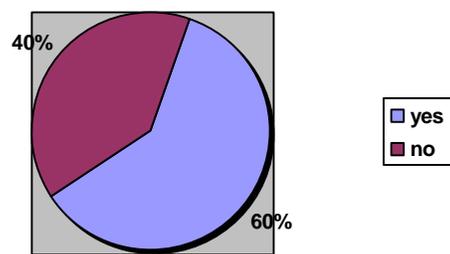
The students of both the systems were agreed upon the fact that Semester System provides continuous feedback of the students' performance, which is a plus point of the system.

Q#7-Similar grading system in both the systems

Annual System



Semester System



The majority of the students of both systems were of the view that there should be similar grading system because it helps in motivating the students as well as provides continuous feedback. Rest of the students were of the view that similar grading system is not possible because both the systems are not similar. The grading of semester system is more appreciable.

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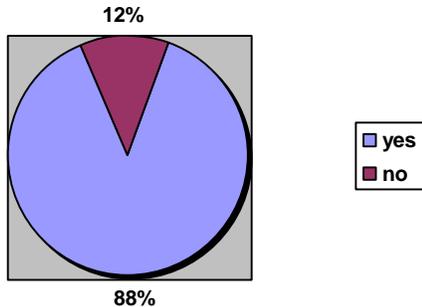
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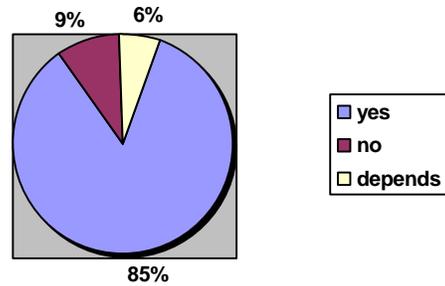
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Q#8-Validity of the Evaluation System

Annual System



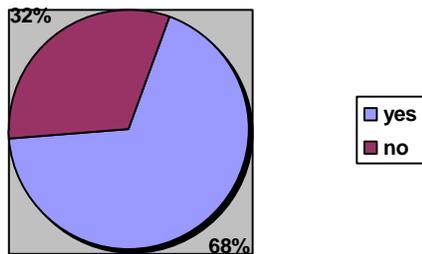
Semester System



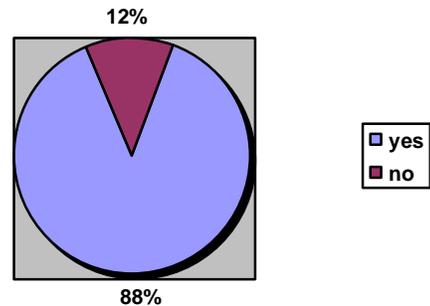
The majority of the students of both the systems agreed upon the fact that evaluation system of the semester system is more valid because of its modes and methods and better grading system.

Q#9-Modes of Evaluation improves the standard of Education

Annual System

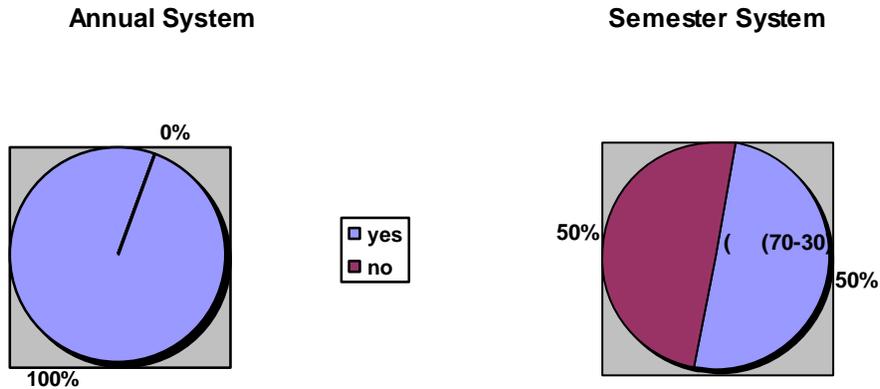


Semester System



The students were agreed upon the fact that the modes of evaluation of Semester System plays a major role in the improvement of standard of education in Semester System as compared to Annual System whereas minority was of the opinion that other factors are equally or more important.

Q#10-Percentage of the objective and subjective type questions in the paper



In Annual System the paper is 100% subjective whereas in Semester System a fixed portion of the process of evaluation is devoted to objective type questions, which gives the idea of students understanding in a better way.

Conclusions

Student Zone

- Through data analysis of student zone we came to the conclusion that Semester system has some qualities regarding evaluation which are preferred over Annual system by the students of both Semester system and Annual system.
- Both systems are satisfied with the marking /grading system of Semester system.
- Quality of continuous feedback is appreciated by the students of both the systems.
- Students of both systems agreed upon the validity of evaluation system in Semester system and agreed that such system of evaluation can improve standard of education.
- Students of both the systems are of the view that Semester system provides better opportunity to comprehend and understand

Faculty Zone

- Data analysis of faculty zone shows that the system of evaluation in Semester system is more appreciated by the faculty of both Semester and Annual systems
- Faculty of both the systems agreed upon the fact that grading/marking system of semester is better and the methods of evaluation are more valid as compared to Annual system.
- Faculty of both the systems appreciated the quality of Semester system that it not only provides continuous feedback of the students but also provides them better understanding
- It also improves standard of education.

Weakness

The only negative view from students and faculty of Annual and Semester system is that there is more stress and workload in Semester as compared to Annual System.

Recommendations

After the research it is recommended that:

1. Teachers should be given the liberty to recommend their own plan of evaluation because they are the better judges of the student's level of comprehension and mental capacity.
2. Continuous feedback from the students should be made possible to get better results.
3. Though completely similar grading system is not possible in both the systems however, Annual system should take the good qualities of the grading system of the Semester system.
4. It is observed that the modes of evaluation in Semester system are more valid as compared to Annual system and they help in improving the standard of education. So, the modes of evaluation of annual system should be reconsidered.
5. It is recommended that a particular portion of the paper in annual system should be fixed for the objective type questions to assure the better results.
6. It should be made sure that the paper consists of comprehension-based questions rather than memory based questions to improve the level of students learning. Evaluation

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process should be aimed at judging the critical faculty rather than the cramming ability of the students.

7. The process of paper setting process should be transparent and valid.
8. A proper standard should be maintained in paper setting and paper checking.
9. It is recommended that the results of both the systems should be available on net for the convenience of the students.
10. A sufficient weightage should be given to research work in every field because it gives a lot of opportunity of practical experience and exposure, which helps in the process of learning.
11. Students should be allowed to see their papers so that they can improve their flaws and mistakes.

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Appendix A
Questionnaire for the Faculty Members

Sr.no	Questions	Yes	No	Depends
Q#1	Do you get a chance to device your own plan of evaluation?			
Q#2	Do you think that there is more stress on the students of Semester system as compared to Annual system?			
Q#3	Do you think that Semester system provides continuous feed back of the student's performance as compared to Annual system?			
Q#4	Do you think that there should be similar grading system in both Semester system as well as Annual system?			
Q#5	Do you think that the grading system helps in motivating the students to perform better in Semester system as compared to Annual system?			
Q#6	Do you think that the methods of evaluation are more valid in Semester system as compared to Annual system?			
Q#7	Do you think that the modes of evaluation improve the standard of education in Semester system as compared to Annual system?			
Q#8	What is the percentage of subjective and objective type questions in the paper? (70—30),(80—20),(60---40), (50—50)			
Q#9	Do you have any criteria for paper set up?			
Q#10	Do you prefer to have comprehension based questions I your paper?			

Appendix B

Questionnaire for the Students

Sr.no	Questions	Yes	No	Depends
Q#1	Do you get enough time for the preparation of exams?			
Q#2	Do you get a chance to look at the marking of your papers?			
Q#3	Does your paper consist of comprehension-based questions?			
Q#4	Are you satisfied with grading/marketing system of the university/college?			
Q#5	Do you think that there is more stress on the students of semester system as compare to annual system?			
Q#6	Do you think that semester system helps in providing continuous feedback of the student's performance?			
Q#7	Do you think that there should be similar grading system in both semester system and annual system?			
Q#8	Do you think that the methods of evaluation are more valid in semester system as compare to annual system?			
Q#9	Do you think that the modes of evaluation improve the standard of education in semester system as compare to annual system?			
Q#10	What is the percentage of subjective and objective questions in your paper?(70—30) , (80—20), (60—40), (50—50)			

Appendix C

Data collected from the Faculty Zone

Sr. no	<u>Questions</u>	<u>Annual system</u>			<u>Semester system</u>		
		Yes	No	D	Yes	No	D
Q#1	Own plan of evaluation	5%	95%		90%	10%	
Q#2	Stress due to work load	71%	25%	4%	66.6%	33.3%	
Q#3	Continuous feed back of the student's performance	75%	25%		58.3%	41.6%	
Q#4	Similar grading system	75%	20%	5%	15%	80%	5%
Q#5	Motivation due to grading system	80%	14%	6%	95%	3%	2%
Q#6	Validity of the modes of evaluation in semester system as compared to biannual system	75%	25%		67%	25%	8%
Q#7	Improvement of the standard of education due to the modes of evaluation	53%	22%	25%	70%	19%	11%
Q#8	Percentage of subjective and objective type questions.	100% subj			35% (60-40) 33% (70-30)		32%
Q#9	Criteria for paper set up.	100%			67%	33%	
Q#10	Comprehension based questions	50%	50%		82%	18%	

Appendix D

Data collected from the Student Zone

Sr. no	<u>Questions</u>	<u>Annual system</u>			<u>Semester system</u>		
		<i>Yes</i>	<i>No</i>	<i>D</i>	<i>Yes</i>	<i>No</i>	<i>D</i>
Q#1	Time period for preparation of exams	64%	36%		42.3 %	57.7 %	
Q#2	Chance to look at the marking	20%	80%		7.69 %	92.3 %	
Q#3	Comprehension based questions	76%	24%		80%	20%	
Q#4	Satisfaction or motivation with grading system	24%	76%		53.8 %	46.2 %	
Q#5	Stress due to work lode	40%	60%		68.3 %	31.7 %	
Q#6	Continuous feed back in semester system	88%	12%		88.4 %	11.6 %	
Q#7	Similar grading system in both the system	68%	32%		60%	40%	
Q#8	Validity of the evaluation system	88%	12%		85%	9.4%	6%
Q#9	Mode of evaluation improves the standard of education	68%	32%		88%	12%	
Q#10	Percentage of objective and subjective type questions	100% subj			50% (70-30) 40% (60-40)		10%

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Foreign Language Learning Anxiety among Iranian EFL learners Along Gender and Different Proficiency Levels

Naemeh Nahavandi, Ph.D. Candidate & Jayakaran Mukundan, Ph.D.

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Abstract

The aim of the present study was to understand the level of anxiety of the Iranian EFL students towards English as a foreign language. To do so, all 548 students (elementary to advanced learners) studying in Jihad-e-Daneshgahi institute of Tabriz, Iran were selected based on random sampling. Foreign Language Classroom Anxiety Scale FLCAS (Horwitz, Horwitz, & Cope, 1986) was used to measure anxiety with four scales of communication apprehension, test anxiety, fear of negative evaluation, and fear of English classes. Furthermore there was an effort to see whether anxiety domains differed across different first languages, proficiency levels and gender. The results of the study indicated that students in the present study experienced anxiety in all four scales on the higher side of the range. Contrary to the findings of other studies, communication anxiety was found to be the predominant anxiety component in the students, as Language in India www.languageinindia.com

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compared to other three scales. In addition, gender and first language didn't affect their anxiety significantly. However, level of proficiency affected their anxiety in all four domains significantly. The study concluded with some pedagogical implications.

Keywords: Foreign Language, Anxiety, FLCAS, Iranian EFL learners

1. Introduction

Early studies on Second Language Acquisition emphasized the role of cognitive variables like intelligence, language aptitude, and learning styles on learning a second or foreign language. However, after Gardner and Lambert studies (1972) on attitudes and motivation in second language learning, second language researchers began considering emotional or affective factors and how these factors facilitate or hinder language acquisition (Horwitz, Tallon, & Luo, 2010). For many researchers learning a second language is a process in which affective and personality factors play a significant role. For Brown (2007) affective and personality factors are important psychological factors to investigate in order to understand the process of language learning and in improving language-teaching designs. Among other affective variables, anxiety has stimulated special interest in the field of second language acquisition and learning over the past decades (Argaman & Abu-Rabia, 2002; Bailey, 1983; Chen, 2002; Gregersen & Horwitz, 2002; Horwitz, Horwitz, & Cope, 1986; Liu, 2006; Na, 2007; Yan & Horwitz, 2008). Since 1970s, several instruments have been developed to measure anxiety, such as Gardner's (1985) French Class Anxiety Scale and French Use Anxiety Scale, and Horwitz et al.'s (1986) Foreign Language Classroom Anxiety Scale.

For Morris, Davis and Hutchings (1981) anxiety comprises worry and emotionality. They claim that worry refers to cognitive aspects such as negative expectations and cognitive concerns about oneself, the present situation and probable consequences. Emotionality refers to one's understanding of the physiological-affective elements of the anxiety experience, meaning, signs of "automatic arousal and unpleasant feeling states such as nervousness and tension" (Morris,

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et.al 1981, p. 541). Spielberger (1983) defines anxiety as the “subjective feeling of tension, apprehension, nervousness, and worry associated with an arousal of the automatic nervous system” (p. 1). For some researchers (Skehan, 1989; Young, 1991) language anxiety can arise from lots of different sources. For Young (1991) the possible sources of anxiety are “personal and interpersonal anxieties; learner beliefs about language learning; instructor beliefs about language teaching; instructor-learner interactions; classroom procedures; and language testing” (p. 427). Many studies have suggested that anxiety occurs due to poor learning abilities indicating that anxiety is an outcome (Yan & Horwitz, 2008). For Lucas, et.al (2011) the language classroom can be an anxiety-causing situation to some learners, because it includes constant evaluation of the learners’ performance and competence. They continue to claim that other anxiety provoking factors can be “difficulty coping in a mainstream English classroom, lack of teacher engagement and limited cognitive skills in English” (p. 95).

Due to the contradictory research results dealing with foreign language anxiety in the Iranian context, the need for more research in this area seems to be emphasized. Thus, the present study might provide more information offering insights about the effect of anxiety for EFL learners in Iran. Furthermore, the findings of the present study may contribute to educators’ understanding of the issue of anxiety among Iranian EFL learners.

2. Overview of the Study

2.1 Anxiety and Its Different Categories

Some researchers have grouped anxiety into two groups of facilitating or debilitating one. The first type of anxiety motivates learners in adopting an approach attitude, willing to confront the new learning task. On the other hand, debilitating anxiety motivates learners in assuming an avoidance attitude, tending to escape from the learning task (Scovel, 1978). The issue of task difficulty affects learners to develop a facilitating or a debilitating anxiety (Chan & Wu, 2004). For McIntyre (1995) foreign language anxiety could be facilitating only when a given task is relatively simple. However, when the task is too difficult, anxiety impairs performance. In

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addition to task difficulty, factors like “teachers’ attitude and evaluation, teacher-student interactions in class, parents’ expectation, classmates’ attitude, and students’ own achievement are the potential sources of students’ foreign language anxiety” (Chan & Wu, 2004, p. 290). Some other researchers have grouped anxiety into three groups of trait anxiety, state anxiety and situation-specific anxiety. For Scovel (1978) trait anxiety is defined as a permanent predisposition to be anxious. State anxiety on the other hand, is a social type of anxiety which occurs under certain conditions like when the learners are able to perceive situations as being threatening, they are said to have state anxiety. The last category is situation-specific anxiety which is caused by specific situation or event like public speaking, examinations or recitations.

2.2 Foreign Language Anxiety

For Horwitz et al. (1986) foreign language anxiety is a “distinct complex of self-perceptions, beliefs, feelings, and behaviors related to classroom language learning arising from the uniqueness of the language learning process” (p. 128). They continue to claim that almost one-third of students who learn a foreign language experience some type of anxiety. For Young (1994) three sources of foreign language anxiety is associated with the learner, the teacher and the institution. He claims that learner anxiety includes low self-esteem, low level of ability, communication apprehension, lack of group membership and attitudes and beliefs about language learning. For some researchers (Aida 1994; Samimy 1994), considering teacher factors, judgmental teaching attitude and a harsh manner of teaching are related to anxieties with the teacher. Finally, institutional anxiety can be related to the list of classroom activities that learners perceive as anxiety-provoking. They can include role playing; speaking in front of the class; giving oral presentations and report; and a writing task on the board (Young, 1990; Palacios, 1998, Lucas, et.al, 2011).

2.3 Defining Scales of Anxiety

Horwitz et. al (1986) groups anxiety into three scales of communication apprehension, test anxiety, and fear of negative evaluation. They define communication apprehension as a type of shyness characterized by fear or anxiety about real or anticipated communication with other people. They claim that for anxious students speaking in the foreign language is the most anxiety-producing experience. In this situation, the learner is placed in a position of communicating something without sufficient knowledge of the language to do this task. Therefore, the learner experiences anxiety due to fear of “losing oneself” in the target culture.

According to (Horwitz et al., 1986), “Test anxiety refers to a type of performance anxiety, stemming from a fear of failure” (p.127). Sarason (1984) defines test anxiety as “the tendency to view with alarm the consequences of inadequate performance in an evaluative situation.” Students have test anxiety when they have poor performance in the previous tests. These students develop a negative attitude towards tests and have irrational perceptions in evaluative situations.

Watson, & Friend (1969) define fear of negative evaluation as ‘apprehension about others’ evaluations, distress over their negative evaluations, and the expectation that others would evaluate oneself negatively”. For MacIntyre and Gardner (1991) fear of negative evaluation is related to communication apprehension. Aida (1994) claims that students with fear of negative evaluation might sit passively in the classroom, and withdraw themselves from activities of their classrooms which increase their improvement of language skills. She claims that in extreme cases, students might cut their classes in order to avoid anxiety situations which will cause them to be left behind.

2.4 Studies on Anxiety among EFL Learners

In the literature, the relationship between anxiety and language learning has been investigated by lots of researchers and it has been found that anxiety can have an adverse effect on the

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performance of people speaking English as a foreign language (Chen & Lee, 2011, Stroud & Wee, 2006). Some studies related to the scope of the present study have been brought here. In one study, Chan & Wu (2004) studied language anxiety of 601 EFL elementary school students in Taiwan. The results of their study showed that the anxiety tendency of EFL elementary students was quite obvious. In another study, Liu (2006) studied the language anxiety of 100 EFL students with three different proficiency levels. The results of his study showed that students with advanced English proficiency tended to have less anxiety. In a more recent study Chakrabarti and Sengupta (2012) studied language anxiety of 146 Indian learners. The results of their study showed that anxiety of most of the students was high and test anxiety was found to be the predominating anxiety component in the students.

In the Iranian context Rezazadeh and Tavakoli (2009) studied the relationship among gender, academic achievement, years of study, and levels of test anxiety among Iranian EFL learners. The participants were one hundred and ten undergraduate students from Isfahan University. Results showed that female students had a higher level of test anxiety. Furthermore, the results indicated that there was no meaningful relationship between test anxiety and years of study. Furthermore, Sadighi, Sahragard & Jafari's (2009) study results on 80 Iranian EFL learners' showed no relation between anxiety and years of university study. In addition, the results showed that females were more anxious than males. In a more recent study, Mesri (2012) studied anxiety of 52 EFL university level students. The results of his study indicated that anxiety level of these students was quite high and there was a significant relationship between FLCA and females. As it is mentioned in all these studies language anxiety of all these EFL participants was on the higher range. However, as the number of participants is low in the studies related to the Iranian context, and as research showed contradictory results concerning gender and level of proficiency, further research about this issue in Iran seemed necessary.

2.5 Current Status of English in Iran

Due to today's growing science and technology all over the world, learning English language has been given much more importance compared to past years, and it is not an exception in the Iranian context. Nevertheless, teaching English in Iran has been a difficult task for both EFL students and teachers because of lack of resources and little contact with the target language outside the classroom Compared to other EFL learners in other contexts. (Sadeghi, 2005). There are very few English programs broadcast on TV or radio. Of course, due to advancements in technology and the more frequent use of the internet, satellite, and rapid growth of private language institutes in Iran, the opportunities for English language learning have greatly improved (Talebinezhad & Aliakbari, 2002).

In addition, the increasing number of language institutes can confirm the increase in value and importance that is given to the English language in Iran. In the Iranian curriculum, English language is one of the compulsory subjects. English language is a foreign language in Iran and students are officially taught English from the first year of the guidance school. Therefore, Iranian students have to study English for nearly seven years. Three years in Guidance school, three years in Secondary school and one year in Pre-University level. In addition, those students who study non-English Majors in universities study English in a maximum of 6 credits. They study 3 credits of general English instruction and 3 credits of ESP in which the focus is on their field, related English texts and related terminology.

However, after learning English for almost 7 years in school and one more year at university, Iranian EFL learners' are not proficient enough in learning the English language. The education they receive neither enables the students to attain full competence in using the English language nor helps them to interact with confidence (Nahavandi & Mukundan, in press). Therefore, it is essential to find out what impedes students' ability in learning English as a foreign language even after seven years of education in schools. FLA has been claimed to be one of the problems in learning foreign languages. Thus, it seems necessary to identify the sources of students'

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foreign language anxiety and anxiety-provoking situations. In addition, it is also essential to identify related issues like lowering foreign language anxiety and teachers' awareness of foreign language anxiety. The above mentioned issues can increase our understanding of foreign language anxiety. When teachers become aware of students' foreign language anxiety and ways of lowering the anxiety, the aim of reducing foreign language anxiety might be effectively reached.

3. Methodology

3.1 The Study

In general the present descriptive study tried to understand anxiety level of Iranian EFL students towards English as a foreign language. Furthermore there was an effort to see whether anxiety domains differed across different first languages, proficiency levels and gender. Based on the objectives of the study the following research questions were raised:

1. Do Iranian EFL learners feel anxiety in their English classes?
2. Is there any significant relationship between Iranian EFL learners' first language and their Foreign Language Anxiety?
3. Are there any significant relationships between Iranian EFL learners' proficiency levels (elementary to Advanced levels) and their Foreign Language Anxiety?
4. Is there any significant relationship between Iranian EFL learners' gender and their Foreign Language Anxiety?

3.2 Research Design

This descriptive study was conducted on 548 EFL students (elementary to advanced learners) studying in Jihad-e-Daneshgahi institute of Tabriz, Iran. Foreign Language Classroom Anxiety Scale FLCAS (Horwitz, Horwitz, & Cope, 1986) measuring anxiety with four domains of

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communication apprehension, test anxiety, fear of negative evaluation, and fear of English classes was administered to the selected respondents. Because of the scale's success on construct validity and reliability, FLCAS has been extensively used by number of researchers in exploring learners' foreign language anxiety (Aida, 1994; Chang, 1999; Ganschow & Sparks, 1996; Liao, 1999).

3.3 Participants

The participants were all 548 EFL students (elementary to advanced learners) studying in Jahad-e-Daneshgahi institute of Tabriz, Iran during the academic year of 2012. Foreign Language Classroom Anxiety Scale FLCAS (Horwitz, Horwitz, & Cope, 1986) together with a demographical questionnaire was administered to the selected respondents in all 52 English classes in the institute. The age range of participants was from 10-43 with the average mean of 18.56. From 548 questionnaires only 522 complete questionnaires were fed into SPSS for analysis and other 26 distorted and incomplete questionnaires were discarded. The following table summarizes the participants' characteristics.

3.3.1 Demographic Background of the Participants

As can be seen in table 1-3, from whole 522 respondents 275 were male and 247 were female students. Considering their first language only 54 students' first language was Persian and the rest 468 were Turkish. Furthermore, 210 students were elementary learners, 100 students were studying in pre-intermediate level, 102 in intermediate level and 110 were advanced students.

Table 1: Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	275	52.7	52.7	52.7

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	Female	247	47.3	47.3	100.0
	Total	522	100.0	100.0	

Table 2: proficiency level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Elementary	210	40.2	40.2	40.2
	pre-intermediate	100	19.2	19.2	59.4
	Intermediate	102	19.5	19.5	78.9
	Advanced	110	21.1	21.1	100.0
	Total	522	100.0	100.0	

Table 3: First Language

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Persian	54	10.3	10.3	10.3
	Turkish	468	89.7	89.7	100.0
	Total	522	100.0	100.0	

3.4 Instrumentation

In order to collect the data, Horwitz, Horwitz, & Cope's (1986) 33 item FLCAS questionnaire together with a demographical questionnaire was administered to the selected respondents in all

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52 English classes in the institute. In the FLCAS, there are 33 items in a 5-point Likert Scale format ranging from 'Strongly Disagree' to 'Strongly Agree'. The theoretical range of this scale is from 33 to 165. The higher the total points, the more anxious the students are. The scale has shown high internal reliability, alpha coefficient of .93 with all items producing significant corrected item-total scale correlations (Na, 2007).

However, there are two models employed by researchers (Horwitz et al., 1986; Huang, 2008; Na, 2007) investigating foreign language classroom anxiety. Some researchers have adopted three or four domains for surveying anxiety. In the first model 33 items were constructed under three domains of communication apprehension, test anxiety, and fear of negative evaluation. In the second model, the same 33 items were reconstructed under four domains of communication apprehension, test anxiety, fear of negative evaluation, and anxiety of English classes. Anxiety of English classes, a new domain, was constructed in the four factor model compared to three factor model (Cao, 2011). However, it has been confirmed that the four domains explains foreign language classroom anxiety better with its exclusive characteristics (Cao, 2011). In the present study, FLCAS items with 4 domains were employed. Each anxiety score was gained by summing the ratings of the thirty-three items.

First, permission to distribute the questionnaire was obtained from the dean of Jahad-e-Daneshgahi institute and all 38 teachers in the institute. Respondents were informed that the information they gave would be used only for research purposes. Then the questionnaires were administered to all 52 classes. Finally, respondents were given 15 minutes to answer the questions. The researcher repeated the same procedure for all 52 classes. The researcher herself was present in data collection procedure, therefore in case of any ambiguity or problem in understanding the questionnaire items, assistance and guidance was provided by her and other teachers in the institute.

3.5 Procedure

First permission to distribute the questionnaire was obtained from the dean of Jahad-e-Daneshgahi institute and all 38 teachers in the institute (some teachers were same, meaning they had 2 or 3 English classes during that term). Then, the researcher conducted the survey once the department head approved the request. The number of students in each class ranged from 6 to 18. All 52 classes were requested to fill up the questionnaire. The researcher herself was present during data collection and collected data were tallied and subjected to parametric statistical analyses.

3.6 Method of Analysis

The students' responses to the questionnaire were analyzed in terms of descriptive and inferential statistics. First, the raw data was fed into the computer and after testing for normality parametric test was run by the Statistical Package of Social Sciences (SPSS) 20 software. The data were analyzed using ANOVA, LSD and t-test. To ensure the quality of the analysis and interpretations, consultations with statisticians were made.

4. Results of the Study

For all variables Minimum, Maximum, Mean, Std. Deviation, Variance, Skewness, and Kurtosis were calculated. As Skewness and Kurtosis were near 0/5 and sample population was large, data distribution was considered normal. Therefore parametric statistics was used. As can be seen in table 4, the age range of respondents is from 10-43 with the average mean of 18.56.

4.1 Descriptive Statistics for All Four Scales

1. Considering the first domain Communication Anxiety the average mean is 2.97 meaning that most participants' Communication Anxiety is high.

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2. Considering the second domain Fear of Negative Evaluation the average mean is 2.91 meaning that most participants' Fear of Negative Evaluation is high.

3. Considering the third domain Test Anxiety the average mean is 2.86 meaning that most participants' Test Anxiety is high.

4. Considering the fourth domain English Classroom anxiety the average mean is 2.64 meaning that most participants' English Classroom anxiety is high.

Table 4: Descriptive statistics for all four scales

	N	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewness	Kurtosis
Age	522	10	43	18.56	3.965	15.718	2.108	7.989
Communication Anxiety	522	1.38	4.50	2.9768	.65755	.432	.183	-.415
Fear of Negative Evaluation	522	1.00	5.00	2.9127	.77737	.604	.119	-.401
Test Anxiety	522	1.00	4.80	2.8644	.72625	.527	.012	-.089
English Classroom anxiety	522	1.00	4.45	2.6433	.66036	.436	.199	-.096

4.2 Comparing Male & Female Learners through Independent t-test

To compare male and female students in their anxiety levels, independent t-test is used. The results of the study in all 4 scales are as follows:

1. Mean of Communication Anxiety among males is 2.97 and among females is 2.98. As the level of significance is 0.791 which is bigger than 0.05, therefore it can be concluded that there isn't a significant difference between male and female students in Communication Anxiety.

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2. Mean of Fear of Negative Evaluation among males is 2.89 and among females is 2.93. As the level of significance is 0.565 which is bigger than 0.05, therefore it can be concluded that there isn't a significant difference between male and female students in Communication Anxiety.

3. Mean of Test Anxiety among males is 2.90 and among females is 2.83. As the level of significance is 0.252 which is bigger than 0.05, therefore it can be concluded that there isn't a significant difference between male and female students in Communication Anxiety.

4. Mean of English Classroom anxiety among males is 2.65 and among females is 2.63. As the level of significance is 0.683 which is bigger than 0.05, therefore it can be concluded that there isn't a significant difference between male and female students in Communication Anxiety.

Table 5: Male & Female Comparison

	Gender	N	Mean	Std. Deviation	Levene's Test for Equality of Variances		t-test for Equality of Means		
					F	Sig.	t	Df	Sig. (2-tailed)
Communication Anxiety	Male	275	2.9695	.63973	1.087	.298	-.265	520	.791
	Female	247	2.9848	.67805					
Fear of Negative Evaluation	Male	275	2.8941	.79015	.118	.732	-.576	520	.565
	Female	247	2.9334	.76395					
Test Anxiety	Male	275	2.8989	.69395	2.530	.112	1.147	520	.252
	Female	247	2.8259	.76017					
English Classroom anxiety	Male	275	2.6545	.68216	1.235	.267	.409	520	.683
	Female	247	2.6308	.63637					

4.3 Comparing Proficiency Level

To compare Proficiency Levels two-way ANOVA is used. To make interpretations of the study easier and to prevent repetition in using some words, elementary students are named group 1, pre-intermediate students group 2, intermediate students group 3 and advanced students group 4 respectively. The results of the study in all 4 scales are as follows:

1. Mean of Communication Anxiety in group one, group two, group three and in group four are 3.19, 2.93, 2.88 and 2.70 respectively. As the level of significance is 0/000 which is smaller than 0.05, therefore it can be concluded that there is a significant difference in Communication Anxiety among all four groups. LSD results show that Communication Anxiety in group 1 is significantly higher than other groups. In both group 2 and group 3, it is higher than group 4. However there isn't a significant difference between group 2 and group 3.

2. Mean of Fear of Negative Evaluation in group one, group two, group three and in group four are 3.19, 2.95, 2.72 and 2.53 respectively. As the level of significance is 0/000 which is smaller than 0.05, therefore it can be concluded that there is a significant difference in Fear of Negative Evaluation among all four groups. LSD results show that Fear of Negative Evaluation in group 1 is significantly higher than other groups. In group 2, it is higher than group 3 and 4. However there isn't a significant difference between group 3 and 4.

3. Mean of Test Anxiety in group one, group two, group three and group four are 3.05, 2.68, 2.89 and 2.66 respectively. As the level of significance is 0/000 which is smaller than 0.05, therefore it can be concluded that there is a significant difference in Test Anxiety among all four groups. LSD results show that Test Anxiety in group 1 is significantly higher than group 2 and 4. In group 2, it is lower than group 3, and it doesn't have a significant difference with group 4. However, in group 3 it is higher than group 4.

4. Mean of English Classroom anxiety in group one, group two, group three and group four are 2.83, 2.47, 2.66 and 2.43 respectively. As the level of significance is 0/000 which is smaller than 0.05, therefore it can be concluded that there is a significant difference in English Classroom Language in India www.languageinindia.com

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anxiety among all four groups. LSD results show that English Classroom anxiety in group 1 is significantly higher than other groups. In group 2, it is lower than group 3, and it doesn't have a significant difference with group 4. However, in group 3 it is higher than group 4.

Table 6: Results of ANOVA for Different Proficiency Levels

		N	Mean	Std. Deviation	F	Sig.
Communication Anxiety	Elementary	210	3.1905	.70448	16.137	.000
	pre-intermediate	100	2.9338	.60366		
	intermediate	102	2.8787	.53626		
	advanced	110	2.6989	.58392		
Fear of Negative Evaluation	elementary	210	3.1868	.82390	21.836	.000
	pre-intermediate	100	2.9478	.70228		
	intermediate	102	2.7222	.63795		
	advanced	110	2.5343	.66146		
Test Anxiety	elementary	210	3.0457	.74897	9.902	.000
	pre-intermediate	100	2.6840	.70162		
	intermediate	102	2.8902	.64953		
	advanced	110	2.6582	.68608		
English Classroom anxiety	elementary	210	2.8338	.73710	13.033	.000
	pre-intermediate	100	2.4664	.60835		
	intermediate	102	2.6586	.53751		
	advanced	110	2.4264	.54081		

Table 7: Post Hoc Tests (LSD) for Different Proficiency Levels

Dependent Variable	(I) proficiency level	(J) proficiency level	Mean Difference (I-J)	Std. Error	Sig.
Communication Anxiety	Elementary	pre-intermediate	.25673*	.07662	.001
		intermediate	.31180*	.07611	.000
		advanced	.49161*	.07423	.000
	pre-intermediate	intermediate	.05507	.08875	.535
		advanced	.23489*	.08714	.007
	Intermediate	advanced	.17981*	.08669	.039
Fear of Negative Evaluation	Elementary	pre-intermediate	.23899*	.08925	.008
		intermediate	.46455*	.08865	.000
		advanced	.65243*	.08646	.000
	pre-intermediate	intermediate	.22556*	.10337	.030
		advanced	.41343*	.10149	.000
	Intermediate	advanced	.18788	.10097	.063
Test Anxiety	Elementary	pre-intermediate	.36171*	.08606	.000
		intermediate	.15552	.08549	.069
		advanced	.38753*	.08337	.000
	pre-intermediate	intermediate	-.20620*	.09968	.039
		advanced	.02582	.09787	.792
	Intermediate	advanced	.23201*	.09737	.018
English Classroom anxiety	Elementary	pre-intermediate	.36740*	.07759	.000
		intermediate	.17512*	.07707	.023
		advanced	.40732*	.07516	.000

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	pre-intermediate	intermediate	-.19228*	.08987	.033
		advanced	.03992	.08824	.651
	Intermediate	advanced	.23220*	.08778	.008

4.4 Comparing First Language

To compare Persian and Turkish students in their anxiety level, independent t-test is used. The result of the study showed that there isn't any significant difference in both groups in all four scales as the level of significance is bigger than 0.05.

Table 8: Comparing First Language

	First Language	N	Mean	Std. Deviation	Levene's Test for Equality of Variances		t-test for Equality of Means		
					F	Sig.	t	df	Sig. (2-tailed)
Communication Anxiety	Persian	54	2.9421	.67760	.048	.826	-.409	520	.683
	Turkish	468	2.9808	.65582					
Fear of Negative Evaluation	Persian	54	2.7860	.61462	4.969	.026	-1.548	75.016	.126
	Turkish	468	2.9274	.79324					
Test Anxiety	Persian	54	2.9111	.80063	1.030	.311	.499	520	.618
	Turkish	468	2.8590	.71791					
English Classroom anxiety	Persian	54	2.6364	.60173	1.256	.263	-.082	520	.935
	Turkish	468	2.6441	.66739					

4.5 Comparing the Relationship among All Variables

To compare relationship among all variables Pearson correlation was used. Zero hypothesis in this test shows no relationship among all variables. If the level of sig is less than 0/05, zero hypothesis is rejected, meaning there will be significant relationship among variables. Results of correlation show that among all variables there is a direct significant relationship. There is a positive correlation and level of significance is less than 0.05.

Table 9: Pearson Correlation Test

		Fear of Negative Evaluation	Test Anxiety	English Classroom anxiety
Communication Anxiety	Pearson Correlation	.710**	.543**	.654**
	Sig. (2-tailed)	.000	.000	.000
	N	522	522	522
Fear of Negative Evaluation	Pearson Correlation		.556**	.660**
	Sig. (2-tailed)		.000	.000
	N		522	522
Test Anxiety	Pearson Correlation			.601**
	Sig. (2-tailed)			.000
	N			522

N=522

4.6 Discussion

The results showed that communication anxiety of EFL learners in the present study was higher than other three domains. The reason for such result might be because of students themselves or classroom activities that they perform in their language classes. Na (2007) believes that this issue can be attributed to students' English proficiency, which might not be high enough to permit them to communicate with others freely, express themselves adequately in class and answer teachers' questions properly. On the other hand, (Young 1991; Wang 2003) believe that classroom atmosphere and some classroom activities per se can be perceived as anxiety-provoking by students. Palacios (1998) lists some classroom tasks such as demands of oral production, feeling of being put on the spot, the pace of the class, and the element of being evaluated as anxiety provoking tasks.

The results of the present study also showed that Fear of Negative Evaluation was the second predominant anxiety among EFL learners. As Na (2007) claims "teachers should avoid negative evaluation of students in classrooms and comment on students' behaviors with more encouragement" (p. 30). He continues to claim that teachers can take some measures in relaxing students' attention on exams, like eliminating the ranking of students by their test scores. To achieve this end, teachers can talk about the inevitability of the existence of anxiety in learning and let their students know that their anxiety can be reduced by self-regulation of their thinking and study. Furthermore, the results showed that test anxiety was the third predominant anxiety among EFL learners of this study. Ohata (2005) believes that learners are afraid of taking tests, as test-taking situations would make them anxious about the negative results of getting a bad grade. This in turn can decrease the students' self-esteem or they may feel inferior compared to other students. Finally, the results showed that English Classroom anxiety was the fourth predominant anxiety among these learners. The reason for this issue can be teachers.

In most Iranian EFL classrooms, teachers play the role of dominator or an authoritarian character. Thus the role of the teacher can provoke anxiety in language classes and consequently lead to the lack of a free and relaxed environment for learning. Nahavandi & Mukundan (2012) Language in India www.languageinindia.com

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state that nowadays, teaching shouldn't be seen as a product but as a process. So activities in which students are involved in real communication and which promote learning should be considered very important. To use Widdowson's words teachers should be "facilitator of students' learning" or to put it in other words to function as an authoritative rather than an authoritarian figure. (p. 120).

Considering the level of proficiency Young (1991) claims that comparing low and high proficient learners, anxiety affects foreign language learners with low levels of oral proficiency more than those with high levels of proficiency. Therefore, it can be claimed that the results of the present study is in line with Toh's (2011) study in which Hungarian learners in advanced level classes were surveyed on their anxiety level. The results showed that foreign language anxiety was not restricted to the early, beginning stages of language learning, since even advanced level students were also seen as anxious learners.

However, the results of the present study, contrasts with Onwuegbuize et al.'s (1999) study, which examined anxiety at three different levels (beginning, intermediate, and advanced), levels. They reported that students experienced an almost linear rise in anxiety as years of study advanced. Similarly, Cheng (2002), who investigated anxiety in the writing skill in Taiwanese students of English, reported a similar finding. In her study, students' anxiety increased with the years of study; freshmen were the least anxious learners, while juniors were the most anxious learners with regard to writing in English.

Considering gender, the result is in line with some other studies in which no significant relation was found between language anxiety and gender. As an example, Aida (1994) found no significant difference in language anxiety between male and female students. Similarly, Dewaele (2002) claimed that gender did not correlate significantly with communicative anxiety in either English or French language as a foreign language. However, it should be mentioned that although no statistically significant difference was found between male and female learners in the present study, the mean of anxiety among females in all domains except test anxiety was

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higher than male learners. Therefore, it can be claimed that the results are partially in line with Cheng's (2002) study in which Taiwanese learners were surveyed on their English writing anxiety. The results showed that females were significantly more anxious than males. Finally, the results is in line with Sadighi, Sahragard & Jafari's (2009) study results showed that females were more anxious than males. However, the results contrast with Na's (2007) study which investigated anxiety of 115 Chinese EFL learners. The results indicated that male students had higher anxiety of English classes than female counterparts.

5. Conclusion & Implications of the Study

The results of the present study showed that Iranian EFL learners experienced anxiety in all four domains on the higher range of the scale. As it was mentioned before, high anxiety can lead to students' discouragement, loss of ability, and escaping from participation in classroom activities. Research has shown that learners with high anxiety often show low achievement which in turn can lead to more anxiety about learning.

Considering the results of the present study, some pedagogical implications can be suggested which might be useful for language instructors, in reducing students' level of anxiety in language classes. An understanding of learners' second language anxiety can inform the teachers to the possible causes of their students' low achievement in English, encouraging them to increase their efforts in bringing down the affective filters of the learners, with which anxiety plays a significant role (Krashen, 1985). As a result, the learners might be able to receive greater 'language input' which in turn can result in better learner output. For Casado and Dereshiwsky (2001), universities should catch up with modern technological developments to decrease students' anxiety and, as a result, increase their achievement. For Horwitz et al. (1986) two options are available for instructors considering anxious students: the first option is that "they can help students learn how to cope with anxiety producing situations and also they can make the learning context less stressful" (p.131). They continue to claim that teachers should first accept that FL anxiety exists and they should not always attribute student performance to lack of

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knowledge. Another option is providing cognitive and affective feedback in order to maintain their confidence in mastering the material. According to Birjandi, et.al (2006) successful students and those receiving positive emotional support from their teachers and classmates can better cope with any anxiety arising from time to time in class.

To achieve this end, teachers can create more relaxed environment for students by giving them more freedom in speaking and expressing their views. Another suggestion can be changing the testing policy in Iran. It is a well known idea that tests discriminate against students with test anxiety who perform badly under test conditions. As the nature of the test which is generally anxiety-provoking, other evaluation methods can be added to the evaluation system in order to prevent judging students ability on the basis of final performance in tests. One solution can be the inclusion of class participation as the indicator of student performance together with final performance, especially at universities of Iran which might decrease the student anxiety during test taking sessions.

Based on the results and suggestions of the present study, it is hoped that improvement in our English teaching system in the Iranian context could be obtained, and the foreign language classroom anxiety of our students could accordingly be reduced. Finally, the fact that language learning anxiety is a new area of research in Iran and the fact that it is psychologically a complex phenomenon cannot be ignored (Horwitz 2001). So it is hoped that some steps might be taken in universities and language institutes of Iran to decrease anxiety of Iranian EFL learners. Last but not least, it is hoped that the present research may encourage further research in the area of anxiety and the related problems it can cause for EFL learners by other interested researchers.

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Dhiruben Patel's *Agantuk*: A Critical Appreciation

Rajesh V. Basiya, Ph.D.

Dhiruben Patel



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Rajesh V. Basiya, Ph.D.

Dhiruben Patel's *Agantuk* - A Critical Appreciation

Dhiruben Patel was conferred the prestigious *Kendriya Sahitya Akademy Award* for her novel *Agantuk* in 2002. She has been a prolific writer in Gujarati Literature. Dhiruben was born in Baroda on 29th May 1926. She has achieved an outstanding position in modern Gujarati literature. She has been given a creditable position in the history of Gujarati novel. She also served as the President of the Gujarati Sahitya Parishad. She was also given the highest meritorious award for Gujarati literature *Ranjitram Suwarnachandrak* in 1983. She contributed in all genres of literature. She has written short stories, novels, plays, and poems.

Agantuk



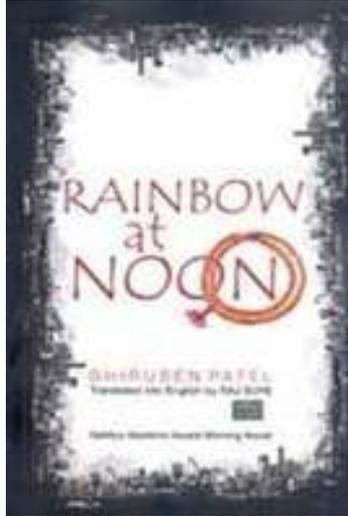
Agantuk was published in 1996. This is an excellent novel by Dhiruben Patel. Suhasini Mulay, an award winning documentary film maker, is producing and directing a tele-film called *Agantuk*, commissioned by the Central Government and this is scheduled to be a bilingual (Hindi and Gujarati) mini-series based on this novel. *Agantuk* is the story of a person striving to gain a spiritual high. This sincerity and purity makes him a misfit in modern society and he becomes an *agantuk*-chance-visitor/traveller/unknown person. The novel has been translated into English by Shri Raj Supe titled *Rainbow at Noon*.

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Dhiruben Patel's *Agantuk* - A Critical Appreciation



Dhiruben has imagined a unique situation in this novel: ‘What can happen if a Sanyasin (recluse) comes back after fifteen years of renunciation?’ In the prologue of this novel, Dhiruben narrates, “*Roshnithi Zalhalta khandman jameli mahefilman baharna andhkarmathi udine aavelun ek pakshi ek bariethi praveshi biji bariethi nikali jay etlasamayni aa vat.*” (A bird coming from the darkness of the outside enters a room full of light and festivity; it enters from a window and exits from another window. This is the only spin of the story.)

A Story of Spiritual Journey

This novel won the *Darshak Foundation Award* in 1995 and it was given the most prestigious *Central Academy Award* in 2002. This novel attracts all people. It is appreciated by all. It is the story of the spiritual journey of the protagonist, Ishan. He is a young man, and has a Bachelor’s degree. After the death of his mother, Ishan goes to an Ashram in Uttarkashi and trusts him. He desired that after his death, Ishan should be made the head of the Ashram. But when Omkargiri is no more, an ashram fellow Pratapgiri plots to become the head through intrigue. Ishan is truly religious. He has no ambitions, and he leaves both the Ashram and the Sanyasa. After fifteen years he comes back home to Mumbai. His two brothers Ashutosh and Arnav are suspicious of him when they see him. They exhibit no warmth in receiving him. Their wives Reema and Shalmali do not like his coming back.

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Ishan realizes that Ashutosh-Reema and Arnav-Shalmali are not interested in him. Still he is not disturbed. He decides to get settled somewhere else. As he is truly religious he blames nobody. Of course, Ashutosh has both love and sympathy for his brother but his wife is firm not to keep him with them. Hence Ashutosh sends him to Arnav's house. But neither Arnav nor his wife want him in the house. They treat him coldly. They arrange to keep him in the room of their servant Fransis. But Fransis becomes a staunch devotee of Ishan.

Niranjanbhai, a richman lives on the upper floor of the same building. His daughter Ipsita and son Rajat have met Ishan in Uttarkashi in the past. They lived in the same Ashram some years back. So they request him to stay with them in their house. Ishan responds positively. Rajat has been ill. Ishan cures him by repeated prayers. This is taken as a miracle. So many people come to Ishan for Darshana. Now Ashutosh-Reema and Arnav-Shalmali are ready to keep Ishan with them. But Ishan understands the vanities of the world. Niranjanbhai, Ipsita and Rajat really love and respect him. But Ishan is free from all the attachments. Another ashram fellow Somgiri comes to Ishan and requests him to come back to manage the Ashram, as Pratapgiri is not a real hermit. But Ishan persuades him to go back and keep faith in the Guru. Finally he leaves Mumbai and goes to Brindaban to live the life of a real recluse. His journey for eternity continues till the end of the novel.

Presentation of Contrasting Worlds

Agantuk is a good example of Dhiruben's maturity as an author. She has presented two worlds - the world of worldly people and the world of a truly religious man. In this world of worldly people a person like Ishan feels that he is a chance-visitor/traveler/guest- *agantuk*. *Agantuk* is a unique creation in the history of Gujarati Novel. *Agantuk* is a wonderful novel with a spiritual touch. It enjoys a remarkable position in the history of Gujarati Novel.

Presentation of Selfish and Hypocrite Family Relations

On the very first day of the arrival of Ishan from the Ashram of Uttarkashi his selfish brothers show him the cold shoulder. They are not prepared to keep him till he settles in this new life. Dhiruben has exposed the selfishness and hypocrisy of the so called practical man of contemporary society. Ashutosh telephones Arnav and asks him to share this responsibility:

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'Arnav! E aavi gayo chhe!'

'Hen? kevo lage chhe? Shun? kai bolyo-ketlu rahevano chhe, shun karvano chhe?'

'Na. me poochhyun pan nathi.'

'Barabar.'

'Aa kai mara eklani javabdari nathi, samje chhene?'

'Ha, pan tame mota - '

'tethi shun thai gayu ? tu aave chhene?' (Agantuk 07)

(*'Arnav! He has arrived.'*

'Yeah! How does he look? Did he say how long he will stay? What he will do.'

'No. I did not even ask him.'

'Okay.'

'This is not responsibility of mine only.'

'Yes, but as you are the elder brother...-

'So what? Are you coming?')

Guest is God Tradition

In our country we entertain the guest as God. The maxim of 'Athithi devo bhava' (Guest is God) is a tradition in our country. These brothers forget our great Samskara of Atithi devo bhav. Ashutosh directly shows his dislike for Ishan, *'To shun? Tare vichrvun joie. Amari pan kai musibato hoy, amari javabdario hoy...amne fave em chhe ke nahin e tare jovu joiene?'* (Agantuk 17)

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(What? You should see. We also have problems and other responsibilities. You should consider whether it is convenient or not.)

Ishan was not even a guest, he was their brother. The height of selfishness is seen among these so called cultured people when Arnav's wife Shalmali arranges for Ishan to stay with their servant in a small room in their large luxurious flat though they have an extra guest room. But these shameless brothers forcefully invite Ishan to stay with them when Ishan is respected as a miraculous saint and worshipped by people. Ashutosh forces Ishan to come back to his house, because they are interested in prosperity and fame that Ishan will pursue in future:

Ishan, men tara meditation classes mateni badhi taiyari kari nakhi chhe. I will manage the whole show..... I tell you, you will be famous in this city. Ishan, joje to kharo, with proper publicity bhalbhala rustam tane ahin page padta aavshe? (Agantuk 138)

(Ishan! I have completed all the preparations for your meditation classes. I will manage the whole show. I tell you, you will be famous in this city. Ishan! I am sure that due to proper publicity the distinguished personalities will come here and will bow down you.)

Ahin taro evo deluxe Ashram thashe ke na puchho vat. (Agantuk 139)

(A deluxe Ashram will be built for you. It will be so beautiful that even you won't believe it)

Varu, pan pacchi to tare aavij javanu Ishan! Aapnun ghar hoy ne tu bijane tyan rahe te kevan lage... (Agantuk 108)

(Okay, but now come with us, Ishan. We have our own house and you stay at others' house, it looks strange.)

Satire of Contemporary Social Milieu

The Indianness of Dhiruben is seen in her treatment of the credulous and superstitious people of India. They believe in any *Sadhus* and, any fraudulent person can easily impose upon

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them and make them worship him as Guru. The best example of such exposition is R.K. Narayan's novel, *Guide*. Similarly here Ishan has a chance to deceive the people quite easily; they worship him; heap food and other offerings upon him. Dhiruben makes a scathing satire on such so called Swamijis and Babas who cheat the distressed superstitious people. Ishan is surprised to see it:

Aa bapji banvanun bahun agharun nathi. Loko jatjatni pida bhogvata hoy chhe. Doobato manas tarnun jhale em je kai kaho te svikari le. Ek bholpan hoy chhe. Ek shraddha hoy chhe.....koi pan rite aadarpatra bani gayeli vyaktio aa manovyaparno labh lai potanun aasan jamavi dechhe. (Agantuk 120)

(It is not difficult to play the role of a Baba (saint). People have various types of problems. As a drowning man catches a straw, they accept whatever we say. They have innocence and faith. The so called respected people misuse this mentality of the people and make their own position sound.)

The Plot of the Novel

The plot of the novel is straight forward and uncomplicated. The novel is divided into six chapters. The flashback technique is used but it does not take the reader to the spot. It is narrated by the author or presented through the waves of thoughts in the mind of Ishan. Dhiruben is the omniscient author writing in the third person and thus following the traditional and conventional mode of narration.

Chapter one describes Ishan coming back from the Ashram. His brothers show him a cold response. Ishan realizes it and plans to settle somewhere anyhow.

Second Chapter narrates how Ishan understands the real situation. Through flashback Ishan is reminded of his Ashram life and his Guru's preaching. It shows how Pratapgiri's envy and scheming made Ishan leave sanyasi life and the Ashram.

In the following chapter a quarrel is created by Reema in Ashutosh's home. She is not ready yet to keep him. Ashutosh takes Ishan to Arnav's house. By chance Ishan comes into contact with the richman, Niranjambhai and her daughter, Ipsita. Now Ishan's healing touch

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cures bed-ridden Rajat. This miracle establishes him as a great saint. On the other hand, Ashtosh and Arnav have sent a private detective to Uttarkashi to check the matter. He informs them that Pratapgiri made false accusations of theft against Ishan. But here Rajat's health improves. He is saved from death. Ishan becomes a *Chamatkari Baba* - miraculous-saint. Ashutosh-Reema and Arnav- Shalmali are now eager to take Ishan home. People come for his Darshana. This is the climax.

The last chapter presents Somgiri's arrival from the Ashram. He tries to persuade Ishan to come back to the Ashram as the Ashram is in the hands of an evil person. But Ishan, a real hermit is not ready to go. He persuades Somgiri to go back and keep faith in the Guru. Finally, Ishan leaves for Brindaban.

Characterization

Ishan

Ishan is the protagonist. He is the most interesting and impressive character in the novel. The whole novel is simply a presentation of his situation in this worldly world where he seems to be a misfit. He is a young man of about forty. Since childhood he has been very innocent and honest. He took *diksha* and became a sanyasi after the death of his mother. He lives in an Ashram at Uttarkashi in the Himalayas. But after fifteen years he gives up Sanyasi life and comes back to worldly life.

Ishan lives a pious and spiritual life. He meditates, does jaap (recitation) and reads the *Vedas*. He was given a task to translate some religious Sanskrit books. His only aim is to complete the translation work assigned by the late Guru Omkargiri. Ishan returns to Mumbai after fifteen years. But now he is not a Sanyasi and he has no job and shelter. He lives like Trishanku in Hindu mythology:

*Ishanne Trishanku yaad aavyo. Ene jo Vyomma koik jagya mali shaki to
potane pan dharti upar koik jagya mali raheshe. Ishware nischit kari j hashe.
Shodhviye nahi pade. Eni mele j mali raheshe. (Agantuk 25)*

(Ishan was reminded of Trishanku. As Trishanku was given some place in the sky, he will also be spared some space on the earth. It will definitely be arranged by God. He will not have to find it. It will come to him itself.)

Trishanku and Other Metaphors

Trishanku is a character from Sanskrit mythology. He was a king. Due to a curse he was placed in an impossible position of hanging in mid-air. It is also a state of neither here nor there. Ishan symbolizes it. He is neither a sanyasi (a hermit) nor a sansari. (a house holder-with worldly affairs). Ishan is like a Yayawar bird. Yayawar is a wandering bird. It stays in a particular area for a particular season only. When the season is over, it flies to its native land. Ishan can appropriately be compared to that Yayawar bird. Ishan has great understanding; he cares for his brothers. He can perceive the lives of his well-settled brothers. He is ready to leave his house if he has difficulties. Ishan is a carefree person. He has faith in God. He does not want to become a problem for his brother:

'Ashutoshbahi!'

'Shun chhe?'

*'manase jindagino ek pan divas- are ek pan kalak vyagratama na kadhvo joie.
E pachho nathi aavto. Tamne anukool na ahoy to bolido. Hun kalej jato
rahish.'* (Agantuk 23)

(*'Ahutoshbhai!'*

'What do you mean?'

'Man should not pass a single day in worry....not even an hour. It never comes back. If it is inconvenient to you, please tell. I will leave tomorrow.')

Living Two Worlds

Ishan lives in two worlds. He is constantly reminded of the life of ashram. The author has presented two worlds here; one is of the so called practical people and the other of the pious

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saints like Isahn, Omkargiri and Somgiri. Ishan was the most favourite disciple of his Guru Omkargiri. He constantly remembers all the preaching of his Guru. He used to say, '*Shastar padhte ho ki toteki tarah ratte rahte ho? Samjte nahin?- ye khakka putla hain- Is par anurag nahi rakhte.....bhitark dekho. Hammesha bhitark dekho bete! Bahar mat dekhna.*' (Agantuk 46) (Do you read the scriptures or simply recite them like a parrot? This body is nothing else but ash only. Do not have too much affection for it. Look inside. Do not see out side; always look inside, my son.) But Pratapgiri is jealous of Ishan. He tries to make a group of his own followers. Here Dhiruben exposes such so called Sanyasis who are do evil in the name of Dharma.

Ishan has some miraculous power in him. This pious and spirited Ishan attracts Fransis, the servant of Arnav. Fransis visualises Father Harris in Ishan. He becomes a devotee of Ishan and loves him. Ishan is so honest and innocent that he does not like people bowing down to him or calling him Baba, '*Have hun matra Ishan chhun ne Arnavbhai? Baba kahevdivano ke mane koina pranam svikarvano koi adhikar nathi.*' (Agantuk 82) (Arnavbhai, I am Ishan now. I have no right to be addressed as Saint or accept the salute of the people.)

'Niranjankhai bolya, Swamiji!'

'Na na na! Men Ashram chhodi didho chhe. Bhagva pan uteri didha chhe Have mane evu na kahevay.' (Agantuk 87)

(*'Niranjankhai said, ' Swamiji!'*)

Oh no! I have left the Ashram and I also have given up renunciation. Now do not address me in such a way.)

When Rajat is improved by the healing touch and prayers of Ishan Niranjankhai considers him a miraculous saint:

'Baba ! maro dikaro bachi gayo'.

'Ishwarni ichchha.'

'Ishawarni nahin Baba tamari'

‘ Na, mari nahin – Rajatni potani, ane Ishwarni ichchha vina to aapnathi shvas pan kya levay chhe? E to sauthi pahelo chhe. (Agantuk 104)

‘Baba, my son has been saved.’

‘It is the wish of God’

‘Baba! It is your wish not of God’

‘No, not mine; it is Rajat’s own wish. We can’t even breathe without the wish of the Almighty. He is the only saviour.’)

Conscious of His Goal

Ishan is a real Sanyasi. He is every moment conscious of worldly temptations. Ipsita is the very beautiful young daughter of Niranjambhai. She comes into his room off and on for various things. Ishan politely requests this beautiful devotee not to disturb him. Ishan has great faith in God. When Pratapgiri accuses Ishan of theft, he is not disturbed at all. He pacifies Fransis and asks him not to worry about false accusations. He says, *‘Aakhre to asatya aaropothi vichlit thava jevun hotun nathi. Kyarek ne kyank to satyano uday thay j chhe. E kshan ni rah jovani. (Agantuk 103)* (We should not be distressed by false accusations. Finally, there will be the rise of truth somewhere. Just wait for that moment.)

Ishan is completely conscious of his aim of life. That is Moksha- salvation. He comes back into worldly life, but he is constantly thinking about the ultimate aim of his life:

Sansarma aavya pachhi aava badha pratibandho chalshe nahin. Jatjatna sanjogo aavshe, jat jatna manaso malshe. E badhani vachche rahine pan aatmachintanma magna rahevanu chhe. Pote shun e kari shakshe? Kyarek lapsi javay to? (Agantuk 87)

(Such practices will not be possible in this practical world. Various types of circumstances will be created and there will be meetings with various types of people. Among all these, I have to contemplate on self. Will I be able to do it? What will happen if I am tempted somehow?)

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Ashutosh

Ashutosh is the elder brother of Ishan. He has a son and a daughter. He has love for his brother but he is under the control of his wife. He plans to rent a small flat for Ishan. He wants to settle him there. But due to his quarrelsome wife he has to send Ishan to Arnav's home. He also proves selfish in the end. Reema is a typical selfish wife. She is not ready to keep Ishan in her house. But when Ishan becomes a miraculous saint this selfish woman is ready to accept him.

Arnav

Arnav also is an elder brother of Ishan. He is the most materialistic and cunning man. He is the so-called practical man. Shalmali, Arnav's wife is a very big hypocrite and she is very selfish. She is very fond of show and pomp. She is mainly interested in materialistic things.

Ispita

Ipsita is the only good lady character in the novel. She is the daughter of Niranjambhai, a richman. She is young and beautiful and has the good qualities of brain and beauty. Though she is very rich she is a simple woman. She has a lot of devotion and respect for Ishan. She belongs to the good characters of the novel. Somgiri is one of the good characters. He is eager to take Ishan to the Ashram. He is a pious sanyasi. Niranjambhai is a typical rich father of a sick son. He has respect and love for Ishan. Fransis is a minor, but very impressive character. He has deep respect for Ishan.

Vision of the Author

Human life is the greatest gift of God. Happiness in life is the sole aim of all human beings. Dhiruben seems to convey a wonderful message here. She has written this dialogue for Ishan, '*manase jindagino ek pan divas- are ek pan kalak vyagratama na kadhvo joie. E pachho nathi aavto.*' (Agantuk 23) (Man should not pass a single day in worry....not even an hour. It never comes back.)

When Pratapgiri makes accusations of theft against him, Ishan is not disturbed at all. His response is very positive and optimistic. The pious, hermit says, '*Aakhre to asatya aaropothi*

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vichlit thava jevun hotun nathi. Kyarek ne kyank to satyano uday thay j chhe. E kshanni rah jovani. (Agantuk 103) (We should not wait for that moment.)

Language Style of the Author

Third person narrative technique is used here by Dhiruben. The author is omnipresent. The narration is very dramatic; we can almost visualize the events before our eyes. Ishan broods over his past life at the Ashram of Uttarkashi off and on. The preaching of Omkargiri is reflected through the mind of Ishan. Ishan's character is exposed through his thoughts and sentiments. Flashback technique is used to present the past life of Ishan.

Use of Mythology

Dhiruben has cited some allusions from Mythology. To present the situation of Ishan she has mentioned the character of Trishanku. Some other examples are of Abhimanyu and Vishwamitra. She compares the temptation of the world with the death of Abhimanyu in *Mahabhart*a, “*Kyo Viswamitra aavine aa Trishanku mate srushtini rachna karshe?*” (Agantuk 27) (Who will become a Vishwamitra to create a world for this Trishanku?) Vishwamitra is a mythological character from the *Ramayana*. He was a great saint. The Character of Trishanku is chosen to illustrate the exact situation of Ishan. It is a good comparison to Ishan's situation. As each chapter ends, there arises a sense of curiosity in the mind of the reader. The reader thinks of what will happen now? Really *Agantuk* is one of the finest novels ever written in the Gujarati language. The *Sahitya Akademy* award was awarded to this novel, and that was a fitting appreciation of Dhiruben's art.

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English Translation of Gujarati quotes from the novel was done by the author of this paper.

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Knowledge of Pedagogy and ICT for Effective Communication in Language Teaching

Shafeeq. C.P., M.A, M.Ed.

Abstract

Effective communication is an essential part of any kind of teaching. It is very much true with the language teaching-learning process. Though CLT is appreciated by many applied linguists, it is not well implemented in many EFL contexts. For successful communication in the present day language teaching, it is necessary for the teachers to possess pedagogical and ICT perceptions that can make the best use of the promise of CALL and CMC.

Key words: ICT, CLT, CALL, and CMC

Introduction

Effective communication is the key to any field that requires interpersonal relationships. Teaching is an area that is much dependent on teacher-learner communication. Effective communication results in effective teaching. Also, it helps in strengthening learner-teacher

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relationship. Interactions and discussions are considered the most widely accepted means of class-room communication. Education implications of modern theories point out the shortcomings of passive one-way learning. The very idea of learner-centred approach is based on communication. These facts remind us of the importance of communication skills on the part of a teacher for the development of a better teaching-learning process.

However, many teachers fail to recognize this, and they prove to be ineffective teachers. Even teacher education centres fail to understand the realities and fail to equip the future teachers with better communication skills. “One of the most neglected aspects of teacher training is thorough preparation in the diverse communication skills that are needed by good teachers in today's schools” (Morgan, 1989).

When ineffective communication occurs in language teaching, the catastrophe can have far reaching consequences, as the essence of language is to communicate. Language teachers need to be effective communicators with a thorough knowledge of various aspects of communication strategies in their dealings with their learners, knowing the fact that interpersonal communication skills form almost half of language teaching. Considering this fact, Communicative Language Teaching (CLT) has been appreciated by many applied linguists and language educators as an effective language teaching approach. However, research shows that CLT has been facing problems in its implementation stage.

Sometimes, lack of diligence on the part of the teachers stands in the way of successful implementation of the teaching-learning process. However, many teachers correctly identify the communicative activities of CLT and understand what CLT means. At the same time, they uphold many misconceptions. These misconceptions and the resulting barriers to the implementation of CLT are found in many Asian ESL and EFL contexts. Because of these misconceptions and barriers, teachers cannot implement CLT in class rooms (Chowdhury, 2012).

This article deals with some of the most important aspects that can be helpful to form the perceptions of an ideal language teacher of our times.

The Role of Pedagogy

Teaching is a profession that requires some basic personality traits that are fit to accomplish the target of teaching very well. This leads some researchers to the extent of saying that there may be some individuals who are born *not* to teach (Ur, 1997). Such ideas can be controversial when we find thousands of teacher education centres that are meant to create emerging teachers. However, we accept the fact that as a disseminator of knowledge as well as values, teachers should possess highly distinguished personality traits that may vary from one culture to another. This does not mean that content knowledge and personality are the only two qualities of an effective teacher. Although personality cannot be taught, specific characteristics and behaviors can be isolated and developed. Without teacher education research, the traits and strategies of effective teachers would not be identified (Malikow, 2006). So, it necessitates the teachers to acquire the basic requirements for teaching a particular subject.

Knowing Your Target Group

Knowing your target group is an essential component in any kind of teaching. Many language teachers fail in this aspect, especially EFL teachers who are put in a different cultural context. In many parts of the world, language learners need a high level of motivation to have a positive attitude towards learning. It is noticed that motivated children with positive attitudes towards the target language, learners who enjoy being in the classroom and who feel that what they learn will be useful for them in their life, perform better than others. Thus, it should be the aim of the educators to promote enjoyable learning, through a pleasant atmosphere and interesting material, in order to promote motivation (Petrides, 2006).

Asking thought-provoking questions of the learners and encouraging them to articulate their thinking is a common communication strategy used by many teachers. However, creating a classroom atmosphere where students are free to ask thought-provoking questions is the real success of education. It has been widely noticed that some teachers fail to take the students' questions seriously, and create a huge communication gap. Therefore, teaching is not just imparting knowledge; instead a series of various pedagogical applications. Mohan states:

It is not enough to be merely a teacher who wears a “know all” mask, but a facilitator who understands her students, empathizes with him/her, and in fact becomes a part of the search with her students, for knowledge and wisdom. One of the advantages of systematically incorporating into one's teaching these learning-how-to-learn tasks is that learners became aware not only of their own preferred ways of learning, but also the fact that there are choices, not only in what to learn but also in how to learn (Mohan, 2012).

Effective Use of ICTs

For better communication in the present day classrooms, Information and Communication Technologies help a lot. ICT components help teachers in enhancing their skills as well as better dissemination of knowledge. One of the rationales of the use of ICTs in education is faster communicability, i.e., by constructing presentations, learners can communicate their points of view using different platforms or findings. They can work together to share ideas, and develop their social skills through debate with their partners. They can learn how to manage their feelings when they disagree about an issue or understand other people's needs and emotions and enhance their own self-awareness. Technological and pedagogical perceptions of the teachers need to be modified in order to achieve the complete use of ICTs in the teaching learning process. Teachers who intensively use information technology emphasize the importance of using information technology for facilitating students' participation in

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progressive inquiry, collaborative learning, the learners' active engagement in knowledge formation process, and learnability of intelligence more than other teachers (Lehtinen, 2001).

Early studies of ICT-mediated instruction's effect on student-learning have been characterized as the “no significant difference” phenomena. That is to say, whatever medium of instructional delivery – film, radio, television, telephone, or computer – was used, no significant difference on performance measures was found between students receiving ICT-mediated instruction and those receiving traditional face-to-face instruction in a classroom. Both groups performed equally well. Such studies were based on the effectiveness of drill and practice and tutorial software programs that reflected the behaviourist approaches to education. But, studies focusing on the use of computer-mediated instruction conducted in the 1980s found more positive results.

In the 1990s, use of ICT in schools moved towards engaging students in “authentic” learning tasks in which students use computers, software, and network access to simulate events, communicate, collaborate, analyze data and access information resources. For these applications of ICT in schools, the research data are less extensive. However, some individual studies have been conducted that demonstrate positive learning and affective outcomes of ICT enabled education. It appears, therefore, that ICT, properly used, may enhance and increase communications between people. After analyzing the different studies in this area, Blurton comes to the following conclusions:

In conclusion, evidence has consistently shown ICT-mediated instruction using conventional teaching methods is as good as traditional face-to-face instruction and, in the case of computer-based instruction, may in select instances improve student learning and attitudes towards learning. However, the picture is less clear – but promising – for more sophisticated uses of ICT in the classroom, especially for the host of applications and methods that support “constructivist” learning, in which students are

encouraged to work in rich environments of information and experience to build their own understandings about them. Worldwide, research into the effectiveness of ICT-mediated instruction is continuing and should provide a clearer picture of the effectiveness of ICT in supporting constructivist pedagogy (Blurton, 2002).

CALL and Present Day Classrooms

The developments in technology paved the way for an area of discussion in language teaching called Computer Assisted Language Learning (CALL). Though it emerged by the rapid development of technology from the early 1980s, CALL has now become an essential component of second and foreign language learning pedagogy. In the past, though it was viewed just as a supplement to classroom teaching, communicative interaction-based CALL activities are now used to promote learner autonomy and to encourage involvement with the target language both inside and outside of the classroom. Computer Assisted Language Learning (CALL) has been defined as “the search for and study of applications on the computer in language teaching and learning” (Levi, 1997). It is now used in a variety of instructional settings. This has necessitated the language teachers to possess CALL expertise that includes both practical skills and a thorough understanding of information technology (IT).

CALL and Language Teaching

Though Computer assisted Instruction (CAI) is common to teaching of all subjects, CALL has become an exclusive part of language teaching, especially Second Language (L2) learning. . CALL can be employed in many ways. It is sometimes promoted as a complete method of learning a language. In classrooms it can be used both as a reward for better learners or a remedial aid for weaker ones. Some language labs integrate CALL and some teachers in foreign countries use CALL activities based on email and the World Wide Web (WWW) to supplement student learning. “It is likely that in future, computer based language tools will become both pervasive and invisible; that is, they will be commonly included in other

applications and computer interfaces will become almost completely intuitive, perhaps through computer software able to recognize and intelligently respond to speech” (Beatty, 2003).

Computer-mediated Communication

One of the important components of CALL is Computer-mediated Communication (CMC), which refers to a situation in which computer-based discussion may take place but without necessarily involving learning. Vast research on computer-assisted language learning (CALL) proposes that the integration of CMC into EFL learning can provide learners with more authentic input and more opportunities to participate in the target socio-cultural contexts; both linguistic and pragmatic knowledge can be promoted. Moreover, motivation, learner autonomy, social equality, and identity can also be encouraged through the use of CMC inside and outside of the class (Larsari, 2011).

Conclusion

Knowledge of pedagogy and ICTs is essential for the successful implementation of communication strategies promised by CLT. The teacher education of the developing countries needs to give serious emphasis on the development of the emerging teachers’ communication skills. Knowledge of pedagogy and the basic assumptions of ICT integration in education are the key factors that can create communicative atmosphere in modern classrooms. While the technologically advanced countries have gone ahead with the integration of CALL in language teaching, the conditions in many of the third world countries are not promising. It’s high time for the educators in those countries to think seriously and come up with effective strategies, so that the current digital divide can be minimized.

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Speech Intelligibility in Patients with T1 and T2 Cancers of the Oral Tongue Treated by Wide Excision and Primary Closure

Dr. Swapna Sebastian, Anto Suresh B., and Dr. Achamma Ballraj

Abstract

Aim: Glossectomy can affect tongue mobility and impairment of speech. Aim of the study was to measure speech intelligibility preoperatively and post operatively in patients with T1 and T2 cancers of oral tongue who have undergone wide excision and primary closure.

Materials and Methods: Twelve patients with T1 and T2 cancers of the oral tongue treated by wide excision and primary closure between the ages of 50 to 70 years were taken up for the study. Two of the patients were females and 10 of them were males. All of them had Malayalam as their mother tongue. Speech samples were recorded preoperatively (2-3 days before surgery) and four weeks post operatively.

Results: The results revealed that though there was a difference between preoperative and post-operative perceptual analysis of both vowels, consonants, words and passage, the differences were significant only for the passage.

Conclusion: Patients with T1 and T2 cancers of oral tongue who have undergone wide excision and primary closure showed better intelligibility scores at phoneme level and word level even

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after surgery and the intelligibility deteriorated at sentence level. This could be due to the failure to meet the demand on the articulators to move faster for the continuous flow of speech at sentence level.

Key words: Speech intelligibility, Glossectomy, Wide excision and primary closure

Oral Cancer

Oral cancer comprises about 2.5% of total cancer (Parkin , Bray, Ferlay & Pisani 2005). Oral cancer which involves lips, salivary glands, tongue, oral cavity and pharynx are treated mainly by surgery and /or radiation therapy or chemotherapy. Chemotherapy (CT) alone is not curative (Mendenhall , Riggs & Cassisi 2005). The staging system for cancer classification (TNM) (Sobin & Wittekind 2002) is used for selecting the treatment modality.

After the excision of the tumour, intraoral reconstruction is done which may range from primary closure, reconstruction with local flaps (mucous membrane and tongue), skin graft, distant flaps (eg., myocutaneous and osteomyocutaneous flaps), and microvascular free tissue transfer. (Louie, Duncan & Glasson 1984, Weda, et al. 1985, Leonard & Kolhe 1987, Yang, Chan & Gau, 1981, Muhlbauer, Herndl & Stock 1982)

Consequences of Glossectomy

Glossectomy can cause severe consequences on tongue mobility and impairments of speaking and swallowing. The speech of a person is an indication of his/her personality and has distinctive characteristic feature. Poor speech production can affect the quality of life. Aim of the treatment should be to spare organs and functions while trying to improve the survival rate. Measurements of speech intelligibility provide an index of the severity of the disorder and to quantify the changes that have occurred to the normal structures. Speech intelligibility refers to perceptual judgment made by a listener of how well he can understand it. It is further defined as the degree to which the speaker's intended message is recovered by the listener (Kent, Weismer, Kent &

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Rosenbek 1989) Intelligibility is typically based on the percentage of words, or sounds (i.e., vowels and or consonants) in a speech sample that are understood by the listener.

The present study is designed to compare the speech intelligibility preoperatively and post operatively in patients with oral cancer and has undergone wide excision and primary closure.

Methodology

Aim

Aim of the study was to measure speech intelligibility preoperatively and post operatively in patients with T1 and T2 cancers of oral tongue who have undergone wide excision and primary closure.

Subjects

Twelve patients with T1 and T2 cancers of the oral tongue treated by wide excision and primary closure between the age of 50 to 70 years were taken up for the study. Two of the patients were females and 10 of them were males. All of them had Malayalam as their mother tongue. Speech samples were recorded preoperatively (2-3 days before surgery) and four weeks post operatively.

Inclusion Criteria

1. The tumor excision had to necessitate removal of at least $\frac{1}{4}$ of the tongue and not more than $\frac{1}{2}$ of the tongue.

Exclusion Criteria

1. Patients with tumor extending to any other parts of the oral cavity / larynx
2. Patients with premorbid speech abnormalities.

Test Protocol

1. Consent for participation in the study was obtained prior to the testing.

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2. Digital recording of subject's speech using Sony UX-71F Digital Voice Recorder with ECM DS 30 P Electret condenser microphone was held at a mouth to microphone distance of 15 centimeters, at an angle of 45 degrees.

Test material

Test material consisted of four subsections:

i) 13 vowels, (ii) 36 consonants of Malayalam, (iii) 100 words with target consonants at the initial, middle and final position (all the consonants does not occur in all the three word positions in Malayalam) and (d) passage with all the consonants in Malayalam (which consisted of 54 words with 200 consonants). A score of one was given for understandable production of vowels and consonants. The scores were then converted into percentage for all the subsections.

The intra judge reliability and inter judge agreement was found out. Intra-judge reliability was evaluated by randomly replaying speech samples 3 times to the same judge. Inter-judge reliability was evaluated by comparing the rating obtained from the 3 listeners.

Statistical Analyses

Paired - t- test was done using the SPSS statistical software package to compare the preoperative scores with post-operative scores. Pearson's product moment correlation was done to find out the reliability of inter-judge scoring and intra judge scoring.

Results

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Table 1 showing the comparison between preoperative scores and post-operative scores obtained for the perceptual analysis of vowels, consonants, words and passage.

Stimulus	Preoperative		Post-operative		P value
	Mean	S.D	Mean	S.D	
Vowels	98.91	1.71	96.62	4.76	0.58
Consonants	98.85	1.90	95.77	5.37	0.56
Words	97.92	3.27	88.54	13.31	0.26
Passage	98.46	2.93	87.54	14.08	0.015

Table 2. Showing reliability of judgments made by the listeners.(Pearson's product moment correlation coefficients- $p < 0.001$)

Attribute	Reliability	
	Inter-judge	Intra-judge
vowels	0.97	0.95
consonant	0.92	0.98
word	0.94	0.94
passage	0.96	0.97

Discussion

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In this study we compared the preoperative speech intelligibility assessed perceptually with post-operative speech intelligibility of patients with cancer of tongue treated with surgical wide excision followed by primary closure. Intrajudge reliability was evaluated by randomly replaying speech samples 3 times to the same judge. Interjudge reliability was evaluated by comparing the rating obtained from the 3 listeners. Observed reliability coefficients were high and positive ($P < .001$) for all speech intelligibility attributes (Table 2).

The results revealed that though there was a difference between preoperative and post-operative perceptual analysis of both vowels, consonants, words and passage, the differences were significant only for the passage (Table 1). This indicates that the speech sounds were more intelligible at phoneme level and word level even after surgery and the intelligibility deteriorated at sentence level. This could be attributed to the fact that the articulators need to move faster for the continuous flow of speech compared to phonemes and words. When the demand on the articulators increases the performance is found to deteriorate. The study gives an insight about the functional outcome to maxillofacial surgeons and the tasks that need to be targeted in glossectomy rehabilitation by the speech pathologist. A comparative study of speech intelligibility using other treatment options will be done in the second phase of the study which would substantiate the superiority of one treatment over the other.

Conclusion

Speech intelligibility measured preoperatively and post operatively in patients with T1 and T2 cancers of oral tongue who have undergone wide excision and primary closure revealed that there were no significant difference in the intelligibility scores for consonants and words. However there was a reduction in scores for reading passage post operatively. This could be due to the failure to meet the demand on the articulators to move faster for the continuous flow of speech at sentence level.

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The Effect of Vocabulary Building on Students Academic Achievement in English Language at Elementary Level

Kifayat Khan

Dr. Muhammad Iqbal Majoka

Dr. Umbreen Ashfaq

Abstract

This study was conducted to examine the study the effect of vocabulary building activities on students' academic achievement in English language at elementary level.

The main objectives of the study were: a) to examine the difference between academic achievements of elementary level students in English taught by vocabulary building activities, and by traditional method for teaching English; b) to examine the

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difference between academic performance in vocabulary, comprehension, creative writing and language translation of students taught by vocabulary building activities and traditional lecture method for teaching English.

This study was conducted to examine the effect of vocabulary building activities on student's performance at elementary level. This study was experimental in nature and pre-test and post-test equivalent group design was followed for this study. Following methods and procedures were adopted to conduct this study.

All the students learning at elementary level in district Haripur constituted the population of this study. A survey of the elementary schools was made to seek the feasibility of experiment. In the light of feasibility survey, GGH School Basso Maira was selected for experiment. The students of 7th class of this school were taken as participant of the study. All the student of 7th class (n=56) were divided in to two equal groups using matched sampling on the basis of test scores in pre-test. One group was taken as experimental group and other was considered as control group. To measure the effect of treatment on students' achievement, a test was prepared under the guidance of a research committee. This test was used as pre-test as well as post-test. This test was validated using judgmental validation followed by pilot testing.

The collected data was arranged in to table and analyzed by using mean score, standard deviation and test as statistical tools. The analyzed data was interpreted in to findings of the study. Conclusions were drawn from these findings. And finally recommendations were made in the light of findings and conclusions.

The data analysis showed that activity base method for teaching vocabulary is very effective method of teaching at elementary level. It does not strengthen only the Language in India www.languageinindia.com

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vocabulary, but also it accelerates students learning in comprehension, creative writing and language translation. On the basis of research findings, following recommendations were made a) Activity based method should be adopted for better learning. English teachers are provided in-service as well as pre-service training in vocabulary building activities. This teaching technique is made part of curriculum for Elementary teacher training programs; b) Teacher should use activities for students for better learning; and c) Further research be conducted using activity method for teaching language in large classroom to see its effect on various aspect language learning.

Key words: Gender difference; classroom management; content management; conduct management; covenant management; time management

Introduction

Building a large vocabulary is essential when learning to read in second language. People with large vocabularies are more proficient readers than those with limited vocabularies (Beglar & Hunt, 1995, Luppescu & Day 1993). However, it is crucial to understand that learner can best build a large vocabulary through reading. Most recently, the national reading panels (2000) concluded that comprehension development cannot be understand without a critical examination of the role played by vocabulary knowledge. Student's success in school mostly depends upon their ability to read with comprehension. There is an urgency to providing instructions that equips students with the skills and strategies necessary for life long vocabulary development.

Vocabulary tasks should be restructured as necessary. It is important to be certain that students fully understand what is asked of them in the context of reading, Language in India www.languageinindia.com

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rather than focusing only on the words to be learned. Restructuring seems to be most effective for low achieving or at risk students. Dependence on single vocabulary instruction method will not result the optimal learning. A variety of methods can be used effectively in which words are to be learned. Linking new meanings to language that is already known can positively affect vocabulary learning (Gray 1997; Ney 1996; Richardson 1980; Schmitt 1995). These links are now commonly known as cognitive strategies, and are widely reported in vocabulary acquisition research. However it is necessary to use different techniques and activities for language learning.

Review of Related Literature

The study was designed to examine the competence difference of male and female students in English language at secondary level. In connection with this study, review of literature includes the following topics:

- Definitions of language
- Position of English language in Pakistan an overview.
- Aims of teaching English at secondary level.
- Skills of English language and gender difference.
- Language behaviour and language system
- English language competence and performance.
- Gender difference in language learning and competence.
- Gender attitude towards English language
- Socio economic status and academic achievement.
- Factors affecting the gender differences.
- Variation in language use process.
- Gender biological versus sociological theories.

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Definitions of Language

Different experts have defined language in different ways. According to Sapir (1921), “Language is purely human and non-instinctive method of communicating ideas, emotions and desires by means of voluntarily produced symbols.”

In *Outline of Linguistic Analysis*, Bloch and Trager (1942) stated, “A language is system of arbitrary vocal symbols by means of which a social group co-operates.” Hall (1968) tells us that language is “The institution whereby humans communicate and interact with each other by means of habitually used oral auditory arbitrary symbols”

Chomsky’s (1957) book *Syntactic Structures* stated that, “From now on I will consider a language to be a set (finite or infinite) of sentences, each finite in length constructed out of a finite set of element”.

Position of English Language in Pakistan: An Overview

English occupies an important place in everyday life and educational system of our country. In Pakistan English continues to be the medium of instruction for secondary schools, colleges and universities.

English plays an important role in many fields including the following.

- 1) English is an official language
- 2) English is the court language
- 3) English is the language of international trade and industry.

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- 4) English is considered to be a window on the modern world through which we are able to see the scientific, technological, commercial and educational development taking place (Parida, 2007).

Place of English in School Curriculum

Curriculum is derived from Latin word “currer” meaning “to run”, thus curriculum is the medium to realize the goals and objectives of teaching a particular subject of study (Parida, 2007)

Importance of Vocabulary in Language Learning

Words are the building blocks in a language. By learning the lexical items, we start to develop knowledge of the target language. Based on our experience of being a language learner, we seem to have no hesitation in recognizing the importance of vocabulary in L2 learning. Meara (1980) points out that language learner admit that they encounter considerable difficulty with vocabulary even when they upgrade from an initial stage of acquiring a second language to a much more advanced level. Language practitioners also have reached a high degree of consensus regarding the importance of vocabulary. The findings in Macaro’s survey (2003) indicate that secondary language teachers view vocabulary as a topic they most need research to shed light on to enhance the teaching and learning in their classrooms. Therefore, it may be claimed that the role of vocabulary in L2 learning is immediately recognized and implications for teaching from substantial research are in great demand.

The acquisition of vocabulary at an early age has been shown to be a critical predictor of later success (Becker, 1977; Joshi, 2005; Neuman, 2006 & 2005).

Vocabulary size has been linked to academic achievement (Baumann & Kameenui, Language in India www.languageinindia.com

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1991); as a predictor of overall reading comprehension (Yovanoff, Duesbery, Alonzo & Tindal, 2005); and is said to affect the ability to think at a deeper cognitive level, the ability to express ideas clearly, and the ability to learn new ideas more quickly (Neuman, 2006). The inability to read has many detrimental effects to the progress of students, including low self-esteem, lack of attendance, and disciplinary problems (Hasselbring, Goin, Taylor, Bottge, & Daley, 1997). The problem appears to be large scale, with as many of 36% of fourth graders reading below age appropriate levels and more prevalent in minority cultures such as Black, Hispanic, and Native American (Perie, Grigg & Donahue (2005).

While some children learn vocabulary well through the use of incidental learning often accomplished by reading age appropriate stories (Rupley & Nichols, 2005), several other factors seem to contribute to the lack of vocabulary. Prior knowledge seems to emerge as a relevant factor in some research (Griswold, Gelzheiser, & Shepherd, 1987; Hasselbring et al., 1997; Kintsch, 1994). Lack of prior knowledge can be linked to a lack of activity outside of school and in some cases low SES (Chall & Snow, 1982). Students of low socioeconomic status (SES) for example, seem to fall behind in their vocabulary knowledge (Graves, 1986), often early in elementary education (White, Graves & Slater, 1990).

Vocabulary Learning Strategies (VLS)

Key Previous Studies on VLS

In the process of investigating and classifying LLS, some studies indirectly involve the strategies specifically applicable to vocabulary learning. Nevertheless, studies on VLS in the early stage tend to focus on a limited number of strategies, such as guessing from context (Huckin *et al.* 1993) and certain mnemonics like the Keyword Method (Pressley *et al.* 1982). More thorough and in-depth studies which Language in India www.languageinindia.com

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look at VLS as a group are in need to contribute to a more comprehensive taxonomy of VLS (Schmitt 1997).

A large-scale study on Chinese university learners' VLS was carried out by Gu and Johnson (1996). 850 sophomore non-English majors participated in the survey by filling out a questionnaire composed of three sections: Personal Data, Beliefs about Vocabulary Learning, and Vocabulary Learning Strategies. Researchers correlated responses to the questionnaire with results on a vocabulary size test and a general English proficiency measure. It was found that there were significant positive correlations between the two metacognitive strategies (Self-Initiation and Selective Attention) and the two test scores, whereas mnemonic devices (e.g. imagery, visual associations, and auditory associations), semantic encoding strategies, and word list learning probably correlated highly with vocabulary size, but not with general English proficiency. In a multiple regression analysis, the two metacognitive strategies also emerged as positive predictors of both general English proficiency and vocabulary size. Nevertheless, the second best predictor of vocabulary size, namely Dictionary Looking-Up strategies, did not rank comparably high as a predictor of general English proficiency. Likewise, variables such as extracurricular time spent on English, intentional activation of new words learned and semantic encoding, seemed to play a role in predicting vocabulary size but not in overall English proficiency. The findings suggest that “students would benefit more if they aimed at learning the language skills rather than just remembering English equivalents of all Chinese words” (Gu and Johnson 1996, p. 659).

Another point to be noted in the study is that Visual Repetition and Imagery Encoding were both strong negative predictors of vocabulary size and English proficiency, implying that learners probably should not depend too much on visual repetition or fanciful imagery techniques when committing words into memory. Language in India www.languageinindia.com

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Nation (2001) states that Gu and Johnson's comprehensive study reveals some messages for teachers and learners, three of which are as follows:

Discovery Strategies

Discovery strategies include several determination strategies and social strategies. A learner may discover a new word's meaning through guessing from context, guessing from an L1 cognate, using reference materials (mainly a dictionary), or asking someone else (e.g. their teacher or classmates). There is a natural sense that almost all of the strategies applied to discovery activities could be used as consolidation strategies in the later stage of vocabulary learning (Schmitt 1997).

Guessing through Context

Nation (2001, p.232) maintains that "incidental learning via guessing from context is the most important of all sources of vocabulary learning". Over the past two decades, this strategy has been greatly promoted since it seems to "fit in more comfortably with the communicative approach than other, more discrete, Discovery Strategies" (Schmitt 1997, p.209). Context tends to be more interpreted as simply textual context. Nevertheless, some other important sources of information should also be taken into account when guessing, such as knowledge of the subject being read, or knowledge of the conceptual structure of the topic. In Liu and Nation's (1985, cited Nation 2001) study, it is found that a minimum requirement for the guessing to happen is that 95% of the running words are already familiar to the learner. Clarke and Nation (1980, cited Nation 2001) present an inductive five-step approach to guess, including:

Step 1. Find the part of speech of the unknown word.

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Step 2. Look at the immediate context of the unknown word and simplify this context if necessary.

Step 3. Look at the wider context of the unknown word. This means looking at the relationship between the clause containing the unknown word and surrounding clauses and sentences.

Step 4. Guess.

Step 5. Check the guess.

It must be noted here that the use of the word form comes after the context clues have been used. Some studies (e.g. Laufer & Sim 1985, cited Nation 2001) have suggested that learners made wrong guesses probably due to their heavy reliance on word form. When learners make an incorrect guess based on word-part analysis, they may twist their interpretation of the context to support the incorrect guess. Thus, the most difficult part of the guessing strategy is to make learners delay using word form clues until after using contextual information (Nation 2001).

Dictionary Use

Reference materials, primarily a dictionary, can be used in a receptive or a productive skill in language learning. A common situation is that, for example, when a learner meets an unknown word in the text and fails to infer the meaning through context, they might be advised to consult a dictionary. Looking up a word in a dictionary is “far from performing a purely mechanical operation” (Scholfield 1982, p.185); instead, a proficient dictionary user “is often required to formulate and pursue several hypotheses and make use of prior knowledge of various sorts, especially information derived from context” (Scholfield 1982, p.185).

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Except for locating the unknown word in the alphabetic list, which seems to be the skill most dealt with in respect of training dictionary use, other important facets involving effective dictionary use receive little attention (Scholfield 1982). Since many lexical items in a language have more than one meaning, learners should be instructed how to reduce multiple options by elimination.

Scanning all of the definitions in the entry before deciding which is the one that fits is a good idea proposed by Underhill (1980). After choosing a seemingly reasonable sense from the definitions in the entry, a user then needs to “understand the definition and integrate it into the context where the unknown was met” (Scholfield 1982, p.190).

The most sophisticated parts involving dictionary use arise when none of the senses in the entry seems to fit the context or more than one fits. In these situations, a user may need to infer a meaning that comes from the senses in the entry or “seek further contextual clues in the source text to disambiguate” (Scholfield 1982, p.193). Each of the above skills may be practiced separately through well-designed activities and only in this way can effective dictionary use be maximized and misunderstanding minimized.

Memorization Strategies

In general, memorization strategies refer to those involving making connections between the to-be-learned word and some previously learned knowledge, using some form of imagery or grouping. It is held that “the kind of elaborative mental processing that the Depth of Processing Hypothesis (Craik & Lockhart 1972; Craik & Tulving 1975) suggests is necessary for long-term retention” (Schmitt 1997, p.213).

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Thus, memorization strategies play an important role in helping learners to commit new words into memory and in the whole process of vocabulary learning. Schmitt includes twenty-seven memorization strategies in his 58-item VLS taxonomy.

Examples of memorization strategies contain “study word with a pictorial representation of its meaning”, “associate the word with its coordinates”, “use semantic maps”, “group words together within a storyline”, “study the spelling of a word”, “use Keyword Method”, or “use physical action when learning a word”, etc. Among the numerous mnemonics, the Keyword Method is also one of three strategies Nation (1990) proposes to apply when dealing with low-frequency words. This technique involves a learner finding a L1 word which sounds like the target L2 word and creating an image combining the two concepts. A number of studies (e.g. Pressley *et al.* 1982) have indicated that the Keyword method is an effective method of improving word retrieval.

2.3.4.2 Cognitive Strategies

In Schmitt’s VLS taxonomy, cognitive strategies primarily refer to written and verbal repetition as well as some mechanical means involving vocabulary learning. Although repetition as a learning strategy is not much praised by those supporting the Depth of Processing Hypothesis, it is popular among learners and may help them achieve high levels of proficiency (Schmitt 1997). In Schmitt’s study, for example, up to 76% of Japanese learners reported they used verbal and written repetition as consolidation strategies, making them the second and third most-used strategies separately. Other cognitive strategies involve using some kind of study aids, such as taking notes in class, taping L2 labels onto their respective physical objects, or making a tape recording of word lists and studying by listening. Vocabulary notebooks are also recommended by numerous scholars (e.g. Gairns and Redman

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1986; Schmitt 1995; Fowle 2002) to be implemented by learners to facilitate vocabulary acquisition.

Meta Cognitive Strategies

The study by Gu and Johnson (1996) has found that meta cognitive strategies are positive predictors of vocabulary size and general English proficiency, showing the significant role the meta cognitive strategies play in language learning. Thus, a need is seen to train students to control and evaluate their own learning through various ways, such as using spaced word practice, continuing to study word over time, or self-testing, all of which are included in Schmitt's taxonomy.

In this way, learners will take more responsibility for their studies and overall learning effect may be improved. Another important strategy in this group involves the decision to skip or pass a new word when it is judged to be a low frequency one which may not be met again for a long time. The fact that even a native speaker only knows a portion of the huge amount of words in a language suggests that an efficient L2 learner is supposed to spend their time and efforts on those words most relevant and useful to them.

Research on Vocabulary Development and Its Outcomes

The bulk of research on vocabulary instruction examines its effect on reading. Researchers explored students' acquisition of word definitions after practice with dictionary definitions (Anderson & Kulhavy, 1972); synonym pairs, word lists, and three-sentence passages (Gipe, 1979); word association tasks or the keyword method (McDaniel & Pressley, 1984; Pressley, Levin, & McDaniel, 1987);

Research Methodology

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This study was conducted to examine the effect of vocabulary building activities on student's performance at elementary level. This study was experimental in nature and pre-test and post-test equivalent group design was followed for this study. Following methods and procedures were adopted to conduct this study.

Population

All the students learning at elementary level in district Haripur constituted the population of this study.

Sample

A survey of the elementary schools was made to seek the feasibility of experiment. In the light of feasibility survey, GGH School Basso Maira was selected for experiment. The students of 7th class of this school were taken as participant of the study. All the student of 7th class (n=56) were divided in to two equal groups using matched sampling on the basis of test scores in pre-test. One group was taken as experimental group and other was considered as control group.

Research Instrument

To measure the effect of treatment on students' achievement, a test was prepared under the guidance of a research committee. This test was used as pre-test as well as post-test. This test was validated using judgmental validation followed by pilot testing. This test was consisted of 4 parts having 100 items in all.

Data Collection

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Both experimental and control group were tested by administering achievement test before and after the treatment. Test scores of students on pre-test and post-test served as data for this research.

Data Analysis and Interpretation

The collected data was arranged in to table and analyzed by using mean score, standard deviation and test as statistical tools. The analyzed data was interpreted in to findings of the study. Conclusions were drawn from these findings. And finally recommendations were made in the light of findings and conclusions.

The data were analysis and interpretation as follows: Building a large vocabulary is very essential for learning a second language. Learner can best build a large vocabulary by different activities. To prove the effect of activities on vocabulary building, an achievement test was prepared this test was used as pretest and post-test. The test consisted of four parts, comprehension test, vocabulary test, creative writing and language translation. This test was taken before and after the treatment, to see the difference between mean score of the student. Students were divided in to two groups, control group and experimental group. Control group was taught by traditional lecture method and experimental group was taught by through vocabulary building activities. The collected data was arranged in to following tables.

Table 1: Difference between mean score of experimental and control group in comprehension on pre-test.

Comprehension test	N	Mean score	S D	t
Control group	28	10.79	3.40	0.79
Experimental group	28	11.50	3.47	

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Table 1 shows that on pretest, the calculated value of t (0.79) is less than critical value of t (2.00) at (0.05) level of significance. Thus there was no significant difference between reading comprehension score of experimental and control group on pre-test.

Table 2: Difference between mean score of experimental and control group in vocabulary in pre-test.

Vocabulary Test	N	Mean score	S D	t
Control Group	28	18.39	6.23	0.12
Experimental Group	28	18.18	7.21	

Table 2 shows that on pre-test. The calculated value of t (0.12) is less than critical value of t (2) at (0.05) level of significance thus there was no significant difference between vocabulary scores of experimental and control group.

Table 3: Difference between mean score of experimental and control group in creative writing on pre-test.

Creative Writing	N	Mean Score	S D	t
Control Group	28	10.39	2.74	1.85
Experimental Group	28	10.82	3.04	

Table 3 shows that on pre-test the calculated value of t (1.85) is less than critical value of t (2:00) at 0.5 level of significance. Thus there was no significant difference between creative writing score of experimental and control group.

Table 4: Difference between mean score of experimental and control group in language test on pre test.

Language Translation	N	Mean Score	S D	t
Control Group	28	10.68	3.18	0.66
Experimental Group	28	11.32	4.50	

Table 4 shows that on pre test the calculated value of t (0.66) is less than critical value of t (2:00) at 0.05 level of significance. Thus there was no significant difference between language translation scores of experimental control group on pre-test.

Table 5: Difference between mean score of experimental and control group on total scores in English.

Total score	N	Mean score	S D	t
Control group	28	50.46	13.11	0.56
Experimental group	28	52.68	12.21	

Table 5 shows that on pre test, the calculated value of t (0.56) is less than critical value of t (2.11) at 0.05 level of significance. Thus there was no significant difference between mean scores of experimental and control group on total scores in English on pre-test.

Table 6: Difference between mean score of experimental and control group in reading comprehension on post-test.

Comprehension test	N	Mean score	S D	t
Control group	28	10.89	3.07	2.24
Experimental group	28	12.57	2.50	

Table 6 shows that on post-test the calculated value of t (2.24) is greater than critical value of t (2.00) at 0.05 level of significance thus there was a significant difference between reading comprehension mean score of experimental and control group on post-test. Because mean score of experimental (12.57) is greater than that of control group (10.89). Experimental group showed significantly better performance after treatment.

Table 7: Difference between mean score of experimental and control group in vocabulary test on post-test.

Vocabulary test	N	Mean score	S D	t
Control group	28	20.11	7.31	3.54
Experimental group	28	27.14	7.5	

Table 7 shows that on post-test the calculated value of t (3.54) is greater than critical value of t (2.00) at 0.05 level of significance. Thus there was a significant difference between vocabulary test mean scores of experimental and control group on post test. Because mean score of experimental group (27.14) is greater than that of control group (20.11), experimental group showed better performance, than control group in vocabulary test after treatment.

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Table 8: Difference between mean score of experimental and control group in creative writing on post-test.

Creative writing	N	Mean score	S D	t
Control group	28	11.32	3.24	3.50
Experimental group	28	14.11	2.63	

Table 8 shows that on post-test, the calculated value of t (3.50) is greater than critical value of t (2.00) at 0.05 level of significance. Thus there was a significant difference between creative writing mean scores of experimental and control group on post test. Because mean score of experimental group (14.11) is greater than that of control group (11.32), the experimental group showed significantly better performance than control group in creative writing after treatment.

Table 9: Difference between mean score of experimental and control group in language translation in post-test.

Language Translation	N	Mean Score	S D	t
Control Group	28	11.39	3.12	2.10
Experimental Group	28	13.04	2.82	

Table 9 shows that on post-test, the calculated value of t (2.10) is greater than the critical value of t (2.00) at 0.005 level of significance. Thus there was a significant difference between language translation mean score of experimental and control group in post-test. Because mean score of experimental group (13.04) is greater than that of control group (11.39) experimental group showed significantly better performance than control group in language translation after treatment.

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Table 10: Difference Between mean score of experimental and control group in total score of English on post-test.

Total Score	N	Mean score	S D	t
Control group	28	53.71	14.45	3.68
Experimental group	28	66.89	12.26	

Table 10 shows that on post-test the calculated value of t (3.68) is greater than the critical value of t (2.00) at 0.05 level of significance. Thus there was significant difference between mean scores of experimental and control group in total scores of English on post-test. Because mean score of experimental group (66.89) is greater than that of control group (53.71). Experimental group showed significantly better performance than control group in total scores of English on post-test after treatment.

Conclusion

Activity based method for teaching vocabulary is very effective method of teaching at elementary level. It does not strengthen only the vocabulary, but also it accelerates students learning in comprehension, creative writing and language translation.

Recommendations

Following recommendations were made in the light of findings and conclusions of this research:

- i. Activity based method should be adopted for better learning. English teachers be provided in-service as well as pre-service training in

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vocabulary building activities. This teaching technique be made part of curriculum for Elementary teacher training programs.

- ii. Teacher should use activities for students for better learning
- iii. Further research be conducted using activity method for teaching language in large classroom to see its effect on various aspect language learning.

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Importance of Conducive Classroom Climate, Positive Self-Concept and Motivation for Pakistani EFL Learners

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Abstract

This paper measures the importance of conducive classroom climate, positive self-concept and motivation for Pakistani EFL learners. Data were collected through randomly selected sample of 110 Pakistani EFL learners from both the public and private institutes. The simple data need no complicated statistical formula for analysis to maintain clarity and objectivity. So, data were simply elaborated through tables and diagrams. Finally on the basis of findings, a number of generalizations are made in relation to the importance of conducive classroom climate, positive self concept and motivation for Pakistani EFL learners. There are also given some recommendations that may help Pakistani teachers and EFL learners to achieve effective learning outcomes in future.

Keywords: Motivation, EFL Learners, Conducive classroom climate and positive self-concept

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Importance of Conducive Classroom Climate, Positive Self-Concept and Motivation for Pakistani EFL Learners

1. Introduction

The importance of conducive classroom climate, positive self-concept and motivation cannot be denied as far as the effective EFL learning is concerned. It has been widely accepted by both the teachers and researchers that conducive classroom climate, positive self-concept and motivation are the factors that have significant influence on the success and the rate of EFL learning.

Edwards (1974) says that every child desires to be accepted, to be with a group, and to be a part of that group. Thus, the assumption can be made that a class characterized by congenial, supportive and harmonious social relationships is more conducive to academic achievement than one in which this atmosphere is missing.

Schwartz (1972) believes that self-concept is based on four factors: competence, significance to others, virtue (doing the right thing), and power (influence in the individual's social structure).

Brown (1973) opined that, with training, the teachers were able to modify their classroom actions in ways that did result in students regarding themselves more positively. From the teacher's point of view, the most important consideration is what he/she can do in his/her class to improve the self-concept of the students.

Brown (2001) states that the motivation is the intensity of one's impetus to learn. The integrative motivation means that learner is pursuing a foreign language for social and cultural purposes. In this purpose, his motivation can be of high level and low level. In instrumental motivation, the learners study a language in order to further a career or academic goal. Their intensity of motivation can be high or low.

History reveals that integrative/instrumental dichotomy originally proposed by Gardner and Lambert (1972) has been the focus of researchers. According to Deci and Ryan (1985) and Lepper and Hodell (1989), the researchers looked at intrinsic & extrinsic motivation later on. Intrinsic motivation is without external inducement while the extrinsic is with external inducement.

2. Literature Review

Ditaul R. C. (2012) opined that the students were highly motivated with positive attitude towards learning English. They were both instrumentally and integratively motivated. It was also found that external factors could not affect the learners' motivation.

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Chang L.Y.H.(2010) concluded that class group influenced EFL learners' motivation. It was found that the students felt relaxed with the motivated class mates. In this way, their own motivation was increased. It was also found that the unresponsive learners could demotivate their class fellows.

Thanasoulas, D. (2009) was of the view that the teachers could not motivate the students to learn without accepting their personalities and studying their social and psychological make-up.

Christo Moskovsy and Fakieh Alrabai (2009) argue that instrumental motivation plays more important role than the integrative motivation as far as EFL learning is concerned. It was also concluded that integrative motivation is more relevant to ESL learning.

Moiinvaziri M. (2009) presented that English language learners were motivated instrumentally and integratively at the same time. His opinions were different from those researchers who believed only in instrumental motivation in foreign language learning. He concluded that the students were highly motivated towards learning English as a foreign language.

Green, J et el (2006) explore that improved self-concept and motivation are deeply linked with academic achievement. Self-concept and motivation cause academic achievement and academic achievement causes self-concept and motivation.

Rao K. (2005) gave his opinion that task-oriented assessment and development of online material could enhance the motivation among EFL learners. His study was on Saudi learners perspective.

Al-Otaibi (2004) opined that motivated learners could pay high cost and even make sacrifices to achieve their goals in learning foreign language. It was also found that motivated learners could learn language more effectively.

Dornyei (2001) opined that it was important to maintain the learners' self-concept and increase their self-confidence for effective language learning. It was further discussed that the teachers could increase self-confidence among their students by giving weight to their contribution.

Al-Hazemi H. (2000) argued that the learners with strong desire to learn language could achieve high level of competence in target language. The learners would actively accomplish their learning goals.

MacIntyre (1999) supported the fact that the tense classroom climate de-motivated the students and effective language learning was unlikely to be found in such an environment. He opined that a safe classroom climate was ideal for motivation and students felt comfortable to learn language in this climate.

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Good and Brophy (1994) believed that motivation could not be developed in stressful and chaotic classroom. It is responsibility of the teachers to create effective learning environment in classroom. Alienated students cannot have motivation to learn language. Effective language learning only occurs within a relaxed and conducive classroom climate.

Gage and Berliner (1975) talk about two types of student behavior problem that impede learning process. Firstly, the students possess much undesirable behavior that includes physical aggression and challenge to teacher's authority. Secondly, there is a less undesirable behavior on the part of student when he does not take interest in completing his assignment given by the teachers. The present research concludes that these behavior problems that affect the smooth learning of language can be solved with the help of motivation and conducive classroom climate.

Grittner (1974) is of the view that the students must be realized that they do creative work when they learn language. In this way, level of interest and motivation can be enhanced among language learners.

Oliva (1972) opines that the performance of the language learners can be made better by giving them appealing assignments that can make them motivated. The students will complete these assignments with keen interest and their class performance will be improved.

Greenwood et al (1973) float their opinion that facilitation of learning and commitment to teaching are the factors that can make the language learning process smooth. Facilitation of learning is to promote the students' motivation by improving their self-concept.

Ellsworth (1967) demonstrates that the students usually feel themselves being unlovable and being unable to cope with learning process. These factors hinder the learning of students. Teachers can remove this negative self-concept of the students by giving them motivation and confidence.

3. Methodology

The study was quantitative in nature. Data were collected from a group of 110 Pakistani EFL learners. Only volunteers who gave their consent were recruited. Selection of participants (including their gender) was completely random from both the public and private sector institutes. In terms of gender, the participant group was divided involving 58 males (52.73%) and 52 females (47.27%). See the chart below:

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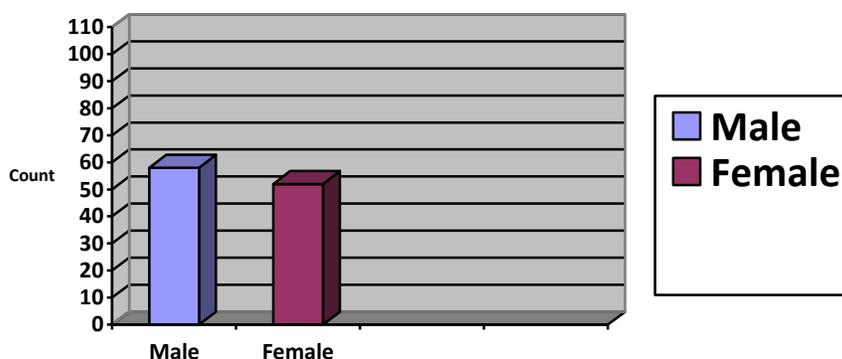
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Participants were guided to complete questionnaire .106 out of 110 participants (97.37 %) returned questionnaire with responses on all 30 questions. The remaining four were incomplete and have been excluded from the analysis. The questionnaire included 30 questions devised to measure three variables: conducive classroom climate (items 1-10), positive self-concept (items 11-20) and motivation (21-30).The questionnaire was designed on Likert scale. The participants had to select one of the five possible options which were assigned numerical values ranging from (0) to (4) as under:

Strongly disagree	1
Disagree	2
Don't know	0
Agree	3
Strongly Agree	4

Data collected through questionnaire was simple in nature. So, the researchers simply elaborated the data through charts and diagrams.

4. Results and Discussions

Chart 4.1.1: Male

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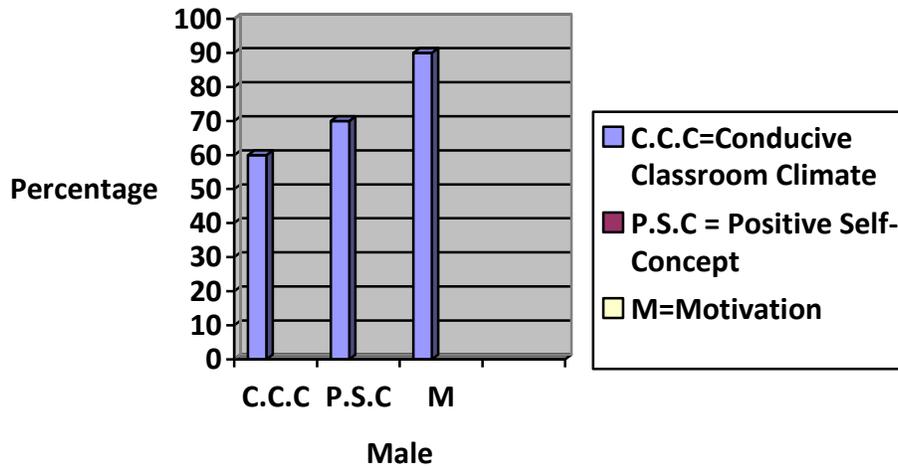


Chart 4.1.1 shows that 6 questions out of ten in first section of the questionnaire regarding conducive classroom climate are agreed by all the male respondents. Remaining four questions are disagreed so the ratio is 60 %. In section two, seven questions out of ten regarding positive self-concept are agreed and the remaining three are disagreed by all male respondents so the ratio is 70%. In last section, nine questions out of ten regarding motivation are agreed and remaining one is disagreed so the ratio is 90 %. Data collected from male members indicates that the motivation is considered the most important factor that increases the rate and success of EFL learning. Secondly, they gave importance to positive self-concept in learning. As far as effective language learning is concerned, less importance is given to conducive classroom climate.

Chart 4.1.2:

Female

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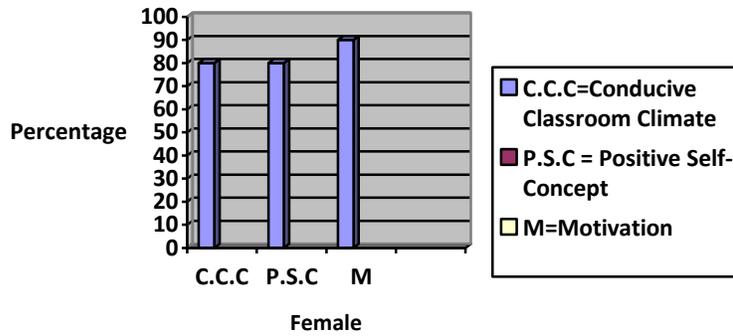
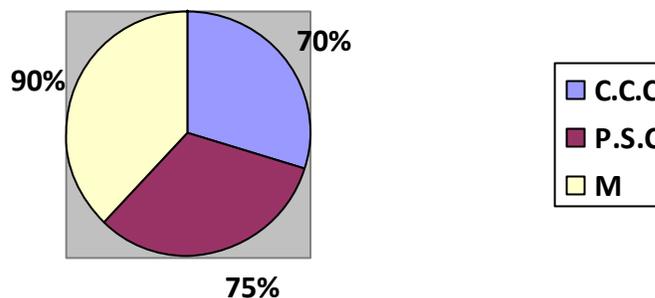


Chart 4.1.2 shows that eight questions out of ten in first section of the questionnaire regarding conducive classroom climate are agreed by all the female respondents. Remaining two questions are disagreed so the ratio is 80 %. In section two, again eight questions out of ten regarding positive self-concept are agreed and the remaining two are disagreed by all female respondents so the ratio is again 80%. In last section, nine questions out of ten regarding motivation are agreed and remaining one is disagreed so the ratio is 90 %. Data collected from female members indicates that the motivation is considered the most important factor that increases the rate and success of EFL learning. Secondly, they gave equal importance to positive self-concept and conducive classroom climate for effective EFL learning.

Chart 4.1.3
Cumulative

4.1.3 (Commulative)



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Chart 4.1.3 shows the cumulative results of the data collected from both male and female participants. The cumulative results indicate that the motivation is considered the most important factor that increases the rate and success of EFL learning. Secondly, the importance is given to positive self-concept for learning English as a foreign language. Thirdly, the conducive classroom climate is considered for effective EFL learning.

5- Conclusion

EFL learning can be made more effective by increasing motivation among the students. It is agreed by all the teachers and researchers that the learners will achieve their learning goals effectively and enthusiastically if they are highly motivated.

Effective EFL learning is only possible in conducive classroom climate. No researcher denies the importance of safe classroom environment. This environment motivates the learners to learn. Stressful classroom environment hampers effective EFL learning.

Researches made in this area support the view that it is very important to maintain learners' self-concept and self-confidence for the sake of effective EFL learning. Self-concept of the students can be improved by accepting their personalities and by giving importance to their classroom activities.

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Shifting Identities in Contemporary Indian Society – A Study of Meher Pestonji's *Pervez*

Arijit Ghosh, M.A. Ph.D. Scholar



Meher Pestonji

***Pervez* – A Thought Provoking Work**

Meher Pestonji's novel, *Pervez* (2003), set in Mumbai is a thought-provoking work that focuses on contemporary issues in India at the same time providing details and insight into the Parsi lifestyle. The narrative follows the protagonist's labyrinthine path leading to her maturation

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as a political being. The protagonist Pervez is a young Parsi woman whose failed marriage to Fred, a Christian rock-band-music singer, through a series of events leads her to the activist movement in the time preceding the demolition of Babri Masjid. She finds herself in confrontation with her understanding of equity, justice, religion and secularism.

General Features of Pestonji's Works

Most of the works of Pestonji concentrate on the characters on the margin of society, and bring them to the center of her discourse.

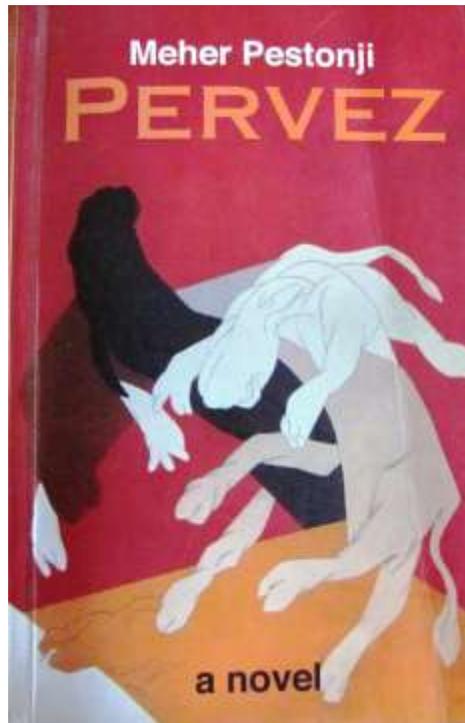
Her first book, *Mixed Marriage and Other Parsi Stories*, a collection of short stories is filled with stories like 'The Verdict' - about a Parsi couple whose first child suffers from cerebral palsy. 'Riot' is another story which records the experience of a Parsi social worker who walks through an unfamiliar locale of Dharavi slum during the disturbed period of Bombay riots.

Her latest novel *Sadaak Chhaap* though, does not deal with Parsi life and identity, but it is about the street urchins of past Bombay and present Mumbai. It is a fictional account of a ten-year-old street urchin who finds an abandoned infant girl on the railway platform. To her the boy plays the role of a foster father. The dire situation of the street children is not a distant reality in Bombay and other cosmopolitan cities in contemporary India. In almost all the works of Pestonji we see the characters bogged down in some adverse conditions from which they aspire to come out.

Pervez

The novel opens as she parts from her husband Fred, never to return. The narrative then shifts us to Bombay when she returns to her home to stay with her brother Darius and sister-in-law Dhun. She finds herself out of place having spent eight years with Fred in Goa before their marriage fell apart. She has become accustomed to living in Goa and now misses it. After her marriage she has not only lost her parents in a car accident, but coming back to Bombay, she realizes that she has also lost her class. In the party given by her rich brother Darius, she soon finds herself out of place. One part of her is eager to make up for lost time, another terrified of

encountering new worlds. In eight years, she had changed. The city had changed. She has to forge new equations.



Recreating the Memories

Returning home after eight years Pervez recreates her memories from a distance. She wants to become independent as she says to Dhun, “I don’t want to buy things I can’t afford... I don’t want to become a burden on Darius.” At the same time, she is constantly recreating her childhood memories amidst the old furniture of the house, in a way measuring her own self.

A party is one of the most convenient strategies to introduce characters in the narrative. In the party along with Pervez we also meet a plethora of characters like Mona Desai, Kavita, Vasant Chawla, Dilip Kanitkar, Nandita Rajan, Farhad, Anaita, and Naina, many of them we will never meet more than once. Eight years back Pervez enjoyed party, but now in the crowd she feels alienated from it.

A Minority Discourse against Fundamentalism

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Pervez turns out to be a discourse of minority standing against fundamentalism and essentialism. Being a social construct, literature recreates the images of society that serve to be a valuable instrument facilitating comprehension and assuagement of fundamentalism. The novel as a minority discourse reveals itself as a resistance against essentialism of the dominant social order.

Pestonji - a Non-conformist Posture

As an author, Pestonji is a non-conformist freelance journalist, she was as an active participant in the campaign to change rape laws during the 1970s, in the struggle for housing rights of the slum dwellers, in the anti-communalism campaigns and in the reporting on the Sri Krishan Commission investigating the Bombay riots of 1992-1993.

In an interview to *Times of India* she calls herself “an accidental Parsi”; she says, “My perception as a journalist prevailed over any kind of loyalty to my community which I don’t have”. She might call herself an “accidental Parsi” but her world view is conditioned by her Parsi identity. (Times of India, 19 Sep, 1999 as cited in *Sawnet*)

The Female Protagonist Perez

In *Pervez*, the female protagonist having the same name as the title of the novel is immersed in her Parsi identity. She was born and brought up in an affluent Parsi setting, amidst conservative Parsi parents, growing within the Parsi culture and tradition. She was a rebel in the family even long before she had fallen in love with Fred, a Christian, Goan bandmaster. A much younger version of Pervez had influenced and instilled courage in her younger brother Darius to defy their parents’ dictate and choose the profession of his choice. However, when Pervez decides to break the news of her love affair to her parents, their immediate response was shock, anger, disgust and denial.

As a preventive measure, she is detained within the four walls of the house. At last, she manages to escape out of her confinement and elopes to marry Fred. Their settlement in Goa is easy. Pervez, even though she and Fred had not had a Christian wedding, is readily welcomed in Fred’s family. Her mother-in-law treats her with compassion more because she is above their

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station in life, rather than being conditioned by natural affection. Pervez has to unlearn and learn cultural practices. She even has to painstakingly learn to eat with her own hands instead of forks and spoon after she marries Fred. Within eight years, their married life slowly wanes away. With Pervez, Fred is continuously behaving with aggression and without feelings. He often makes fun of her Parsi identity and family branding them as rich folk. Finally, when all her efforts to make adjustments with Fred fail, Pervez leaves Goa for Mumbai, never to return.

Perez returns to Mumbai to her home, which she had believed she had left forever. She had recently heard about the death of her parents in a car accident. Yet she could not take part in their funeral. Now after eight long years when she faces Darius and his wife, she finds it difficult to identify herself with the new family setup. It is not only that the house without her parents has changed, her eight years of exile has changed her. She feels like a fish out of water. However, Pervez is economically independent. Her deceased parents have left her enough fortune to sustain her. Moreover, Darius is a very caring sibling.

Perez wants to start a new life. She is confused and does not know what she wants in her life. She decides to get educated and take up a teaching career. However, through repeated meeting with her friend Naina at Kalina sets in motion a chain of events in her life. There she meets Praba, a member of the Feminist Forum. There is Vandana, who wants to pose nude for a fashion magazine. There is Siddharth who is a staunch Marxist trying to de-class himself and working in the slum areas in pursuance of his desire to bring about a social change. In their company, she is exposed to a medley of ideas, ideology and views that constantly changes her perception and identity.

Contemporary Issues

The novel in a fictional plane records live history of contemporary India. She witnesses debates and discussions about sexual freedom, objectification of body and reproductive rights. Yet Pervez does not yield herself to the attraction of any ideology. She is straight forward in expressing her own views. When Pervez asks Naina to change her house and move into a better house, which of course she could afford, Naina replies that she has been trying to ‘de-class’

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herself to identify with the common man in the class struggle. Pervez bluntly says, “This doesn’t make sense” (Pestonji 2003).

An Occasional Poet and Interest in Social Issues

During her tumultuous relationship with Freddie she occasionally turned into a poet and her poems provided a space for catharsis. Until we complete reading half the book, she is a listener. She listens and occasionally speaks but she always thinks. She learns about the much publicized Sahabanu case. Sahabanu went to the court in her seventies when her husband refused to pay alimony after divorcing her. As she follows the demolition of Babri Masjid at Ayodhya, Pervez slowly becomes politically aware. Miscreants create news one after another. Post-demolition of Babri Masjid had a backlash in the form of burning of a train at Godhara. The forest fire of communal violence soon spreads in Mumbai.

Changing Face of Dharavi Slum

The known contour of Dharavi slum, which Pervez frequents in her persuasion of social work, is fast changing. She is shocked by each new face of violence and mask of hypocrisy. All she could feel was the fire of hatred.

Munawar has utterly changed; from an adolescent slum boy he has turned into a conspirator and a murderous executioner. Navin Chawla, a capitalist, a business magnate makes use of the situation to his advantage. He sends goons to set the slums of Dharavi aflame in the façade of a riot so that he can build his resort; only much later this is discovered by Pervez. But yet there is hope and goodness still prevailing.

During the riot Pervez, a Parsi woman, with the help of a Christian family saves the life of a Muslim child. Majority of the people maintain their composure. People around her are fast changing.

Retaining Parsi Identity

Slowly but steadily throughout the narrative she identifies herself as part of the crowd of Mumbai, yet retaining her center at the edge of a Parsi identity. She maintains a fine balance

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between her interior self and her external environment. She believes in equality, but cannot become an orthodox communist like Sidharth. She has no objection in Munawar coming to her apartment and having food, but she certainly feels disgusted when Munawar goes on to take bath in her bathroom and uses her towel. She cannot “de-class” herself at the cost of her personal hygiene.

Bombay Changed

Through the continuum of events ranging from demolition of Babri Masjid at Ayodhya to the riot in Mumbai, has matured the perceptions of Pervez. At the end of the novel the riot has subsumed, but Pervez feels that Mumbai has changed to a great deal. She yearns for the Bombay she grew up, but people have changed. She has been able to overcome her personal agony amidst the suffering of the people. Her identifying herself with the riot and violence-stricken Mumbai has vanquished the pangs of domestic violence and emotional traumas. At the end of the novel, she seems to have acquired stoicism as we see her praying:

“Log rorahehain... Shanti do...Khumbaya, my Lord... Shanti do...” she sang to the breeze, the crab, the seagull and whichever pigeons were listening. “People are crying my Lord... Shanti do... He Bhagwan, O Allaah, Shanti do...”
(Pestonji318)

Prayer to God/Gods

She prays to Khumbaya, Allaah, and Bhagwan to bestow peace. Khumbaya is the Zoroastrian name for God – Pervez’s religious identity. With addressing Allah and Bhagwan she embarks on the journey to communal harmony. There is apparently no visible transcendental epiphany or discovery in Pervez, rather what she gains is knowledge and sensibility to identify with the sufferings of humanity at large.

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The Arabic Origins of Negative Particles in English, German, and French: A Lexical Root Theory Approach

Zaidan Ali Jassem, Ph.D.

Abstract

This paper aims to establish, through the application of the lexical root theory, the Arabic origins of negative particles and words in English mainly besides German, French, Latin, and Greek. Rejecting traditional Comparative (Historical Linguistics) Method views that Arabic and English, for example, are members of different language families, it shows that such particles are related to and derived from one another, with Arabic being their end origin perhaps. More precisely, negative particles like *no*, *not*, *in-*, *un-*, *ill-*, *mal-*, *dis-* and Arabic *in*, *ma*, *la*, *lan*, *lam*, *Did* are shown to be identical cognates with the same or similar forms and meanings or functions, albeit with slight phonetic and morphological changes.

Keywords: Negative particles, Arabic, English, German, French, Latin, Greek, historical linguistics, lexical root theory

1. Introduction

The lexical root theory was first proposed in Jassem's (2012a) study of numeral words as a rejection of the claims of the Comparative 'Historical Linguistics' Method that Arabic and English, German, French, and so on belong to different language families (Bergs and Brinton 2012; Algeo 2010; Crystal 2010: 302; Campbell 2006: 190-191; Crowley 1997: 22-25, 110-111; Pyles and Algeo 1993: 61-94). The theory established instead the genetic relationship between Arabic and English, in particular, and all other (Indo-)European languages. Such a position is justifiable on three counts. The first is geographical continuity and/or proximity

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between both sides of the Mediterranean which were historically one land stretch; the second is cultural similarity and the persistence of cultural contacts between Mediterranean peoples over the ages, turbulent at times though; the last and most important is the overwhelming similarity between their languages. Therefore, it would be impossible for the above languages and cultures not to be genetically related; in fact, the barriers and divisions are flimsy and artificial which can by no means mar, obviate or break up the deeply and genuinely interlinked relationship between the languages and cultures of these peoples across time and space.

The linguistic evidence came compelling, decisive, and clear-cut in all his studies in the field. First, in his investigation of all the numeral words from *one* to *trillion* in Arabic, English, German, French, Latin, Greek and Sanskrit, he found that all are the same or similar in form and meaning in general, forming true cognates with Arabic as their end origin (Jassem 2012a). All his subsequent studies have followed suit. Jassem (2012b) investigated common contextualized religious terms such as *Hallelujah*, *God*, *Anno Domini*, *Christianity*, *Judaism*, *welcome*, *worship*, and so on, which were also found to have true Arabic cognates. *Hallelujah*, for instance, is a reversal and reduction of the Arabic phrase *la ilaha illa Allah* '(There's) no god but Allah (God)' as follows:

<i>Halle</i>	+	<i>lu</i>	+	<i>jah</i>
<i>Allah</i>		<i>la</i>		<i>ilaaha & illa</i>
'God'		'no'		'god' & 'but, except'.

That is, *Halle* and *Allah* are the reverse of each other, *lu* and *la* (pronounced *lo* also) are the same, *jah* is a shortening of both *ilaaha* 'god' and *illa* 'but, except' which sound almost the same. Jassem (2012c) showed that personal pronouns in Arabic, English, German, French, Latin and related languages are true cognates, which descend from Arabic directly. Jassem (2012d) examined determiners like *the*, *this*, *an*, *both*, *a lot*, *very* in English, German, French, and Latin which were all found to have identical Arabic cognates. Jassem (2012e) established the Arabic genetic origins of verb *to be* forms in those languages. Jassem (2012f) showed that inflectional 'plural and gender' markers formed true cognates in all. Finally, Jassem (2013a) demonstrated the Arabic origins of English, German, and French derivational morphemes like *activity*, *activate*, *determine*, *whiten*.

The lexical root theory has a simple structure. To economize on space and avoid repetition, a briefly revised summary is given below. The lexical (consonantal) root is used in examining genetic relationships between words like the derivation of *rewritten* from *write* (or simply *wrt*). Hence the name. It has a construct, hypothesis or principle and five practical procedures. The theoretical principle states that Arabic and English as well as (Indo)European languages are not only genetically related but also are directly descended from one language, which may be Arabic in the end. In fact, it claims in its strongest version that they are all dialects of the same language. The applied procedures for analyzing lexical roots are (i) methodological, (ii) lexicological, (iii) linguistic, (iv) relational, and (v) comparative/historical.

The methodological procedure concerns data collection, selection, and statistical analysis. Except loan words, all language words and affixes or morphemes may be subject to study, and not only core vocabulary as is the practice in the field (Bergs and Brinton 2012;

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Crystal 2010; Pyles and Algeo 1993: 76-77; Crowley 1997: 88-90, 175-178). However, data selection is inevitable for practical reasons for which the most appropriate way is by using semantic fields like the present and the above topics. The steady accumulation of evidence from such findings will aid in formulating rules and laws of language change later (cf. Jassem 2012f, 2013a). The statistical analysis employs the percentage formula (see 2.2 below).

The lexicological procedure is the first step in the analysis, which is dictionary-based. Words are analyzed by (i) deleting affixes (e.g., *overwritten* → *write*), (ii) using primarily consonantal roots (e.g., *write* → *wrt*), and (iii) search for correspondence in meaning on the basis of word etymologies and origins (e.g., Harper 2012) (for further detail, see Jassem 2012a-f, 2013a.)

The linguistic procedure handles the analysis of the phonetic, morphological, grammatical and semantic structure and differences between words. The phonetic analysis considers sound changes within and across categories. That is, consonants may change their place and manner of articulation as well as voicing. Place relates to bilabial consonants ↔ labio-dental ↔ dental ↔ alveolar ↔ palatal ↔ velar ↔ uvular ↔ pharyngeal ↔ glottal (where ↔ signals change in both directions); manner concerns stops ↔ fricatives ↔ affricates ↔ nasals ↔ laterals ↔ approximants; and voice indicates voiced consonants ↔ voiceless. Similarly, vowels, though marginal in significance, may change as well. The three basic long vowels /a: (aa), i: (ee), & u: (oo)/ and their short versions (besides the two diphthongs /ai (ay)/ and /au (aw)/ which are a kind of /i:/ and /u:/ respectively), may change according to (i) tongue part (e.g., front ↔ centre ↔ back), (ii) tongue height (e.g., high ↔ mid ↔ low), (iii) length (e.g., long ↔ short), and (iv) lip shape (e.g., round ↔ unround). Such sound changes result in processes like assimilation, dissimilation, deletion, merger, insertion, split, syllable loss, resyllabification, consonant cluster reduction or creation and so on. Finally, Sound change may operate in a multi-directional, cyclic, and lexically-diffuse or irregular manner. The criterion in all the changes is naturalness and plausibility; for example, the change from /k/ (e.g., *kirk*), a voiceless velar stop, to /ch/ (e.g., *church*), a voiceless palatal affricate, is more natural than to /s/, a voiceless alveolar fricative, as the first two are closer by place and manner (see Jassem 2012b); the last is plausible. (For further detail, see Jassem 2012a-g.)

The morphological and grammatical analyses overlap. The former examines the inflectional and derivational aspects of the grammar such as the use of prefixes, suffixes, and infixes in general (Jassem 2012f, 2013a); the latter handles grammatical categories like case and word order (Jassem 2012c-d). Since their influence on the basic meaning of the lexical root is marginal, they may be ignored, therefore.

The semantic analysis looks at meaning relationships between words, including lexical stability, multiplicity, convergence, divergence, shift, split, change, and variability (Jassem 2012a-f, 2013a). Stability means that word meanings have remained constant. Multiplicity denotes that words might have two or more meanings. Convergence means two or more formally and semantically similar Arabic words might have yielded the same cognate in English. Divergence signals that words have become opposites or antonyms of one another. Shift indicates that words have switched their sense within the same field. Lexical split means a word led to two different cognates. Change means a new meaning developed. Variability

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occurs in the presence of two or more variants for the same word. (For further detail, see Jassem 2012a-f, 2013a, and below.)

The relational procedure examines and accounts for the relationship between form and meaning from three perspectives (Jassem 2012a-f, 2013a). First, words may be similar in form and meaning such as *three*, *third*, *tertiary* and Arabic *thalath* 'three' (Damascus Arabic *talaat*) (see Jassem 2012a). Secondly, other words may be similar in form but different in meaning like *ship* and *sheep* (see Jassem 2012b). Finally, still others may be different in form but similar in meaning such as *quarter*, *quadrant* and *cadre* (see Jassem 2012a).

Finally, the comparative historical analysis concerns comparing every word in English in particular and German, French, and Latin in general with its Arabic counterpart phonetically, morphologically, and semantically on the basis of its history and development in English (e.g., Harper 2012; Pyles and Algeo 1993; Algeo 2010) and Arabic (e.g., Ibn Manzour 1974; Ibn Seedah 1996; Alghalayeeni 2010) besides the author's knowledge of both Arabic as a first language and English as a second language.

This paper applies the lexical root theory, though with different degrees of focus, to the investigation of negative morphemes in Arabic, English, German, French, and Latin to show their genetic relationship to and/or their descent from Arabic cognates. It has six sections: introduction, research methods, data, results, discussion, and conclusion.

2. Research Methods

2.1 Data Sampling

The data consists of *all* negative morphemes in English, German, French and Arabic, which may be prefixes, suffixes, and full words. For the sake of economy and due to their similarity in European languages (e.g., Caroonet 2012; Lawless 2012; Green 2008), all the exemplary particles and words below will be for English.

2.2 Data Analysis

The data will be analyzed theoretically and statistically. The theoretical analysis utilizes the lexical root theory as a framework as surveyed above. The statistical analysis calculates the percentage of shared vocabulary or morphemes by dividing the number of cognate words over the total number of investigated words multiplied by a 100. For example, suppose the total number of investigated numeral words is 20, of which 18 are true cognates (see Jassem 2102a). Calculating the percentage of cognates would be $18/20 \times 100 = 90\%$. Finally, the resultant figures are checked against Cowley's (1997: 173, 182) formula to determine whether such words are dialects of the same language or languages of the same family, and so on (for a survey, see Jassem 2012a).

3. Negative Particles and Morphemes: A Brief Survey

3.1 In English

3.1.1 Prefixes

English has a number of negative prefixes, which are:

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- i) *in-* (*im-*, *il-*, *ir-*) as in *insane*, *impossible*, *illegal*, *irresponsible*;
- ii) *un-* as in *unripe*, *untidy*;
- iii) *no(n)-* as in *nothing*, *nonsense*;
- iv) *ill-* as in *ill-treatment*, *ill-health*;
- v) *a-* as in *asocial*, *abnormal*;
- vi) *anti-* (*anto-*, *ante-*) as in *antinuclear*, *antonym*, *antedate*, *anterior*;
- vii) *mal-* as in *maltreatment*, *malpractice*;
- viii) *mis-* as in *misunderstand*, *misanthrope*;
- ix) *de-* as in *deactivate*, *depreciate*;
- x) *d(i/y)s-* as in *disunite*, *dysfunctional*;
- xi) *contra/counter* as in *contrary*, *contraceptive*, *counteractive*;
- xii) *ex-* as in *exclude* (cf. *include*);
- xiii) *down* as in *downgrade*;
- xiv) *under* as in *underestimate*; and
- xv) *semi* as in *semi-circle*;

As can be seen, some particles are *n*-based; some may have other (inflectional and derivational) functions such as *describe*, *discuss*; *wanted*; *insure*, *oxen*; *arise*, *await*; some others may be independent words like *in*, *ill*, *down*.

3.1.2 The Suffix –less (German *-los*)

In English, *-less* is used as a:

- i) negative noun suffix, e.g., *careless* (cf. German *sprachlos* 'speechless'), and
- ii) full word in (a) negative comparison, e.g., *Sylvia is less pretty than Mandy* and (b) mathematical operations like *2 less 'minus' 1 equals 1*.

3.1.3 Full Words

Some negative words occur on their own, including:

- i) *no* (*nay*) (cf. *nobody* above);
- ii) *none* as in *None came* (cf. *nonsense* above);
- iii) *not* as in *do not do that*;
- iv) *nought* 'zero, dot, nothing' as in *He got nought*.
- v) *never*;
- vi) *seldom*, *rarely*, *scarcely*, *barely*, *hardly*, *just*, *yet*;
- vii) German *nicht* 'not' as in *nicht gut* 'not good';
- viii) German *kein* before nouns as in *kein Mann* 'no man';
- ix) French *ne* --- *pas*;
- x) *off* as in *turn off* (cf. *on*), *hands off*, *off-hand*, *offset*; and
- xi) *negative*, *refuse*, *refute*, *reject*, *object*, *deny*, *opposite*, *other*, *against*, and their derivatives.

3.2 Negative Particles in Arabic

Arabic has quite a large number of full negative particles, some of which are general and some are tense-specific as follows.

- i) *La* 'no, not' is very common, which may also be prefixed to nouns.

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- ii) *Ma* 'no, not' is general.
- iii) *Lam* 'did not' negates past tense verbs in Standard Arabic.
- iv) *Lamma* 'do not' negates present tense verbs in Standard Arabic; elsewhere, it means *when* in all varieties.
- v) *Lan* 'will not' negates future tense verbs in Standard Arabic.
- vi) *In* 'not, if' occurs in Standard Arabic, especially in the Holy Quran and sayings of the Prophet (peace be upon him). For example, *wa in min qaryatin illa ...* 'There is no town but...' (4: 112) (for similar examples, see 10: 15, 31; 12: 58; 16: 15; 19: 26; 24: 12).
- vii) *Illa* 'except, not' is a reduced assimilatory compound of *in* 'not, if' plus *la* 'not'. As a negative prefix, it was used during the Abbasid period, the golden era of Arabic language, literature, culture and thought, e.g., *illa-musawaat* 'inequality' (*la-musawaat* in current Arabic) (Hani Hasna, Katana (Damascus, Syria) Secondary School teacher, 1971-73).
- viii) *Laisa* 'not' negates nouns, adjectives, and present tense verbs as in *laisa jameelan* '(it's) not beautiful', *laisa yaktub* '(he) does not write'.
- ix) *Laata* 'no, not' is rare, negating nouns in Standard Arabic, especially in the Holy Quran (e.g., 49: 14; 28: 3). Its present tense form is *yalit* 'reduce, belittle'.
- x) *Did* 'against' and related *muDaad* 'anti'.
- xi) *Kalla* 'no' is formal.
- xii) *Ghair* 'not, other than' is common.
- xiii) *Mala* 'not not' is a negative compound of *ma* 'not' plus *la* 'not'.
- xiv) *Bila* 'without' is a negative compound of *bi* 'with, by' plus *la* 'not'.
- xv) *M(i/u/a)sh* 'no(thing)' is a reduced compound of *ma* 'not' plus *shai* 'thing'.
- xvi) *(Ma)fish* 'no(thing)' is a like reduction of *ma* 'not', *fi* 'in' plus *shai* 'thing'.
- xvii) *Balash* 'for nothing' is a similar compound of *bi* 'with', *la* 'not', and *shai* 'thing'. The last three are vernacular or spoken Arabic variants.

Some of the above words have certain grammatical characteristics and may have other context-based functions. For example, *ma* may be used as a (i) negative particle 'not', (b) question word 'what', and (c) relative pronoun 'that, which'. As such uses fall beyond the scope of this work, the curious reader may consult standard grammars like Alghalayeeni (2012) for further details.

4. Results

A closer scrutiny of English and Arabic negative particles shows that they make up really true, identical cognates.

- 1) The English prefixes *in-* (*im-*, *ir-*, and *il-* being due to assimilation) and *un-* and Arabic *in/lan* 'not' are identical cognates where /l & n/ merged in the latter.

As a preposition/adverb (e.g., *in* water, he's *in*, come *in*; divide *into*), *in* has three formally similar but semantically different Arabic cognates: (a) *huna* (*heen* in my accent) 'here' where /h/ was deleted (cf. English *inn* from Arabic *2aana(t)* 'bar' where /2/ was deleted), (b) *ila* 'to' in which /l/ became /n/ coupled with semantic shift, and (c) *min* 'from' where /m/ merged into /n/ coupled with lexical shift.

- 2) *No* (Old English *na; nay*) is a cognate of (a) Arabic *ma* 'no, not' in which /m/ turned into /n/, (b) a reversed *in* 'no', or *la* 'no' where /l/ became /n/.
- 3) *None* consists of *no* plus *one* (Harper 2012). *No* has just been settled; *one* is from a reduced Arabic *awwal/oola* 'first, one (m/f)' where /l/ became /n/ (Jassem 2012a).
- 4) *Not* comes from a reduced Old English *nawiht* 'nothing' (*na* 'not' plus *wiht/(wight)* 'thing, creature, being', further reduced to *n(o/a)ht* 'in no way') (Harper 2012). As a compound, *nawiht* derives from Arabic *ma/la wihdat/wahid* 'no one (f/m), nothing' where /m & l/ turned into /n/ while /d/ into /t/ (cf. *nought, naught(y)* below). Alternatively, it obtains from *laat(a)* 'not' where /l/ became /n/.
- 5) *Ill-* may derive from either a (a) reduced Arabic *illa* 'not, except' or (b) reversed *la* 'no' where /a/ raised to /i/. (Cf. *ill* and *ail* v. *all* from Arabic *3aleel* 'ill' where /3/ was dropped and *al* 'the' via lexical shift (Jassem 2012d).)
- 6) *A-* may obtain from (a) a reduced Arabic *la* 'not' where /l/ was dropped (cf. Cockney *miuk* 'milk' and *miyen* 'million') or (b) *a-* 'not in Syrian 'Nusairi/Alawi' Arabic' as in *a-katab* '(he) not-wrote'.
- 7) *Anti-/ante-/anto-* 'before' is from Arabic (a) *amaam* 'in front of, before', *imam(at)* (n) 'being in the front, leader(ship)' in which /m/ became /n/ or (b) a reordered *aqdam/quddam* 'before' where /m/ became /n/ while /q & d/ merged into /t/.
- 8) *Mal-* (Latin *male* 'bad, poor, evil, wrong') derives from (a) a reversed Arabic *la'eem* 'evil, bad', (b) *malee2* 'good, salty' via lexical shift (antonymy) and /2/-loss, (c) *maal* 'leaning, declined', (d) a reversed *lam(ma)* 'not', or (e) a reduced *mala* 'not'.

(Cf. *mile* from Arabic *meel* 'mile' or *miat* '100' where /t/ became /l/ (Jassem 2012a), *mail* from Arabic *3ilm* 'news' via reversal and /3/-deletion, *lame* from Arabic *mayel* 'lame, declining' in reverse, *lime* from Arabic *male2* 'salty' via reversal and /2/-deletion, *mule* from Arabic *2imar* 'donkey' via /2/-deletion and the change of /r/ to /l/; all are similar in form but different in meaning in both English and Arabic.)

- 9) *Mis-* (from Latin *minus* 'less' via French *més-* 'lack' as in *mésintelligence*) comes from Arabic (a) *naqiS/manqoos* 'lack' where /n/ turned into /m/ while /q & S/ merged into /s/, (b) *mish* 'not, nothing' where /sh/ became /s/, or (c) a reduced *musee* 'one doing wrong'. (Cf. *mis-*, *miss* 'forget', and *Miss* 'young lady' v. Arabic *musee* 'one doing wrong', *nasa* 'forget' and *(a)nisa* 'wom(a/e)n' where /n/ changed to /m/.)
- 10) *De-* 'down, down from, from, off, concerning in Latin' (Harper 2012) comes from Arabic (a) *doon* 'down' in which /n/ merged into /d/ or (b) a reduced *ta2t* 'down, under' where /t & t/ coalesced into /d/ while /2/ was deleted (cf. *dis-* below); French *de/du* 'of' is from Arabic *dh(i/u/a)* 'of' where /dh/ became /d/ (Jassem 2012c). (For other uses, see Jassem 2012e-f).
- 11) *Dis-* 'apart, in a different direction, between' (Harper 2012) derives from (a) Arabic *Did* 'against' where /d/ turned into /s/ or (b) a reversed *shatta* 'apart, diverse' where /sh & t/ became /s & d/ each (for further details, see Jassem 2012e-f).
- 12) *-less* and Arabic *laisa* 'not' are identical cognates. As a full word, however, it comes from (a) a reversed Arabic *qaleel, aqal* (my accent *galeel, jil(eel)*; Qassimi Arabic *dzil(eel)*) 'little, less' in which /q/ became /s/ or (b) *laat(a)* 'no, reduced' where /t/ became /s/. (Cf. *laisa/laata* in Arabic with *less/little* in English (see Jassem 2012f).)
- 13) *Ex-* is from Arabic *aqSa/qaaS* 'out, far' where /q & S/ merged into /s/.
- 14) *Down* is from Arabic *doon* 'down'.
- 15) *Under* comes from *doon* above and related *adna* 'lower' via reordering and /r/-split from /n/ or from *in2adar* 'go down' where /2/ was deleted.

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- 16) *Contra* (*contrary, counter, encounter, pros and cons*) (from Latin *con* 'with, together + *ter* 'zero comparative degree' (Harper 2012)) comes from a reversed Arabic *ma3a* 'with, together' in which /m & 3/ changed to /n & k/ each. Alternatively, it comes from Arabic *qaTi3* 'counter, against' in which /q & 3/ became /k & n/ each while /T/ split into /t & r/.
- 17) *Semi* comes from a reversed Arabic *niSf* 'half' where /S & f/ merged into /s/ while /n/ became /m/.
- 18) *Or* comes from Arabic *ghair* 'not' in which /gh & r/ merged into /r/.
- 19) *Nought* (*naught(y)*), which consists of *na* 'not' plus *aught* 'anything' or *ought* 'zero, cipher' in Old English (Harper 2012), derives from the Arabic compound *mashai* (*ma sheet* in Damascus Arabic) 'nothing' in which /m & sh/ became /n & g/. Alternatively, it comes from Arabic *nuqT(at)* 'dot, zero, nothing' where /q/ developed into /g/; *dot* 'nought, point' is a further reduction of *nuqT(at)* where /n/ became /d/ while /q & T/ merged into /t/.

In German, *nicht* is a cognate of English *nought* and/or *nawiht*, whose Arabic cognates have just been settled. German *kein* and Arabic *kalla* 'no' are identical cognates where /l/ became /n/. In French *ne --- pas*, *ne* is like English *no* above while *pas* obtains from Arabic *ba3d* 'yet' where /3 & d/ merged into /s/ or *batta(tan)* 'never' where /t/ became /s/, which follow negative particles like *ma nimt ba3d* 'I haven't slept yet'.

- 20) *Never* (Old English *ne* 'no' + *æfre* 'ever, always, at any time' (Harper 2012)) comes from Arabic *3aSr* 'time' where /3 & S/ merged into /f/ or *dahr* 'time' in which /d & h/ merged into /f/ (cf. Jassem 2012e). Spoken Arabic (*bi*)-*nob(at)* 'never' is likely where /b & t/ became /v & r/ each.
- 21) *Barely* (Old English *barlice* 'openly, clear, public') comes from Arabic *barra(ni)* 'outside'. The new negative meaning is probably from (a) Arabic *bila* 'without' where /r/ split from /l/, (b) *bizra* 'seed' in which /z & r/ merged, or (c) *ibra(t)* 'needle', the last two of which signaling 'smallness'. (Cf. *barley* from Arabic (*al*)-*burr* '(the)-wheat' via lexical shift and resyllabification.)
- 22) *Just* 'merely, barely' is from a reordered Arabic *faqaT* 'only' in which /f & q/ turned into /s & j/; *just* (*justice*) 'fairness' comes from Arabic *qisT(as)* 'justice' in which /q & s/ merged into /j/; *just* as in *just* (right) *now* is from a reduced Arabic *issaat* (i.e., *dhi* 'this' plus *saa3at* 'hour' where /dh/ assimilated into /s/) 'this hour' in which /i/ became /j/ (cf. *Jesus* from Arabic *3eesa* 'Jesus' in which /3 & s/ merged and /ee/ became /j/ (Jassem 2012b)). Thus the different senses derive from formally similar but semantically different Arabic cognates.
- 23) *Yet* is from Arabic *qaTT* 'no(t)' in which /q/ turned into /y/ via /j/ while /T/ into /t/. Both cognates occur in negative contexts, following *not* and Arabic *ma/lam*.
- 24) *Hardly* 'in a hard manner, with great exertion or effort' from Old English *hardlice* 'stern, severe, hard' (Harper 2012), comes from a reordered Arabic *3atr* 'hard, severe' in which /3 & t/ passed into /h & d/ each or *3arraT* 'harden' in which /3 & T/ turned into /h & d/ each.
- 25) *Rarely* (*rare, rarity*) comes from Arabic *nadir* 'rare' in which /n & d/ merged into /r/. (Cf. *rear/arrears* from Arabic *wara* 'behind, rear' where initial /r/ is a copy; *rear* 'graze' from Arabic *ra3a* 'graze' where /3/ became /r/; *air* from a reversed Arabic *ree2*

- 'air' or *Zarr* 'hot air' where /z/ was dropped; and *reek* from *ree2* 'air' where /z/ became /k/. All are formally similar but semantically different.)
- 26) *Seldom* (Old English *seld(a/u)n* 'rare') derives from Arabic *qillat-un* 'littleness-nom.' where /q & t/ turned into /s & d/ each.
 - 27) *Scarcely* 'restricted in quantity' (from Latin via French *scars* 'small') is from a reordered Arabic *Sagheer(at)* 'small' where /gh/ split into /k & s/.
 - 28) *Nil* (*nihilism*, *annihilate*, *annihilation*) (from Latin *nihil(um)* 'nothing' (*ne* 'no' + *hil(um)* 'small thing, trifle') comes from Arabic *qal(eel)* 'little' in which /q/ turned into /h/. (Cf. *willy-nilly* from spoken Arabic *ya lee ya malee* 'either for me or not for me' perhaps.)
 - 29) *Negate* (*negation*, *negative*) (from Latin *negationem*, *negare* 'denial, deny' via French *negacion*) obtains from Arabic (a) *naha* 'forbid, prohibit', (b) *ankar*, *nukr(an)*, *nakirat* 'deny, denial, unknown' in both of which /h & k/ became /g/, or (c) *naqaD* 'reject' in which /q & D/ changed to /g & t/ each; the likeliest is the first based on the root *negare*.
 - 30) *Refuse* (*refusal*) and *refute* (*refutation*) come from Arabic *rafaD* 'refute' in which /D/ turned into /s/ or /t/.
 - 31) *Reject* (*rejection*) (Latin *rejectus* 'thrown back, tossed back' via French *jeter* 'throw, thrust') is from Arabic (a) *qadhf* 'throw, toss (back)' where /q/ became /j/ while /dh & f/ merged into /t/, or (b) *rashaq(at)* 'throw away' in which /sh & q/ turned into /j & k/. (Cf. *inject(ion)*, *deject*, *eject*, (*dis*)*sect(ion)* from Arabic *shaqq(at)* 'cut' where /q/ became /k/ or /s/; *abject/dejected* from Arabic *shaqi(at)* 'abject, miserable'; *object* from Arabic *shaaqqa/shaaqaq* 'object to'; *project* from Arabic *qathf* 'throw'; all are formally similar but semantically different.)
 - 32) *Deny* (*denial*), which consists of *de-* 'verb suffix' plus *-ny* (*ne* 'not'), comes from Arabic *ta-* 'verb suffix' where /t/ became /d/ (Jassem 2012f, 2013a) and *ma/la* 'no' above. Alternatively, it obtains from *na'a*, *na'i* (n) 'keep away, avoid', though less likely.
 - 33) *But* derives from Arabic *bas*, *bal* or *baida* 'but' where /s, l & d/ became /t/.
 - 34) *Other* comes from Arabic *thaani* 'next, other' in which /n/ changed to /r/ (cf. Jassem 2012a).
 - 35) *Against* (Old English *agan*, *angean*, *agenes*, *agen* 'toward, opposite' (Harper 2012); German *gegen*) comes from a reordered Arabic *na2wa* 'towards' in which /z/ changed to /g/.
 - 36) *Opposite* (*opposition*, *position*, *posit*, *pose*, *posture*, *opponent* from Latin *opponere* (*ob* + *ponere* 'put, set, place (against)') obtains from Arabic (a) *bana/binaiat* 'build/(ing)', (b) a reversed *naba/naabi* 'come up against', or (c) *naSab*, *naaSib* (n), 'stand (against)' where /S/ merged into /n/.

Pose (*pause*, *post*, *position*, *opposition*, *opposite*; *suppose*, *propose*) (from French *poser* via Literary Latin *pausare*, Greek *pausis* (Harper 2012)) 'halt, pause, puzzle, confuse, put in a certain position; suggest, propose' come from three formally similar but semantically different Arabic cognates: (a) *Zabas* 'pause, stop, jail', (b) a reordered *Zasab* 'think, suppose' in both of which /z/ merged into /s/ or was dropped, and (c) *shabak* 'entangle, confuse' via shortening and the merger of /k & sh/ into /s/.

Post 'after, send/mail, doorpost' has the same Arabic story: (a) *ba3d* 'after' in which /3 & d/ became /s & t/ each, (b) *ba3ath* 'send, mail' in which /3 & th/ became /s & t/ each, and a reordered *3ataba(t)* 'doorstep/post' in which /3/ became /s/.

- 37) *off* (Old English *of* 'away (from)', German *ab* 'off, from, down') obtains from Arabic *fī/bi* 'in, with' via lexical shift (cf. *off*-final English swear words like *fu--/pi-- off* with the same *fī*-final ones in Arabic such as *Tu--/zu-- fee*). Alternatively, in *hands off, cut off*, it derives from Arabic *waaf(i)* 'enough', *waqaf* or *kaffa* 'stop' in which /q & k/ merged into /f/.

In sum, the total number of the main negative particles (16) and words (25) above is 41, disregarding their variants and derivatives. All have Arabic cognates. That is, 41/41 X 100 = 100%, which means that they are dialects of the same language (see 5. below).

5. Discussion

The results above support Jassem's (2012a) studies of numeral words, common religious terms (Jassem 2012b), personal pronouns (Jassem 2012c), determiners (Jassem 2012d), verb *to be* forms (Jassem 2012e), inflectional 'gender and plurality' markers (2012f), and derivational morphemes (Jassem 2013a) in English, German, French, Latin, Greek, Sanskrit, and Arabic which formed true cognates. In all, the percentage of shared vocabulary between Arabic and English, for instance, was 100%, which means that they belong to the same language (i.e., dialects), according to Cowley's (1997: 172-173) classification.

Jassem (2012f, 2013a) merit special mention because some affixes and words are common to all. In all studies, the same morphemes like *en, a, de-* may be used inflectionally (as suffixes), derivationally (as prefixes and suffixes) and negatively. Since such morphemes change form or pronunciation due to morphological causes (morphologically conditioning) such as derivation, grammatical category, word position, and so on, they are termed morphophonemes: i.e., phonemes with a grammatical function or morphemes with a different pronunciation. The result is morphophonemic rules (Jassem 2012f, 2013a), for which a brief summary is given below.

- i) The *n*-based affixes had several functions as (a) negative prefixes and independent words in here (4.1-4 above), (b) derivational noun and verb suffixes and prefixes with *n-, m-, r-,* and *l*-forms being phonetically conditioned in English, German, and French (Jassem 2013a), and (c) inflectional markers of plurality (in Arabic, English, German, and French) and gender (masculine in Arabic but feminine in English, German, and French) (Jassem 2012f; also cf. 2012c).
- ii) The affix *a* was used in English and Arabic as a (a) negative prefix here (4.6 above), (b) derivational prefix for making verbs (Jassem 2013a), and (c) inflectional 'feminine gender and plurality' suffix (Jassem 2012f).
- iii) The affixes *de-/dis-* and Arabic *Did* 'against' functioned as (a) negative prefixes in this work (4.10-11 above) and (b) derivational verb markers as in *describe, discuss, dissect, dissolve, wanted* (cf. *learnt, wept*) whose Arabic cognate is the verbal prefix *ta-* as in *takallam* 'talk' (Jassem 2013a) (cf. inflectional Arabic *-at* and its English cognates *-ate/-s* in Jassem (2012f, 2012c)).
- iv) *mal* in English, French, and Latin and *lam* in Arabic are identical cognates (4.8 above).

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- v) The full negative words like *negate*, *deny*, *opposite*, *reject* (4.18-37 above) are identical cognates in Arabic and English.

Thus this study demonstrates over and over again the adequacy of the lexical root theory for the analysis of the close genetic relationships between the above languages in all the investigated areas where the percentage of shared words in general was 100% which means that they are dialects of the same language according to Cowley's (1997: 172-73) classification. Therefore, the main construct of the lexical root theory that states that Arabic, English, German, French, Latin, and so on are not only genetically related but also are dialects of the same language is empirically sound and verifiably true.

Concerning the five applied analytic procedures, all operated neatly. Lexicologically, the lexical (consonantal) root was an adequate, analytic tool in relating negative morphemes to each other. For example, English *in-/un-* have been successfully traced back to their Arabic root cognates *in/lan* 'no' (4.1-4 above) and so have *de-/di(s)-* to *Did* 'against' and/or *doon* 'down' (4.9-10 above) by isolating the root 'consonants' and overlooking the 'precise quality of' vowels (cf. Jassem 2012a-f, 2013a). The etymology or historical origin of words or morphemes was very useful in tracing word form and meaning; for instance, English *mis-* came into Middle English from Latin via French (Harper 2012), whose Arabic cognate is *manqooS/naqiS* 'minus' where /q & S/ merged into /s/.

Phonetically, enormous changes affected Arabic consonants especially not only in English, German, French, and Latin but also in Arabic varieties themselves (e.g., Jassem 1993, 1994a, 1994b, 2012a-f, 2013a). The main sound changes here can be summed up as follows:

- (a) Arabic /D/, an emphatic /d/, and /d/ in *Did* 'against' changed to /d & s/ in *dis-* (cf. Jassem 2013a).
- (b) Arabic /n/ in *in* 'no' passed into /l, r, & m/ in *illogical*, *irregular*, *impossible* (cf. Jassem 2012g) or merged into /d/ in *de* from Arabic *doon* 'down'.
- (c) Arabic /m/ in *ma* 'no' turned into /n/ in *no* (cf. Jassem 2013a).
- (d) Arabic /l/ in *la* 'no' changed to /n/ in *no* (cf. Jassem 2013a).
- (e) Arabic /h/ in *naha* 'forbid, prohibit' became /g/ in *negative* or Ø as in *in* from Arabic *huna* 'here'.
- (f) Arabic /S/, an emphatic /s/, in *niSf* 'half' became /s/ in *semi*.
- (g) Arabic /f/ in *niSf* 'half' became /s/ in *semi*.
- (h) Arabic /2/, a voiceless pharyngeal fricative, in *ta2t* 'under' changed to Ø in *de*.
- (i) Arabic /3/, a voiced pharyngeal fricative, in *3atr/3arraT* 'hard' passed into /h/ in *hard* or /r/ in *rear*.
- (j) Arabic /t/ in *ta2t* 'under' became /d/ in *de*.
- (k) Arabic /gh/, a voiced fricative velar, in *ghair* 'other, or' became /r/ in *or*.
- (l) Arabic /q/, a voiceless uvular stop, in *qal* 'little' became /s/ in *seldom* or /h/ in *nihilism*.
- (m) Vowel shift happened in all; for example, the low central vowel /a/ in *ma/la* 'no(t)' became mid back in English *no* (cf. Jassem 2012a-f, 2013a).
- (n) Phonetic processes resulted in assimilation, dissimilation, reversal, reordering, merger, loss, resyllabification, and so on. Besides, the changes were multi-directional, lexical, and cyclic (see Jassem 2012a-f, 2013a).

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Morphologically and grammatically, all the negative morphemes here and their inflectional (Jassem 2012f), and derivational counterparts or variants (Jassem 2013a) had Arabic cognates.

Finally, semantically, the same or similar patterns were replicated as reported in Jassem (2012f, 2013a). Semantic stability was evident in all negative morphemes and particles like *in-*, *no*, *de-/dis-*, and *less* in English, French, and German, which still retain the same or similar meanings or functions as their Arabic cognates (4.1-12 above). Semantic shift affected Arabic *in/lan* 'no/not' whose function shifted from an independent negative word to a prefix in English, German, and French as in *unhappy*, *inhuman* (4.1-4 above); Arabic *ghair* 'no, other than' shifted to *or* in which /gh & r/ merged (4.18 above). Morphological split affected *dis-/de-/-ed* which function inflectionally (Jassem 2012f), derivationally (Jassem 2013a), and negatively (4.10-11 above). Lexical convergence occurred in *mal-* which might derive from (i) Arabic *lam* 'not', (ii) *maali2* 'salty', or (iii) *maal* 'leaning' (4.8 above); *ill-* might come from *illa* 'not, except' or *la* 'not' or *3aleel* 'ill' (4.5 above); *no* is from *ma*, *la* or *in*; *(u/i)n-* is from *ma*, *in* or *lan* (4.1-4 above). Semantic multiplicity is manifested in the multiple usage of some morphemes negatively, derivationally and inflectionally; e.g., *n-* forms mark (i) verbs, (ii) nouns, and (iii) adjectives (Jassem 2013a), (iv) plurality and (v) feminine gender (Jassem 2012f), and (vi) negation here (4.1-4 above). *Less* and *just* have several meanings, all of which have Arabic cognates (4.12, 22 above). Semantic change happened to Arabic *in* 'no' which is used as a negative prefix and preposition in English (4.1 above). Finally, morphological variability was evident in the presence of several negative variants, which are utilized in different ways in all the languages above, e.g., *in-*, *un-*, *de-/dis-/dys-*, *-less*, etc. in English (4.1-11 above).

As regards the relationship between form and meaning, all the above negative morphemes like *in-*, *un-*, *ill-*, *a-*, *-less*, *mis-* and *mal-* in Arabic, English, German, and French have the same or similar forms and meanings: i.e., true cognates, with Arabic being their main origin (4.1-11 above). Some are formally different but semantically similar such as *mis-* (Latin *minus*) 'not' which derive from Arabic *naqiS/manqooS* 'minus' where /q & S/ merged into /s/ (4.9 above). Formally similar but semantically different particles or words were accounted for such as *mal-*, *mile*, *mail*, *mule*, *lame*, and *lime*, which all have Arabic cognates (4.8 above) (cf. Jassem 2012c).

In light of the above, therefore, all the foregoing negative particles in Arabic, English, German, French, and Latin are true cognates in the sense of having the same or similar forms and meanings. Arabic can be safely said to be their origin all, for which Jassem (2012a-g) offered some equally valid reasons which the curious reader can refer to. Meanwhile, it suffices to mention Arabic variety and multiplicity (e.g., *in* 'no', *ma* 'not', *la* 'no', *lan* 'no', *lam* 'not') as opposed to English simplicity (e.g., *in-/un-/no*) as one such major reason.

6. Conclusion and Recommendations

The different negative 'particular and lexical' morphemes in English, German, French, Latin, Greek, and Arabic make up identical cognates, some of which (e.g., *n-* based ones) have multiple functions: negative, inflectional, and derivational. Because they change form

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according to phonological, morphological and lexical factors or conditions, they are technically called morphophonemes (Jassem 2013a). The main ideas of this paper can be summed up as follows.

- i) The *n*-based morphemes (*in-*, *un-*, *no*, *not*) in English, German, and French and *in/ma* 'no' in Arabic are identical cognates negatively (this paper), inflectionally (Jassem 2012f), and derivationally (Jassem 2013a) where /n/ turned into /m, r, & l/ also (4.1-4 above). As a rule, one can state that *in* and its variants may function derivationally, inflectionally, and negatively in all such languages. Using /n/ as a pivotal consonant makes it easier to generalize than would be otherwise (Jassem 2013a).
- ii) The *l*-based affixes like English *ill-*, *a-* as in *ill-timed*, *asocial* and Arabic *la/illa* are identical cognates where /l/ merged into *a* (4.5-6 above).
- iii) The *d*-based particles like English *d(i/y)s-/de-* as in *deactivate*, *dismantle*, *dysfunctional* and Arabic *Did* 'against' (4.10-11 above) are identical cognates where /d/ became /s/ (cf. Jassem 2012c); similarly, English *de-* and Arabic *ta-* are identical inflectional (Jassem 2012f) and derivational (Jassem 2013a) cognates where /t/ became /d/.
- iv) The *m*-based affixes like English *mal-/mis-* and Arabic *lam/naqiS* are identical cognates where /n/ became /m/ and /q & S/ merged into /s/ (4.8-9 above).
- v) All the negative full words are identical cognates like *less* and *laisa* 'not', German *kein* 'no' and Arabic *kalla* 'no' where /l/ changed to /n/ (4.12-37 above).

In conclusion, the lexical root theory has proven over and over again its applicability to and adequacy for the analysis of the close genetic relationship between negative morphemes in Arabic, English, German, French, Latin, and Greek. The multiple uses of the same morphemes such as *in* and *de-* in all point to a common genetic source at the top of which Arabic stands firmly. To consolidate these findings further, research is required into all language levels; moreover, their application to language teaching, lexicology and lexicography, translation, cultural (including anthropological and historical) awareness, understanding, and heritage (Jassem 2012a-f, 2013a) is badly needed. Such research is endless, interesting and useful, whose results will hopefully bring about unity in a deeply disunited, biased, and prejudiced world in which learning a language and, consequently, adapting to a new culture will become a lot easier eventually.

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The Impact of Computer-Assisted Language Learning in Teaching Vocabulary

Maryam Bahadorfar, Ph.D. Scholar

Abstract

This study aims at determining the effectiveness of using technological aids including computer in foreign language vocabulary acquisition. Firstly, it gives a brief introduction to the current situation of vocabulary learning and teaching in Iran, and then introduces vocabulary acquisition with CALL. There are some strategies that will help learners. There are many models of teaching and learning English using CALL such as: the audio-lingual model, the cognitive-code model, and the humanistic model.

Key words: vocabulary acquisition; CALL (Computer-Assisted Language Learning).

1. Introduction – Vocabulary Learning

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When you learn a second language, you have to memorize its words and learn its rules. That is why learning a second language can be difficult and it sometimes makes us feel frustrated. Recognizing this fact, many people try to use many ways in learning English as a second language in order to make learning English easier and more joyful. One of the ways is utilizing a computer as a medium which can help us learn English effectively. We usually call it as Computer Assisted Language Learning (CALL).

Vocabulary is an important segment of any language as well as the basis of linguistic abilities. For most students in learning a foreign language, the first headache or difficulty they meet is usually remembering words. The size of vocabulary is an important standard to evaluate a learner's English level. Without adequate vocabulary knowledge, a second language learner's conversational fluency and reading comprehension will meet difficulties. Vocabulary is the foundation of a language.

Evans (1978) indicates that vocabulary has an important role in the development of the four language skills: speaking, listening, reading and writing. He claims that vocabulary can provide clarity and can enable the speaker to diversify language. He further points out that wrong use of vocabulary can lead to misinterpretation, while correct use of vocabulary makes it easier for people to read and write better, understand the main ideas and speak correctly. In this respect, Allen (1983) indicates that the reason for the importance of vocabulary is that: "through research, the scholars are finding that lexical problems frequently interfere with communication; communication breaks down when people do not use the right words".

Vocabulary Teaching and Learning – A Weak Point

But in language learning and teaching, vocabulary has always been a neglected and weak point. Wilkins (1972) said, "Linguists have had remarkably little to say about the vocabulary and one can find few studies which could be of any practical interests for language teachers". A decade later Meara (1982) mentioned that vocabulary had received short shift from applied linguistics. Ellis (1995) expressed the view that the situation had not changed significantly. But unfortunately students sometimes do not use context clues

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properly because of their poor vocabulary knowledge and low vocabulary capacity. Moreover, Parry's (1993) study found, a single context hardly gives enough information for an L2 reader to guess the full meaning of a word. In a word, a certain amount of vocabulary capacity is the necessity in second or foreign language acquisition. Learning, memorizing and application of vocabulary runs through the whole process of language learning for students.

Situation in Iran

Most Iranian students have been learning English as a foreign language for at least 6 years in secondary and high school, but they are still not able to express themselves adequately and fluently in English or understand what people say easily. The problem may lie in the traditional teaching method. For example, in a typical Iranian classroom, what students did first of all was to follow the teacher reading new words and expressions by repeating again and again. Then the teacher explained the new words one by one, until students felt bored and exhausted. In order to expand their vocabulary, students spent much time repeating and reciting words without knowing clearly how to use them correctly in practice. Many of them could read and understand English, but found it difficult to speak and listen to it. But recent years, with the development of new information technology, especially computer's application in teaching makes it possible to get rid of the negative aspects that come from social, cognitive and material conditions. At the same time, it can improve the students' vocabulary learning.

2. CALL and Vocabulary acquisition

CALL has recently become a focus of researchers who believe that computers are an effective teaching aid. Researchers have long been interested in examining the effects of pictorial and verbal annotations on L2 vocabulary learning, and have found that processing supportive information such as pictures and translations enhances language learning. In this respect, Chun and Plass (1996) emphasize the idea that associating lexical items with different types of media fosters richness of recall cues and increases the retention. They examined the impact of multimedia annotations on L2 vocabulary acquisition and

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comprehension from a reading passage using a written production and a recognition test. The test items paralleled the modality in which the information was presented. They found that students performed better on both types of tests when both pictorial and written annotations were presented than when single or no annotations were accessed during reading. In addition, Jones and Plass (2002) found that the combination of two annotation types allowed for more than one retrieval route to the information in long term memory. They reported that those students who accessed both pictorial and written annotations as they listened to a multimedia-based aural French text performed better on a written vocabulary recognition test than those who accessed single annotations or no annotations at all.

There are several new features frequently used in CALL, including **hypertext**, **hypermedia** and **multimedia**.

Hypertext (Christopher & David, 2005, p. 37) refers to links among textual items, often indicated by key words set in underlined blue type. **Hypermedia** (Christopher & David, 2005, p. 38) refers to similar links as those used in hypertext, but instead of simply linking text to text, hypermedia involves linking various media such as sound, images, animation and/or video. **Multimedia** (2005, p. 39) refers to many of the same ideas associated with hypermedia, but hypermedia might only use of two types of media (e.g. text+sound or text+photographs).

Multimedia tends to features several media types including text, images, sound, video and/or animations. Multimedia can promote students' vocabulary acquisition for its increasing students' autonomous abilities in learning. It can also lower students' awareness of teacher-centered feelings in classroom.

Hoogeveen (1995) concluded several good points by using computer in language learning. Firstly, learners respond to computer in a complex way and give the feeling of experiencing information instead of simply acquiring it. Secondly, the man-machine is more friendly interaction. Thirdly, students feel more fun from computer and learning becomes a happy process.

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3. Vocabulary Acquisition Strategies with the Help of Computer

It is necessary for teachers to encourage students to develop their own vocabulary strategies and to improve and manage their learning with extensive reading and listening outside the class in order to gain the required exposure to vocabulary and build up word knowledge.

3.1 CALT for vocabulary's Pronunciation, Morphology and Semantics

Effective language instruction should be of multisensory training in nature. That is, the lectures include students' visual, auditory and tactile activities. Students whose sensory channels are matched with learning resources and learning environments would achieve statistically higher academically. Computer makes it possible for students to acquire vocabulary from sound, font/spelling and meaning of one particular word.

For the activities that can match students' visual preferences, traditionally language teachers may write the material on the blackboard, or use teaching aids, such as handouts, pictures, films, charts, or even real objects in class. Students will learn more when information is adopted by a variety of learning channels than when only a single channel of learning is used. Nowadays, with the help of technology, one particular word can be learned through sound, picture and even three-dimensional animation. CD-ROM can promote vocabulary acquisition, pronunciation and independent learning and has a major contribution to make to the development of language teaching and learning.

3.2 Context

Vocabulary learning is more than the study of individual words. By learning words in context, the learner has to learn additional linguistic, semantic, syntactic, and collocational features of a word. Watching video programs or movies in English is the most common self-initiated contextualized vocabulary learning activity, while listening to audio streaming programs and playing computer games in English are also popular activities. Online-chatting

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in English can also increase students' awareness of the language. Aided by pictures, sound and flash animation, teachers could offer abundant interesting learning materials for learners.

3.3 Vocabulary game

For most English learners, it is frustrated and boring when reciting vocabulary. If an instructor uses appropriate vocabulary games to help students to learn, study may get the twice result with half the effort. On line games such as (vocabulary.co.il) is the perfect resource for practicing and growing the word power of students .Another program which is helpful is; (spellingcity) that lets the students create their own spelling lists.

4. Models of Language Teaching Using CALL

Relate to the software that is available in the field, there are many models of language teaching that can be applied in the teaching learning process. Since the supply of programs available changes so rapidly, there are five computer programs in the following models of language teaching which can be used by an English teacher in teaching English to their students: Encarta, Cambridge Advanced Learner's Dictionary, Hangman, Scrabble, and Longman Student.

4.1. The Audio-Lingual Model

The audio-lingual model claims that language is learnt through the acquisition of association of **stimulus and response**; the aim of teaching is to get students are able to use structure, etc. automatically and unthinkingly in the appropriate situation. The techniques employed are usually drills in which students practice a particular, structural or lexical point until it becomes automatic, and exploitation activities which encourage transfer to less controlled situation. The prime belief of audio-lingual is that language is primarily speaking and listening, and that reading and writing are secondary skills that should be postponed as long as possible; the computer, however, depends almost totally on written language. For example, by using Encarta, not only can the students find the meaning of a word, but he or

she can also hear how the word is pronounced. And by using Longman Student, the student can do listening exercises.

4.2. The Cognitive Model

The computer use of drills has in fact shaded over into another model, that of cognitive-code learning. For the advantage of the computer over the language is that it can analyze what the student writes, see if it conform to the expected answer and tell the students minimally if he is right or wrong, maximally the nature of his mistakes. Correction by the computer is only an advantage if we believe that the student learns by conscious awareness as in cognitive learning. If the student is encouraged to do exercises in Cambridge Advanced Learner's Dictionary, or Longman Student's Dictionary, the computer will tell them if he is right or wrong. Some games in Encarta Kids, such as Word Scrabble and Spelling Bee can be useful for the student. Besides that, trying out Hangman and Scrabble can be a way for the student to exercise their English vocabularies.

4.3. The Humanistic Model

The other popular model of language teaching is the humanistic, a collective name covering the somewhat different of methods united by their emphasis on their value of second language learning to the individual's own development, whether cognitive, emotional, social or whatever. The aim of humanistic teaching is not to relate the students to the use of language in the external world but to develop the internal world of his or her personality and mind. Computer puzzles and word games popular on computer, such as exercises in Cambridge Advanced Learner's Dictionary, Word Scrabble, and Spelling Bee (Encarta Kids) can be useful for the students to develop the internal world of his or her personality and mind. Besides that, the students can also experience the exciting games of Hangman and Scrabble.

5. Conclusion

Computer technology has taken its rightful place as an important element of language learning and teaching. Different types of instructional modes, approaches, vocabulary

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building activities and skills proved to be effective in developing children's and college students' vocabulary in L2 CALL environments. Practicing vocabulary in context, combining vocabulary with reading and writing activities, and providing the students with different lexical information about the words enhanced children and adult students' vocabulary acquisition. Integration of different forms of technology such as specially designed software, a Tutorial CALL, concordances, online lessons, multimedia contexts, interactive multi-modal materials, online dictionaries and e-books helped the student learn L2 vocabulary better.

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**Effect of Technology on Distance Learner Achievement:
A Case Study of AIOU**

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Abstract

The rapid growth of technologies has influenced the way in which education is delivered and experienced. In distance education, the use of technology is essential. Distance education is a powerful and growing force in education at the university level. The globalization of distance education provides many opportunities for the developing countries for the realization of their education system-wide goals. Two main factors have led to an explosion of interest in distance learning: the growing need for continual skills upgrading and retraining; and the technological advances that have made it possible to teach more and more subjects at a distance. The world of technology is being reshaped by global trends such as convergence, increased bandwidth, enhanced multimedia capabilities, miniaturization, environmental variations, increase mobility, enhanced processing power, more powerful cognitive tools and reduced cost. These trends support transition across four generations in distance education models and associated delivery technologies.

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This study aimed at the following:

- 1) To identify the access of technology for distance learner.
- 2) To explore the use of technology relating to the achievements of distance learner.
- 3) To identify the problems faced by distance learners in the use of technology.

A sample of 60 students of M.Phil. and Ph.D. was taken. A questionnaire was used as a research tool for the collection of data. Collected data were analyzed by percentage, mean score and correlation.

Main findings of the study revealed that use of technology enhances the quality of learning and improves the learning skill of the distance learner. Use of technology in education increases motivation and collaborative learning encourages competition. It was recommended that the distance course developer, instructor, or teacher should focus on designing online learning environments that support exploratory and dialogical learning. Exploratory and dialogical learning environments engage learners in learning activities that require collaboration, communication, social interaction, reflection, evaluation, and self-directed learning.

Key words: Distance education, Technology, Achievement, Distance Learner

Introduction

We all know that modern age is a technological age. Many learners improve their education through distance education. Today distance education is imparted through online education in many universities because it could be cost-effective, carried on using fast communication methods and automated performance measurement mechanisms that enhance the quality of learning.

In distance education the use of technology is essential. It is not a supplement to the traditional forms of distance education: correspondence and telecommunications-based education.

The history of distance education reaches back to the 18th century when it took the form of correspondence education first. It was supplemented later by telecommunications-based distance education, which relies on a synchronous form of delivery and interaction between tutors and students. Roughly 65 percent of educators surveyed also believe that students are more productive today than they were three years ago due to the increased reliance on technology in the classroom.

Many different types of technology can be used to support and enhance learning. Everything from video content and digital moviemaking to laptop computing and

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handheld technologies (Marshall, 2002) has been used in classrooms, and new uses of technology such as podcasting are constantly emerging. Research indicates that computer technology can help support learning and is especially useful in developing the higher-order skills of critical thinking, analysis, and scientific inquiry "by engaging students in authentic, complex tasks within collaborative learning contexts" (Roschelle, Pea, Hoadley, Gordin & Means, 2000; Means, et. al., 1993). The application of new ICT concepts to support learning and teaching and provide Internet access to student administrative processes, has improved distance education.

In this age of science and technology distance educators should not demolish trees for making print-based materials for the readers, because it is expensive to purchase and there is also high risk of miscommunication in asynchronous media. On the other hand the use of internet and latest technology can be cost-effective and there are less chances of miscommunication in synchronous way.

Distance Learner

The concept of the self-regulating place-bound, adult, self-motivated, disciplined self-starter, and goal-oriented learner has been very popular. It largely characterized the classic distance education learner. It is now being challenged with socially mediated online learning activities that de-emphasize independent learning and emphasize social interaction and collaboration. Online learners must understand and value the learning opportunities and the collaborative and communication technologies in order to engage actively and constructively in learning.

In summary, the following characteristics and skills are perceived as critical to the success of the online learner:

- Having a strong academic self-concept.
- Fluency in the use of online learning technologies.
- Taking interpersonal and communication skills.
- Understanding importance of interaction and collaborative learning.
- Possessing an internal locus of control.
- Exhibiting self-directed learning skills.
- Exhibiting a need for affiliation.

“Competency in the use of online learning technologies, particularly communication and collaborative technologies, does not guarantee meaningful interaction, collaboration, and knowledge building in online learning environments”. (Lindblom-Ylanne & Pihlajamaki, 2003).

Academic Achievement

Academic achievement is a process of attaining predetermined objectives. The monitoring of learning achievements of students is one of the key component to assess Language in India www.languageinindia.com

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and to improve the quality of education. “Academic achievement is dependent on more than individual abilities and aspiration. Academic achievement is a function of study attitude of the students” (Hussain, 2006). Intelligence is not the only determinant of academic achievement. “High motivation and engagement in learning have consistently been linked to reduced dropout rates and increased levels of student success” (Kushman, Sieber, & Harold, 2000).

Factors Affecting Academic Achievement of Distance Learner in OLIVE

The following factors have a positive or negative effect on the academic achievement of learners:

1-Access of Web

“World Wide Web facilitates the online education which is defined as the communication and collaboration within an education context using technologies” (Piezon, Donaldson, 2005). The web was developed to allow collaborators in remote sites to share their ideas and all aspects of a common project.

Schneiderman (2000) states that “it requires support for (1) a wide variety of hardware, software, and network access, (2) diverse user populations that differ on such dimensions as age, disabilities, disabling conditions”.

2-Language Barrier

With literacy figures being low in Pakistan, familiarity with the English language is rare. Most of the population understands only Urdu which is the national language. The unfamiliarity with the English language presents a major constraint for Pakistan as Internet content in Urdu is scarce. Web sites that do offer Urdu content are slow to load because they contain scanned images of the Urdu script as there is no standard Urdu script for computers (Sayo, et al.).

3-Tutorial and Achievement

“The rising demand and growing consumer experience with flexible education programs to support career development and lifelong learning has increased people’s expectations for quality instruction, effective educational outcome, and finally satisfaction for learning” (Debourgh, 1999). Allen et al. (2002) and Wang (2003) argued that “In any educational institution, the satisfaction of a student can be determined from his level of pleasure as well as the effectiveness of the education that the student experiences”. “Students with higher levels of satisfaction towards various aspects of e-

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learning courses are reported to show considerably higher levels of learning than students with low level of satisfaction” (Fredericksen, 2000). In this regard, specifically “instructors of e-learning courses can increase their students' satisfaction by considering the primary factors of student satisfaction” (Ho, et al., 2002).

4-Study Material and Achievement

The ease and accessibility of online courses attract educators and students. Online learners conveniently study anytime and anywhere while accessing rich online resources through course website links. However, “Online learning inherently requires more cognitive resources than does face-to-face learning and places a cognitive load on online learners that may affect their learning achievement” (Bruggen, Kirschner, & Jochems, 2002; Brunken, Plass, & Leutner, 2003; Gerjets & Scheiter, 2003).

“Online learning involves activities such as accessing course websites, navigating multiple-linked materials, determining the relevance among hyperlinks, getting lost in cyberspace, and solving technical and Internet connection problems, all of which split the learner’s attention and increase extraneous cognitive load” (Harter, 1986; Marchionini, 1988; Nielsen, 1990). Information presented on multiple web pages and in two or more formats (e.g. text, graphic, audio, video, animation, etc.) is common in online learning.

5-Interaction and Achievement

Interaction is an important factor especially in Open University where students, teachers and teaching resources are away from each other in terms of time and place. “Interactivity in an online program is directly related with the amount of contact the student has with the instructor, with his peers, and with the course material” (Sherry, 1996). This interactivity and the roles of the students and instructors, changing from the traditional instructor-centered to learner-centered process, encourage the students to seek for answers and build their own knowledge from their own experiences. Interaction increased the student satisfaction and help them to achieve learning objectives and increase the achievement. Anderson (2002) refers to “interaction as a multifaceted concept and crucial component of educational process. Achievement is attaining and accomplishing something. It is something which someone has succeeded in doing especially after a lot of effort. Interaction and achievement are parallel to each other”.

Interaction does not just occur in online courses, it has to be intentionally built into the instructional plan for the course. Incorporating interaction into your course has the following benefits:

- Interaction builds a sense of community among the students, which leads to student satisfaction, maintenance, and increased learning.
- Interaction provides students with the feedback they need to determine.

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- Interaction exposes students to a variety of learning resources, including content materials and experiences and knowledge shared by other students.
- Interaction makes students become more actively engaged in the learning process, leading to higher levels of learning.

5.1- Learner-Instructor Interaction

“In an online learning environment, the instructor is required of a new set of skills for success since latest technologies bring as much change to instructors as they do to students” (Jones, 2003). Now, “the roles of the instructors change from being the primary source of students’ knowledge to being the manager of the students’ knowledge resources” (Romiszowski, 2004). Moreover, “In an effective online learning environment, instructor plays a central role. It is not only because of technology but practical accomplishment of the technology that has certain effects on learning” (Collis, 1995). “An instructor has a definite role to make the online environment successful. For this purpose, instructors must ensure required level of interactions and discussions with their students” (Hong et al., 2003).

However, “interaction is different in this environment” (Walker & Hackman, 1991) with “more emphasis on the instructor’s role as a mediator between the student and the materials” (Beaudoin, 1990) or “between the student and the technology” (Hillman et al., 1994). Therefore, “instructor must understand the increased diversity of learners, and then accordingly determine test formats, measurement practices, and assessment strategies” (Banerjee & Brinckerhoff, 2002), “which might persuade and motivate students to accept e-learning environment” (Selim, 2005).

“In e-learning, there are certain factors and conditions, which are closely related to the professional development of an instructor, and to enhance the teaching quality of instructors, it is necessary for the instructors to consider these factors” (Louden, 2000). Jensen (1993) conducted a study in which he collected data from students and instructors, and concluded that distance education requires a different set of skills and involves different responsibilities. According to Freeman (2010) “distance learning is an educational situation where the instructor and the students are separated by time, location, or both, and it can be either synchronous or asynchronous using a variety of distribution methods including technology.

According to many researchers, “the overall effectiveness and success of online education depends upon the interaction which is an essential element to a student learning” (Fresen, 2007; Moore, 1993; Northrup, 2001) “An online learning model is proposed in which an instructor and learners are separated by physical distance, and online delivery media are used to bridge the instructional gap. Moving into the information technology era, a wide range of instructional technologies facilitates online educators” (Huang, 2000). Finally, “the increase of communication and interaction between the students and their instructors in an online learning has a great importance” (Swan, 2002). The instructional activities give students the opportunity to receive

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information, motivation, timely feedback, mentoring and coaching. As the rubric annotations state, "Interactions between the instructor and the students are designed to facilitate students' understanding and mastery of the learning objectives. These interactions may be supportive (welcome and introduction messages, "about the instructor," weekly announcements) and instructional (direct instruction, assignment feedback, FAQs, etc. The communications between student and instructor may be one-to-one (personal emails) or one-to-many (forum postings, class announcements)."

5.2- Learner-Content Interaction

Learner-content interaction is where there is an active intellectual participation between the learner and the subject matter. Learner-content interaction is the most basic form of interactivity in distance education. In learner, presentations, podcasts, audio/video, hyperlinks, social networking, etc.). How will you design your materials to engage the learner? Knowledge changes in understanding and perspective of learner's mind and known as learner content interaction. Careful selection of materials and activities for online instruction can increase the content interaction the student interacts with the course materials. The learner gains and constructs knowledge by working with the subject matter. The instructional activities give students the opportunity to engage with the course materials in multiple ways and encourage active learning. There are many ways to present content to students and for them to engage with it. There are many alternative delivery methods (blogs/likelihood that learner-content interaction will help learners achieve course objectives.

5.3- Learner-Learner Interaction

Volery et al. (2000) suggested that "in order to boost student's interactions, the instructor may give a participation mark. Furthermore, instructors should be able to understand the diverse nature of students, involve them in online discussions and encourage student to student interactions" (Durling, Cross, & Johnson, 1996) "the instructional activities give students the opportunity to collaborate with their classmates by exchanging and building information together. There are many types of instructional activities that encourage may include self-introductions, group discussion postings, small-group projects, peer critiques, etc." Academic achievement improved by interaction among students.

6- Support Services and Achievement

Successful online support services aid both students and faculty. As higher education expands its distance education offerings, "the diversity of its student population increases, particularly in the area of students' proficiency with technology" (Bruso, 2001, p. 9). "the learner support phase, students learn self-development strategies so that they can accept responsibility for developing their own skills. Key support services during this phase are academic advising, instructional support and tutoring, library and bookstore

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services, disability services, and networking”. As Dalziel and Payne(2001) note, “Providing effective, efficient online student services is an enormous challenge for higher education administrators”.

7- Modern Technology and Achievement

“Communication technologies give geologically and temporally distributed students the opportunity for team collaboration in a virtual workplace by providing an upbringing for knowledge construction through collaborative learning” (Stacey, 1999). Yet current web-based learning environments may not fully support opportunities for social interaction. In this environment, online group work may be perceived as more tough than group work in face-to-face settings. “Communication tools can be difficult to use and may delay communication between group members, which, in turn, can make collaboration between group members difficult. When communication is problematic, the collaborative process is not able to function at an optimal level” (Ragoonaden & Bordeleau, 2000). “Student experience of technology shapes and influences their perceptions of online collaborative learning, as well” (Ragoonaden & Bordeleau, 2000). For a successful online collaborative learning environment, the instructor has to make students comfortable with the system and with the software that they are using. Students interface with the course technology computer hardware/software, the course management system, audio/video materials, etc. can impact their potential to learn from and engage with the course materials. Technology crisis points need to be projected and addressed. Educators do enhance their programs by utilizing technology.

OBJECTIVES OF THE STUDY

Objectives of the study were:

- To identify the access of technology for distance learner.
- To explore the use of technology on achievement of distance Learner.
- To enlist the problems faced by distance learners in the use of technology
- To suggest the measures for the development of human resources.

Delimitation of the Study:

The study was delimited to only Open Learning Institute of Virtual Education (OLIVE) to assess the Effect of Technology on Distance Learner Achievement.

RESEARCH METHODOLOGY

Sampling

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It was a descriptive study therefore, survey was considered appropriate for this study. A sample of 60 students of PGD (cs) students of AIOU, Islamabad were taken as a sample.

Instruments and their Development

In this survey, a questionnaire on five points (Likert Scale) was used for the collection of data. In the questionnaire items towards Quantity education, female education, learning with earning, higher education, unemployment, technological innovations and professional development of tutors and teachers were asked to elicit the valuable opinions of the respective respondents .A questionnaire was developed on five point (likert) to know the opinion of faculty members and students. The finalized research tool was administered on the respective sample for the collection of data. Same questionnaire was administered on the respective sample of students for the collection of data Collected data was analyzed through percentage and mean score. Responses of 56 out Of 60 respondents of Ph.D/M.Phil were interpreted and presented in percentage.

Data Analysis

The data collected through Questionnaires were analyzed by applying percentage and mean score

Table .1 Olive access and teaching learning process.

S.No	Statements	SA	A	UNC	DA	SDA	%	Mean
01	Student can easily access the educational material.	8	44	4	0	0	92.7	4.07
02	Content of study material is easy to understand.	4	34	6	10	2	67.9	3.5
03	OLIVE enhance the quality of learning in IT discipline.	4	34	2	14	2	67.9	3.42
04	Student can easily access the online tutorial support.	2	28	12	10	4	53.5	3.25
05	Student can easily access other online activities.	4	44	4	4	0	85.7	3.85
06	During the lecture friendly learning environment.	8	24	10	12	2	57.1	3.42

Scale value for this table is SA(Strongly Agree)=5, A(Agree)=4, UNC(Uncertain)=3, DA(Disagree)=2, SDA(Strongly Disagree)=1

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Table 1 shows that in online education students have easy access to the education material, online tutorial support and other online activities. During the lecture friendly learning environment and content of study material is easy to understand. A large number of respondents was uncertain about online tutorial support and friendly learning environment. Similarly the mean score is above than 3.24.

Table .2 Individual development and achievement

S.No	Statements	SA	A	UNC	DA	SDA	%	Mean
01	OLIVE develops motivation in the learner .	6	38	4	6	2	78.5	3.71
02	OLIVE increases professional development in the learners.	8	36	6	4	2	78.6	3.75
03	OLIVE provides collaborative learning opportunities.	6	36	4	6	4	75	3.60
04	OLIVE improves learning skill of the distance learner.	16	32	4	4	0	85.7	4.07
05	Learning management system helpful for better academic achievement.	4	36	6	8	2	71.5	3.60
06	It enables the learner to give online feedback on the spot.	10	40	6	0	0	89.3	4.07

Scale value for this table is SA(Strongly Agree)=5, A(Agree)=4, UNC(Uncertain)=3, DA(Disagree)=2, SDA(Strongly Disagree)=1

Table -2 shows that online education has a positive effect on individual development and achievement. Majority of respondent 71% that Online education improves the learning skill of the distance learner and develop motivation and professional development. It provide collaborative learning opportunities to the learner and encourage for better academic achievement. Similarly, mean score is more than 3.59. It is very interesting that online education enables the learner to give online feedback on the spot.

Table.3 Problems of students in OLIVE

S.No	Statements	SA	A	UNC	DA	SDA	%	Mean
01	At the lecture time, electricity is present.	8	20	12	2	4	49.9	3.28
02	Internet is easily available.	8	36	2	4	6	78.6	3.64
03	Computer service in	6	38	6	6	0	71.4	3.78

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	case of disorder is difficult.							
04	Student face problem of software.	6	34	4	8	4	71.4	3.55
05	Student face problem of virus.	7	33	4	8	4	71.4	3.55
06	Student may forgot his/her password.	12	12	10	14	8	43	3.10

Scale value for this table is SA(Strongly Agree)=5, A(Agree)=4, UNC(Uncertain)=3, DA(Disagree)=2, SDA(Strongly Disagree)=1

Table -3 shows that student face problem of hardware and software virus. Electricity and internet are major problems. It was a great surprise that some of the respondents remain uncertain about power failure. The student has also the problem of forgetting the password. Majority of the respondents agreed that above mentioned barriers were major problems for them in online education.

Conclusions

Distance learner has easily access to educational material and other online activities. It enhances the quality of learning because content of study material and language of lecture is easy to understand. Student has easy access to online tutorial support with friendly learning environment. It improves learning skill of the distance learner with online feedback. Online education motivates students to make decision about the task assigned to them and use to improve distance learning of distance learner. The analysis showed that male students perceiving online education as these is higher than the female students. It was also concluded that collaborative learning encouraged competition among students as well as encouraged the student to ask question about their queries and the problems they encounter. Internet is easily available but the students face problem of hardware, software and viruses.

Recommendations

On the basis of conclusions, following recommendations were drawn:

The online course developer, instructor, or teacher should focus on designing online learning environments that support exploratory and dialogical learning. Exploratory and dialogical learning environments engage learners in online learning activities that require collaboration, communication, social interaction, reflection, evaluation, and self-directed learning. Online courses may be need weekly quizzes or assignments. Social interaction is much important for online collaborative group work. So there is a much need to improve online education. Learning centers should be available to students. For many students taking classes at home is not a viable option for

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a number of reasons. There is need to establish learning centers to meet the needs of such students.

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Poem

Dr. Naseem Achakzai

Once, it was said that a poem does not have meanings, or if there is any meaning of a poem that is 'poem' by itself, but now on the very edge of the designing, shifting, enclosing, generating, improvising, and dissecting 'images' of quality linked with different strings of empirical technologies where an interpretation of a poem is not a poem itself, but is the life of a poet in internal and external situations. This protocolled mind of the main current medically, scientifically, socially, and culturally explores the zones of 'Mind in Body and Body in Mind'. It engenders different shades of meanings, not only as a poet but as an actant and the inhabitant of mind. This technological treatment explores the mental and historical records of reality in its social lab.

A piece of poem or poetry is now an essence but is the height of 'prose and criticism' from classical-structuralism to deconstruction, enhancing the poetics of thoughts from socio-cultural to mental account, in their vertical and horizontal sights and diagrams.

A poem is a breeding value of cultural and emotional attitude.

Poetry is now the outcome of a skilled and exercised thought that causes the worth of creative zone and puts a stamp of authenticity on the actuality of social and cultural designs and their

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Poem

textures a well equipped mind has journeyed through, producing its internal and external tenets with thematic equipment and their shared *unities*. Each curve of a poem, either in selection or in combination, breeds the *density* of its targeted *assessment*.

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Role of English Literature and Local Literature in English for Learning English as L2: A Comparative Study

Muhammad Saleem, M.Phil. in Linguistics

Abstract

This study critically investigates the role that a text of English literature plays, in comparison with the local literary text in English, in the learning of English as a second language. To provide data for this research, two literary texts are selected and targeted: 'Araby' by James Joyce and 'The New Constitution' by Sadat Hassan Manto, a Pakistani short story writer. This analysis is based upon the perceptions and prescriptions of Piaget's world known schema theory which reads that to comprehend and understand a social product fully, the langue (mental lexicon of a speech community) and socialization in the relevant culture are necessary.

The analysis is conducted on the lexical, idiomatic, phrasal, clausal and the discourse levels.

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Roles of English Literature and Local Language Literature in English for Learning English as L2: A Comparative Study

Teaching and learning English as a second language through literary text is always considered an important phenomenon in Pakistan and the subcontinent. In that context, this research is very useful because we may be able to identify which of the two literary texts is more effective for the non-native learners like Pakistanis in learning English.

Key Words: Schema Theory, Role of Local Literature in English, Learning English as L2

Introduction

Saussure's contribution towards modernization of linguistics led to the emergence of so many new theories in the field of language studies which not only introduced far-reaching developments in the discipline concerned but also expanded the discipline to come in close contact with several areas. His concept of *langue* stands for the presence of a collective mental lexicon of a speech community from which its speakers acquire the linguistic material to produce utterances called *parole*. This mechanism of language system embedded in the conscious of the speakers enables them to communicate with each other and understand the social and cultural products of a population.

This idea of Saussure was further developed by Jean Piaget as a schema theory. This Swiss philosopher believes that the socialization of a person in a particular culture equips him or her with a body of knowledge, information and skills to comprehend the social, political, artistic and cultural products of that setting. This pre-existing store of knowledge that has harmonies with Saussure's *langue* phenomenon is in fact a tool in the hands of the speakers to grasp the culture of which he is a part. In a broader sense, schema theory holds that to understand a culture the schema of that culture is necessary. If we try to understand a cultural product with the help of an

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already existing body of knowledge that belongs to the other culture, we will not be able to comprehend the product properly and fully.

McKay (2003) holds that the role of the culture is unavoidably essential both in the learning and teaching of a language. Politzer (1959) is of the view that a language is steeped in the culture that produced it.

There are chances that we misunderstand the product if we apply to it the schema that belongs to the other culture.

Research Method Adopted

The present researcher who has been teaching English language and English literature for years to the students at the college level in Pakistan does appreciate the schema theory of Piaget. It is his hypothesis that he developed over a period of time that for the Pakistani students, who are desirous to learn English through literature, the study of local literature written in English is more helpful than English literature. Reason is simple. The Pakistani schema helps the learner in many ways to grasp the Pakistani product.

To test this hypothesis, the present study is undertaken. *Araby*, a short story by James Joyce, an Irish novelist of the previous century, and *The New Constitution*, a story by a Pakistani literary writer Manto, are selected for providing data to the research. Using the medium of English, the researcher taught both the stories to a B.A. class consisting of fifty students. Then five students of the class - role number ten, twenty, thirty, forty and fifty - were selected to provide their reaction and response to the various questions set in the question paper. The six questions - the cause of low spiritedness of the hero at the start of the story, fill in the blanks,

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explanation of idiomatic phrases, meanings of culture-specific words, comprehension of adjectival phrases and summary of the story - are similar in character and are also relevant to both of the above mentioned short stories. Then these answers were analysed to reach the conclusion that is presented in the form of results and recommendations at the end of the research process. To meet the sense of comprehensiveness and thoroughness of research, each response of every respondent is analysed individually.

Data Analysis

Araby is one of the stories from *Dubliners* that James Joyce wrote in 1914 about the stagnant and paralysed life of the middle class individuals living in Dublin at that time. *The New Constitution* is a short story by a post-colonial Pakistani writer Manto. It depicts the brutal behaviour of the British soldiers towards the locals some years ahead the independence of Pakistan and India in 1947. It deals with desires and reactions of the local Indians against the cruel foreign rulers. These two stories taken from different cultures are targeted to render data for the present research.

Question No. 1

While responding to the first question of the paper that is ‘Why the hero is upset at the start of the story?’ the respondents produced very interesting material. Each of the five respondents holds that Mangu, the hero of the post-colonial story by Manto, is upset because the British soldiers did beat him for his rebellious instincts against the ruling colonisers. This poor *tangawala* of Lahore feels helpless before the roaring pride of the colonial masters in the British India. The answer is correct.

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On the other hand, all the respondents posit that the teenage hero of *Araby* is upset at the inception of the writing as he is in true love with a girl of his vicinity but the girl is not responding to his love. All these students are mistaken in their understanding of the cause of despair of the hero. In fact, Joyce intended, in the story under discussion, to distinguish between the teenage attachment for the opposite sex called ‘foolish blood’ and love that is a mature and honorable passion of humans. The hero in the story remains confused for a long time about the nature of his emotional and crudely powerful attachment for a girl. Then suddenly he comes to know that he is in love with a girl of the locality. Facts are quite strange.

Our respondents failed to judge the real cause of the emotional attachment of the boy because their Pakistani schema did not support them. In fact, in our culture it is generally believed that those girls and boys who remain playmates for a considerable period of time are expected to fall into love with each other and ultimately their sound love culminates in their marriage. Even the film, drama and folk literature appear in support of this thought. There are so many epic stories in the traditional culture of Pakistan where lovers fall in love with each other from the start of their life. That is why the local respondents produced their mistaken answers. The local schema misguided them in the understanding of a cultural product of the Irish society. These learners of English as second language did not make any mistake while interpreting the story that is taken from their ‘own society’ because their schema was relevant to the story.

Question No. 2

Second question put before the participants was again to test their knowledge about general information regarding the narrative and the characters in it. Five items of the typical

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question of ‘Fill in the blanks’ were addressed by the students in different ways. Each of the five blank spaces, with reference to Manto’s short story under discussion, was filled correctly by four out of five respondents; only one out of five students filled two out of five spaces wrongly. His three out of five responses were correct. As far as the responses to the empty slots regarding the story by Joyce are concerned, three out of five students provided correct reply to two out of five spaces. Their responses to three items of the ‘fill in blanks’ were wrong. While attempting the question, the remaining two respondents could not provide even a single correct answer.

Again the interpretation of this data pulls us to the direction of Piglet’s theory of schema. This question of empty spaces is also linked with the cultural schema. The participants supported by their own cultural and social knowledge remained correct in providing replies to the blank spaces prepared on Manto’s story as they are historically well aware of the British cruelties that were imposed upon their forefathers before Pakistan got freedom. This post-colonial short fiction is seen by the students as their ‘own literature’. That is why they quite successfully respond to the empty slot in ‘Ustad Mangu hated the---’. They provide ‘the British’ to the empty space. They are fully conscious of the Punjabi characters like Mangu in the state of anger and depression. On the other hand their cultural schema that is foreign to *Araby* generally remains irrelevant to their competence to provide correct material to fill in the slots.

Mangu is an illiterate *tangawala* in Lahore who usually moves on the Mall to transport passengers from one place to the other place. One day a British soldier asked him to carry him to a bazaar where girls dance. The tangawala demanded five rupee as fare. The *gora* soldier thrashed him badly. The poor Punjabi who is a colonized entity could not respond to the colonizer in the same manner as the law in the British Raj would not support him in the court.

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Mangu, when he is among his friends at the *tanga* stand, abuses the illegal occupants of India-the English. One day he hears from the students of Government College Lahore, who travel on his tanga, that a new constitution is at hand and that it would give equal rights to the Indians along with the Britishers. That is why he is very happy when he comes back to his friends. He happily tells them that the days of their slavery are gone because the new constitution is a message of independence to them. One question was set in this context.

Question No. 3

The third question asked was to explain an idiomatic expression ‘Mangu was in seventh heaven’. All of the respondents provided the correct answer. Words were different but the sense was similar. On the other hand their explanation of the idiomatic expression ‘we ran the gauntlet of the rough tribes from the cottage to the back doors’ was wrong. All the students failed to comprehend its sense. Answer to this situation is again the result of that assistance that we get from our schema to understand a cultural product. We, the Pakistanis, can understand quite easily what is meant by ‘seventh heaven’ and the Western schema is unknown to such type of things. Our respondents have their Pakistani schema with them that works as a weapon in their hands to grasp the artistic pieces of their own culture but it cannot be a real help to them in the interpretation of *Araby*. Only the Western schema can help the reader grasp the meanings of an expression linked with the Western culture.

Question No. 4

In each of the two stories there is the presence of proper nouns. And the next question was to test the general understanding of the participants in this regard. They were asked to

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explain the word ‘Anarkali’, used in Manto’s story under analysis, and the lexical item ‘Araby’, used in Joyce’ story. All of the respondents explained Anarkali in terms of a market of Lahore. In the same way all of the participants called Araby as a market of England. They are correct in their response to Anarkali but they are incorrect when they label Araby as a market of the West. Their applying of the local schema to the interpretation of the word Araby is faulty.

Question No. 5

The next question was to explain the underlined phrases in the clauses taken from both the stories. All the respondents explained ‘human monkeys’, an expression taken from *The New Constitution*, correctly as the white men of English Raj in India. On the other hand all the respondents explained ‘went marketing’ - a phrase from *Araby* - as ‘went to market’. It is the incorrect explanation. In fact ‘went marketing’ stands for a salesman’s going to the market for marketing a product. The local schema of the Pakistani respondents and learners of English as L2 could not help them; rather it misguided them in the given interpretation.

Question No. 6

The last question was to write the summary of the stories. The learners made a lot of grammatical mistakes and also wrongly understood and explained the theme of Joyce’ story under discussion. On the other hand the participants made a few mistakes of grammar and correctly understood and elucidated the central idea of Manto’s story under analysis.

The analysed data quite clearly proves that the Pakistani learners of English through English literature felt a lot of problems in the process, usually misunderstood the theme, failed to

comprehend the phrasal usage of language because their local schema provided them with wrong information at the crucial points of the reading of *Araby*. On the other hand, the respondents mostly comprehended and explained the questions set on *The New Constitution* in a positive way as their 'Pakistani schema' proved very helpful to them.

Conclusion

The research conducted to analyse the comparative role of English literature and local/Pakistani literature written in English in the context of learning English as second language produced very significant results. It is proved that to understand an artistic product easily, properly and fully, knowledge of that culture is very important. Keeping this notion in mind Piaget presented the theory of schema, pre-existing body of knowledge. When a writer composes a piece of literature, his/her sensibility derives its strength from the language of that culture that is a common super-ordinate for all the individuals socialized in the milieu of this culture. That is why it is very easy to understand a product relevant to our schema. But when we try to understand a product of some other culture with the help of our 'own' schema, the results are not encouraging.

It also happens sometimes that we sometimes misinterpret a foreign product when we apply our native body of knowledge to it. The respondents of this research are at ease in the understanding of *The New Constitution* but they feel a lot of problems and difficulties while trying to understand *Araby*.

Learning and teaching of English as a second language is an important phenomenon and a clear reality in a country like Pakistan. The Third World feels the necessity to learn English. For this purpose various techniques are adopted. One of them is to learn/teach it through

literature. In this regard, to learn and teach English through local literature in English is a better choice.

There are many areas which still lie untapped in this realm of research. For example, the role of local proverbs, the local idioms, common words of English that circulate in the Pakistan society, and the style of Pakistani writers in local literature in English are still to be brought under the research net. Structure and patterns of the syntactic material of Pakistan literature in English, the collocational patterns of the Pakistani English in literature, the use of local lexical items, are some of the other areas that still lie untapped for research.

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QUESTIONNAIRE

THE NEW CONSTITUTION

(Saadat Hassan Manto)

Name of the student-----

Answer the following questions.

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Q 1 Why the hero is upset at the start of the story?

Q 2 Fill in the blanks.

(a) Ustad Mangu hated-----

(b) Hindus and----- keep slashing each other every day.

(c) Three days later he picked up three students from Government-----

(d) ...he hated them because they were ruling Hindustan against-----of the Indians.

Q 3 Explain the following idiomatic phrases.

Mangu was already in seventh heaven.

Q 4 Give the meanings of the following word.

Anarkali

Q 5 Explain the underlined expressions.

I cannot stand the sight of them, these human monkeys.

Q 6 Write the summary of the short story.

ARABY

(James Joyce)

Name of the student.....

Answer the following questions.

Q 1 Why is the hero upset at the start of the story?

Q 2 Fill in the blanks.

(a) She could not go, she said, because there would be a-----that week in the convent.

(b) My aunt was surprised and hoped it was not some----- affair.

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(c) ... who sang a *come-all-you*----- or a ballad about the troubles in our land.

(d) North Richmond Street was a quiet street at the hour when the Christian-----

Schools set the boys free.

Q 3 Explain the following idiomatic phrases in simple words.

...we ran gauntlet of the rough tribes from the cottages to the back doors.....

Q 4 Give the meanings of the following word.

Araby

Q 5 Explain the underlined expression.

On Saturday evenings when my aunt went marketing I had to carry some of the parcels.

Q 6 Write the summary of the short story.

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The Strange Accents of Knowing: A Challenge to Education

Dr. Sohaila Javed

Abstract

This paper engages our phenomenological gaze into the dark “whatness” of creation for knowing the reality of the world. This Orphic gaze¹ takes us to wonder about the meaning of human existence, and the humanness of human beings. It also awakens us to look into our self in its “naked appearance” (van Manen, 2002) and “peer past the veneer of human constructs” at who we are; what is our place in all this; why are we here; and finally, what do we know? These are existential questionings that need reflective thought and immediate response for transformative change.

¹ Orphic gaze: Refers to the story of **Orpheus** and the death of his love-wife Eurydice, and his desperate attempt to regain her from the realm of the dead on the condition that he will not turn around to look at her. Yet in his Orpheic desire, he turned and instantly lost her to the underworld. With the same desire, let’s move into the space where the invisibility of the Real exists in abstraction, but may be abstracted by our moment- to- moment, intent gazing.

Introduction

Such serious searching at ground zero confronts us with our ‘unknowing’ and at such a base level, we can, with Lacan (1977b), feel “the pristine moment of pain and bliss when the gaze captures the object”, with nothingness staring back at us in the silence of wonder. Thus arriving at the heart of phenomenological reduction, an awesome original text may be a way toward a strong sense of human understanding that reminds always as to who and what are we. What is our place in all this? Why are we here? What do we know? And what do we do then?

These are questions that ask for an intent, rigorous gaze that Gunaratana (1991, in Franck, 1973) calls our “bare attention” inwards, and then, with a heightened sense of the pathic and a passive receptivity, we step into the creative core of our origin where, with the passion of affection and suffering, we forget who we think we are, and remember the beings we essentially are, with us becoming ‘a pathic text’, evoked by our own intent gazing. This space invites our encounter with self as real other, the ‘not i’ we don’t like to know, and the great Other, thought farthest away from our knowing, but nearest to the pulse and soul self, both existing in the dark of our own constructed identities. Here configurations shift, meanings resonate and reverberate with perceptive being, calling us forth to reflexive action. This is no mere philosophic reflection but a deepening experience of human phenomenon, a phenomenological discourse between ‘self and Other,’ that puts one’s entire existence into question, bringing all together in the bond of human experience.

We are ‘a pathic text’ then, and in the passion of affection and suffering that we perennially experience, we are invited to a healing ceremony of the self, where we can recognize who we really are and what we really know, and also who Other fully is and what Other knows, and then rise, as Ricoeur’s reflecting subjects (1981), by means of “a corrective critique from misunderstanding to understanding.” Such reflective moments do not bring a mere change in identity, but a foundational, qualitative shift in the process of

how we construct our identities. This means we need to deconstruct ourselves as the beings we are so that there is renewal from the creative source of our origins, as claimed by Kraemer (2000), if we are to recover and heal ourselves. By recovering our real selves, we can find the possibility of “refiguring us”, and consequently, our whole way of being.

A Preamble into the Uniqueness of Knowledge

This is a story of the *historia* of Knowledge that concerns all, and yet by an ironical fit, fills many with holy dread of the unknown. Its phonological variants, however, fascinate thought and lead storytellers to an etymological inquiry of the Latin *story*. As Bodimer notes (in Roemer, 1995):

the source of Greek *historia* is a root, *wid-tor*, whose first element appears also in the Latin cognate *videre*, to see; Sanskrit *vid*, to perceive; Gothic *witz* to know; and in the English wit, *to know*. The element *wid* is the root from which Greek *idein*, to see, and *oida*, to know, are formed. An Indo-European root, *gna*, to know, gives us *narrative*.

Here to know and/or not know is the question, where unknowing begins and knowing enjoys no finitude in the creation of Knowledge. Its uncertainty is its hidden pleasure, and its encounter with its own proximity guarantees no disclosure as to its beginning and ending. Like Frost’s poem, it rides on its own melting, and melts the knower in the warm oasis it creates in the brown deserts of life. This is the offer. And our unknowing is the beginning. Such uncertainty conditions us to our vulnerability, making us a pathetic text that is not without dread and hopelessness.

But, as Kierkegaard says (1946), dread is the possibility of freedom, and it opens up the window of possibility. For humans to know that contradictions are intrinsic to

human existence is frightening and dangerous. We know this and can be awed to silence by their complex authority. Yet our life story countermands it as we see ourselves standing between opposites that tether us in the in-between spaces of being and notbeing as metonyms of life, recognizing our coming hither and our going hence, and also the possibility of our nonbeing before the destined notbeing. As Rilke says (in Roemer, 1995):

Once

each but once. *Once* and no more. And we too,
once. Never again. But
to have been here *once*. Even if only *once*,
to have been here on earth *once* would seem irrevocable.

This *once* that we are here desires celebration, by performing the ceremony as metonym of life, affirming our essential being before notbeing, and by shoring up humanity's smallest unit-this individual's story of knowing- "the me is another" (Rousseau), the 'I' that I do not know so that "I know it less than ever. I do and don't identify myself with myself" (Giacometti, in Roemer, 1995). This necessitates the need to reconcile with this another that equates our existence with nonbeing, asks us to challenge nonbeing that is mere living, and reckon that our knowing is so narrow and conservative, limiting 'me to myself,' that is like:

our communal 'knowing', like the institutions that depend on it, is profoundly restrictive and conservative: it tries to exclude the other, the unfamiliar, the anomalous. Yet our structures- to maintain their validity in an ever-changing context- must include the new and coopt, to the extent that this is possible, whatever threatens or contradicts them:
they must relate themselves to the unknown and forbidden

(Michael Roemer, 1995)

Knowing as in Rilke's poem that every death diminishes us and also uncertain, we all the more need to venture "beyond the known and sanctioned" (Levi-Strauss, 1945), always witnessing our desire and drive to relate ourselves to the other, the unknown, the unfamiliar, learning from Gadamer (1977) that only through others do we gain true knowledge of ourselves. With interestedness as the essence of subjectivity (Kierkegaard, 1946), and desire to seek out the essence of self and Other, we move towards Knowledge so as to know and ex-change ourselves in "the metamorphosis of the world" (Ricoeur, 1981), and thereby become truly who we are with understanding.

A Complex Story of Knowledge

This is a complex *story* of knowledge, and as education's undertaking on the meaning of life, has a temporal mode of being, which is to say that it is ever in the flow of becoming and thus, like Merleau-Ponty's "Being" (1989), never fully is. It is not something fully determinate, unchanging, timeless, eternally the selfsame. It is concerned with "things which are only for the most part true and with premises of the same kind to reach conclusions that are no better," as pointed by Aristotle (in Madison, 1988). Knowledge therefore, is not a scientific construct with theoretical reason as its proper object and conclusions as its proper end. It goes beyond any paradigmatic or categorized knowledge claim, beyond things that exist of necessity as in mathematics, and *being* with that is *whole, contingent and changing*. It enters the synthetic sphere of art and humanities, the sphere of the living universe, where human perception is taken into literature, art and mysticism, embracing human interestedness that becomes the central thesis of phenomenological hermeneutics. We know this for the practical reason that there are things anybody, even the most postmodern philosopher, possibly admits, that s/he can never ever really know, be absolutely sure of. Also consider what Gadamer has to say: "Does an author really know so exactly and in every sentence what he means?" "Not occasionally only, but always, the meaning of a text goes beyond its author" (1977). And then, what is there for the reader?

Ambivalent Relationship with Knowledge

This recognition, coming with thought, perception and imagination, awakens emotional awareness and inspires the unknowing knower with infinite passion to remain in an ambivalent relationship with knowledge, what William James cognizes as “an organ, superadded to the other organs which maintain the animal in the struggle for existence.” The resistance that the unknowable per se of knowledge poses on the way helps to maintain the strife for an in-life *communitas* with the Incomprehensible, even if it is brief. The quality of knowledge never runs smooth. It puts the knower in the *consubstantial* tension between the opposites- knowing and still unknowing that may resemble Bohr’s principle of complementarity (in Roemer, 1995):

The quantum theoretical dualism of waves and particles makes the same entity appear both as matter and as force. Bohr advocated the use of both pictures, which he called “complementary” to each other. The two pictures are of course mutually exclusive, because a certain thing cannot at the same time be a particle (i.e., substance confined to a very small volume) and a wave (i.e., a field spread out over a large space) but the two complement each other. By playing with both pictures, by going from the one picture to the other and back again, we finally get the right impression of the strange kind of reality behind our atomic experiments.

The physicist Freeman Dyson writes that Bohr:

liked to apply (the principle of complementarity) to...situations in ethics and philosophy as well as in physics. *Complementarity* says that nature is too subtle to be described from *any single point of view*. To obtain an adequate description, you have to look at things from several points of view, even though the different viewpoints are incompatible and cannot be viewed simultaneously. Statements that

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are true when seen from a single point of view may be false when seen from another.

He further refers to Bohr's claim about the two kinds of truth, which, according to Bohr, either refers to statements that are so simple that need no opposite assertion, and therefore are true, or the so-called "deep truths," are statements in which the opposite also contains deep truth" (Roemer, 1995).

These deep truths reflect our own divers search for "an adequate description" and that is likely to sends us on a hermeneutic quest wanting to find out the determinacy of textual meaning, delving self into texts' unknown depths that Ricoeur calls "the world of the work," and moving back and forth between indeterminate points of the text to know more. The "still-point of our awareness" is the elusive nature of "deep truths" that escape grasp, and yet engages us in a creative venture for meaning-making, which is, as Gadamer says, "not a reproductive but always a productive activity." This soul-searching takes literary hermeneuts "outside the text for decidable meanings" (1977). The chaotic mix of positive anxiety and ambition in subjectivity's intermix of mud and slime, with the spirit burning incense always, reminds us that our being as individuals and as a species may be little more than our knowing, while we are always in search of meaning for possibly living the meaning, and thus making hermeneutics a way of human existence.

Constructed Identities

Our little knowing, in its contradictory mode of being, as Hegel says, is the root of all movement and life. Only insofar as something contains a contradiction does it move, or have drive and activity. Therefore, it is limitations precisely, that we need and above all, limits are our truth. We are all the time faced with limits as an analogue of necessity or that interweaves our knowing with unknowing and the 'unknowable per se,' and still

leaves us with the ultimate not-knowing-all. This is the limit that constrains knowledge, telling us, all the while, that it is our deepest reality.

For Heidegger (1976), “The most difficult learning is to come to know actually and to the very foundations what we already know.” Heidegger’s actual knowing suggestion defers constructed identities and hints to a foundational shift which takes us into parameters of experience not known before. Here, immersion in inchoate passion can bring alterity in identities and pure existence magnified for all to see that they are not conflicting, but rather, they are thought to be of either as separate in their absoluteness or as component parts of a harmony. If in life they become so, it is because in the cramped condition of our earthly being, we divert the course that our nature indicates, and only now in our undressing, we see our blending, and in naked brilliance, are ecs+a+ic in the restored communion. The fruitful vigor that returns to life after imbalance IS insight to dwell upon, as Allot (1958) claims, “Together each group, following its own sphere, combines to compose as cosmic harmony. It is the destruction and the re-establishment of this harmony, which is the theme of the story”.

Recovery of Equilibrium

The recovery of equilibrium, which is temporarily lost, is the theme of this story. If we don’t recover, we are lost, dazed, duped. Are we awake or asleep? We don’t know...this is the dread that perpetuates our drive for knowledge in “a strange state of mind” that Freud (1963) describes as that “in which one knows and does not know a thing at the same time.” And in this state of recovery, our story reflects our consciousness, and in situations that hold us passive and helpless, our awareness can even constitute a form of action.

And we as storytellers often start out wholly identified with our story. Roemer (1995) claims that as we listen to this story, most of trust the teller because s/he has lived the story. And “Yet in the course of telling it, both he and we who listen

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become freer, or more detached. Perhaps only those who must live their story without knowing or telling it are helpless.” With this state of mind, this story of Knowledge, with subjectivity and consciousness as a combined “organ” of deep knowing, is the hopeful rejoinder, at once disabling and enabling. Not only understanding, willing, imagining, but also feeling the awareness of our limitations, it wills us the means and the hope of exceeding them, with us hovering on the edge of the unknown, a part of it but never apart from it, making our reach exceed our grasp.

However, this awareness can serve as the means of *reconnecting* us, serving as balance between what we know, don’t know, and need to know. As we acknowledge our conditionality and mobilize it to attain “a margin of freedom,” even if it is brief, we will be living our story as our story tells us with the possibility of understanding as we become the subject of the “operations of knowing, willing, evaluating, etc.” (Ricoeur, 1981). This is the Story that puts us in an interpretative state of knowing the Other.

The Metaphysics of Human Inter-Subjectivity

Mr. Palomar thinks that every translation requires another translation, and so on... Yet he knows he could never suppress in himself the need to translate, to move from one language to another, from concrete figures to abstract words, to weave and reweave a network of analogies. Not to interpret is impossible, as refraining from thinking is impossible.

(Italo Calvino, in Mr. Palomar, 1985)

Reconnection, therefore, is imperative in order to end the impossibility of interpreting the Other as “locus of permanence” (Shalom, 1984). It also provides an epistemological springboard for attaining immutable truths and “divine illumination.” Since I know that I am, I cannot doubt that I exist. This proves, as Saint Augustine argued (De Civitate Dei, xi, 26) that “there are truths that I can attain to; it proves the existence not only of a substantial soul but also, ultimately, that of a metaphysical or onto-

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theological God which, as pure being, is also absolute, immutable substance,” and that “It is a power that fully *is*.” As the permanent locus of the physical entity it fundamentally is as a whole, determines that it fully is, it will become what it potentially is, and thus “is a center of power,” and simultaneously calls us to respond to the “center of power” that fully is. Its centrality of power is limits us with our intrinsic limitations, our little knowing. This is the limit that confers value and meaning, for we treasure what ever is scarce and subject to loss. Less is more and graciously accepted. This less is all the more inspirational for remaining in limits, and yet moving towards more. “The limits generate the form,” says Hegel (1986), and make meaning out of necessity that makes living perfectly magical-perfectly ordinary.

Nietzsche suggests that our attempt to know originates in fear, and to him, knowing is the will to discover in everything strange, unusual, or questionable. He further adds that it is possible that “it should be the instinct of fear, which enjoins upon us to know? Is it not possible that the rejoicing of the discerning should be just his rejoicing in the regained feeling of security?” (in Roemer, 1995). The quest for this freedom and security will be our effort to empower ourselves. Such potential power then brings discovery of the “strange, unusual, or questionable” so that nothing “no longer disquiets us.” This is itself nihilistic that may overpower fear and bring some feeling of security, but will it not also simultaneously inhibit or dampen the inherent instinct of knowing that springs out of our necessity, our limitation. This necessity out of awe of our true ‘real’ sets clear priorities and informs our perceptions and actions. It orients and harmonizes us, and concentrates our being wonderfully and we know why we are alive. To stand in awe before “the cloud of unknowing,” and then, through acts of faith (reflective reading) and love (ethical living) begin to know that is incomprehensible in the created world.

The Strangeness and Mystery of Unknowable

To begin to know the strangeness and mystery of unknowable per se is seeking knowledge too that complements other knowing and confers “unity of being” (T. S. Eliot)

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to both knowledge and knowledge seekers, thus stepping us forth toward the veritable Unknown, an experiencing which begins to quiet us. Without knowledge of this Essence through its manifestations, that is our “dependent origination” (“When this is, that is....This arising, that arising...”, Walpola, 1959, in Griffin, 1990), plain living leaves us not knowing some Uniqueness that completes this knot of life, Knowledge, and the Essence and Energy that is the source and substance of Life. When we lose touch with this Necessity, we become aimless and marginal. We also remain unknowing and disconnected. All the knowing that we possess inherits fear of nothingness and dispossesses awe and wonder that is the impulse of creativeness and our humanness as embodied essence of the Sacred in our world and words. We are all the more blind, deaf and mute, the narcissistic we.

Simultaneous Unknowing and Not-Knowing

This is an analogue to the necessity of simultaneous unknowing and not-knowing—all taking us toward the unknowable per se Knowledge, engendering a state Victor Turner calls *communitas*, which complements and compensates social structure. The culture it breeds is “egalitarian, undifferentiated, and nonlogical, whereas social structures are hierarchic, differential, and emphatically ordered” (in Roemer, 1995). It offers us relief from the disease of any modernism: conflict, competition, indifference and negative anxiety, product of power consciousness, psychological egoism and self-consumerism, and ills of humanity, namely “man’s inhumanity to man,” in Shakespeare’s words, and simultaneously, become the birth place of Rage and Hate that sweep us away from cultural togetherness. As Roemer (1995) proclaims:

Exposure to or immersion in *communitas* seems to be an indispensable human social requirement. Paradoxically, the ritual reduction of structure to *communitas*...has the effect of regenerating the principles of classification and ordering on which social structure rests.

For the human community, this may be the epiphanous moment of *simultaneous coexistential attunement* of irreconcilable opposites: of the human and the Sacred, self and other, unknowing and knowing, nothingness and all, mortality and morality that is necessary to our existence as to our continuity as to our freedom.

This is the desired *communitas*-ethics of collective ideas that contemplative *connected knowing* upholds and reaffirms at regular intervals that can give human society its unity and its personality, and achieves what Hegel asks of philosophy, the union of union and non-union that attains to “spirit,” which he defines as “pure self-recognition in absolute otherness” (1986). In this state of purity, opposites are at once recognized, accepted and maintained, as opposite as *knowledge of religions* that complements *knowledge of the body* and thus combined, attains to “spirit” and the synthesis of all this complexity creating knowledge, that is the transcendental story of collective Knowledge. And then the imperative is to live this complementarity with such fervor that living is joy and life eternity. This knowledge has found its sacred site in self and commemorates its living connection with Sacred, that is, the essence and impulse of alterity.

This communion has found its plot, its place on this sacred earth, and its story shelters it. It is its analogue of necessity or destiny- from the Latin *destinare*, “to place down, to make secure.” This situation- from the Latin *situ*, “a site”-integrates the storyteller into the larger scheme of things. S/He may see herself/himself alone and isolated, but is, in fact, everywhere connected. Roemer’s vitalism is belligerent and asks us to remember each other as essential part of whole human community. As Kierkegaard says, “recollection banishes anxiety and continuity is the first sign of salvation”. Recollection as of a past possession is also remembering, a way of interconnecting us with nature, others, and ourselves as part of the original story that is an invitation to enter the hermeneutic circle to know the hidden...the source... with the hermeneutics of trust. It is also to know that every great and original writer, in proportion to as s/he is great and original, must herself/himself create the taste by which s/he is to be relished, is baptism to creativity itself. And so relishing is the consummate performance of the coexisting

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GUFs² ‘Grand Unified Forces’ with their willful display of charging Creativity that the “coincidence of opposites” (Nicholas de Cusa, in Roemer, 1995) have to be accepted as an avant-garde brief of darkness and light, a charismatic interplay of highest energies. At this point discordant particles reconciled in a harmonious confluence to see the coming-in of the universe and it’s filling in with important/not-important phenomena, invariably varying life forces that make creation and subsequent coexistence of all life.

Ken Wilber (1990) claims that this is work not seen by eye of flesh or conceived in the realm of senses. Does it warrant saying that which is not seen by the fleshy eye does not exist, and thus the Knowledge gained by mind and contemplation is not valid? This discourse about deep knowing takes us beyond word-wrappings (sphere of the utterable) to contemplate (with perception and feeling) about creative performances that have created the taste by which the transcendent and the transcended, and the transcending are to be relished. This is consummate creation that cannot be relished with the “lumen interior of reason and fleshy eye” alone (that is concept), but to be collectively contemplated with the “lumen superius”, that is, according to Wilber, transcendental openness (intuitive praxis). Laced with these aspects of our being, we can perhaps, and thus gather the creative insights that are said to appear in these in-between spaces. Thereby spirituality is lived and transcendent values celebrated, contemplative knowledge created and the humanity of qualitative thinking enjoyed. For Knowledge is a search for empiric and non-empiric entities, objective facts and subjective values and intentions combined. Our knowing is only an awe-stepping into this transcendent realm whereby the “hidden” exists and coexists as “locus of permanence” in creation whereby we see, think and perceive ourselves separable or inseparably as parts and parcels of this consummate, coherent and coexisting Reality. This is the “non-dual” or “non-two” yet pluridimensional Real “with a wide spectrum of dualities” (Ken Wilber, 1990),

² GUFs: According to Salam- Weinberg Model of Theoretical Physics, at temperature corresponding to energies 10 GeV, the electromagnetic interactions U(1), the weak interactions SU(2) and the strong interactions represented by SU(3) are unified, meaning they behave in the same way and the phenomena is called GUT ‘ Grand Unified Theories’. The present state of the universe, its temperature, its density and the creation of galaxies is explained on the basis of GUTs. Basing my knowledge of Uniqueness on this model, I contend that the cosmos and its consequential phenomenon came into being by the willful dynamism of the essence of Grand Unified Forces, that is, pure Energy.

coexistence of the transcendent and transcending Reality. Here the three realms: fleshy, mental and contemplative are to be entered and explored, whereby the causal, the subtle and the gross are unified and their existence is fully saturated with Being, Aliveness, ever Presence of Knowledge in this realm. Here every element of absoluteness is elevated to the value of being absolute which is by all accounts absolute. The rest is knowing, beginning with unknowing, that is the state of knowing.

Such Comprehensive Collective Knowledge, with all its multiplurality, as far as humans are concerned, is inexhaustible and incomprehensible, and not limited to any one stream of knowing. All streams of knowing, a coalescent combine of that was, is and will be, coalesce and converge to become Knowledge, the kind no university or academia can ever hold or boast of. Here the real and unreal meet to enter another Real that is between this and the eternal, and out of this expansive unified Absoluteness, grows our relative knowing “about some categorized bit of the world” (Sir Stafford Beer, in Maturana, 1980) that is valid as is all Knowledge with our stretching after fleshytruth, mentaltruth and contemplativetruth or a composition of all these at our varying levels of searching and understanding It in relation to the world. Such an undertaking will liberate scholarship from the want of paper production and institutional paranoia, and send it on a breathing mission that would want *Years and years in search* to know wisdom and perfection.

In fact, it is absolutely true that at the human level, nothing but the relatively true exists and that truth is the arriving at aim, ambition, aspiration or deepest axial (e)motion, the kind that made Prophet Moses³ say to his attendant:

I will not
Give up until I reach
the junction of the two

³ Moses: Prophet of the Jewish faith had to find a servant of God, who would instruct him “something/of the (Higher) Truth which thou has been taught?” His Teacher is a mysterious being, who has to be sought out and then, Moses has to spend years in travel with Khidhr, his mysterious Teacher, in order to understand the special knowledge which Allah had bestowed on Khidhr. Through narratives of experience and narration, Moses follows Khidhr with quiet endurance, the true attitude of the learner to the Teacher, if he has to know something of the Thing called Knowledge. This teaching is of the charismatic kind that had a spontaneic following, and needs recognition by teaching practices in the here and now.

Seas or (until) I spend
Years and years in travel.

This Surah al-Kahf-60 in the Quran shows the still unknowing “wisely wise” Moses’ peripheral bending toward Know(ledge)ing, an enterprise of “wet” knowing in the great sea of green Knowledge, the source and circularity of life itself, that is the fundament of and orientation to knowing all that is possible to know.

As the story goes...from time to time, as the world moves on, something different happens, something mysterious and relevant: a kind of brightening, a quickening, and a leap beyond, when positive coefficients meet and become narration in the narrative unity of our lives. Their *historia* of knowledge creation is our narrative. It happened long ago in the elongated past, and in Egypt as the true story of Moses, Prophet of Egypt. And it is the story of the House of Wisdom. More than a house, more than a library, more than even a palace, the House of Wisdom was at the very center of all the wisdom of the Egyptians. It was the House of the “wisely wise” Moses, learned in all the wisdom of the Egyptians. He was this House of Wisdom.

The entire Moses story is meaningful with implications in terms of our own inner and outer experience in the course of life. These experiential texts need to be interpreted with exquisite insight only within their contexts, the “world of the work” as Ricoeur (1981) calls it, and then understood by application to one’s own context. So Moses learnt from many narrative versions about narrations that became insightful discourse for his contemplative eyes. He searched for narrative meanings that he could not interpret alone but needed coexistential attunement to his mysterious Teacher so as to completely know the many texts his travel unfolded. He was led, through real experience, to search for content within “wrappings” of storytelling from all storytellers he met in his *Years and years in travel*, but only after his following his strange Teacher, his learning attitude changed, and that specific particular moral character for furthering his learning and interpreting activity became a part of him, and he could take his own course alone.

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Moses' travel unwraps for us the essence of that quest for knowledge, wisdom, understanding, at all stages in life. Our knowing researches us as we learn the patterns for understanding from our knowing teachers and ourselves, from storytelling within and without, from the birds, from the creatures who walk on their bare feet, from the stars that burn incense on open nights and make half-mortals of us. Perhaps this is the way we can give meaning to our potential be(com)ing in the course of our lives together.

Interpretive Frames

This story has interpretive basis. Its internal harmony of unmerged meaning provides “subtle shifts of meaning”...shifts in scenes and speakers in different contexts, interactions that widen and deepen experience and characters' range of vision, and bring awareness of mortality and morality. And that “more” can not avoid, ignore or annihilate the “unfinalizability” (Bakhtin, 1929/1984, p. 53) that life gives to learning and makes the reality of knowledge appear “as developing idea” (Emerson in Bakhtin, 1929/1984, in Dentith, 1995). Its manifold folds and undulating layers flow like the stream of consciousness, taking surface, aside and subterranean phenomena and recollected past, ephemeral present toward some wrapped tomorrow. Here contradictions and relational meet to act fully in the present to respect life's polyphony and shifting schema, simultaneously informing humans of conscious and conscientious coexistential attunement. This is what life enfolds, and unfolds its developing reality before Moses, and ignites his desire for green living. Reading Moses may be a way for us to search for meaning and gathering knowledge.

This episode in the story of Moses is *meant* to make four points: Moses' learnedness in all the wisdom of the Egyptians did not comprehend everything. Even as the whole stock of the knowledge of the present day, in the sciences and the arts, and in literature, (if it could be supposed to be gathered in one individual or academia), does not include all knowledge. This knowledge is always knowing, raised as it is on the fundament of that is accumulated, receiving knowledge that is fresh with experiences of narratives and narration, contemporary now, here and out there, auguring more incoming

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responses in all disciplines, *creating* knowledge always already. Moses' travel also unravels this hidden knowledge is not neutral, if it seems to you. Its arising in mutuality of the other necessitates its relation between knowledge and self, and not just self and knowledge, of Knowledge that existed even before self, as purveyor and purveyed Itself, with our becoming the purveyor of existing knowledge and knowledge creating itself with creation as subjectivity. Our biological function *cognition* acknowledges its embodiment, unfolding constantly and naturally as leaves to a tree in green paradigms that are really alive with all the senses functioning. This is the way Moses "enters into direct contact with life process, with Life itself" (Franck, 1973), as subjects combined by the "sheer miracle" of Being to experience their being cognitively with "non-conceptual awareness" (Bai, 2001), of the body and spirit. Attaining insightfulness (moral perception and emotion) as unmediated perception is the way that fills us and places us in "inter-being" (Nhat Hanh, 1993, in Bai, 2001) with the world, not as Pharaoh or King Lear but as its plain citizen, as Moses was its one plain expression. So "Organism and environment enfold into each other and unfold from one another in the fundamental circularity which is life itself" (Varela, Thompson and Rosch 1991, in Hocking, Haskell, Johnna & Linds, 2001), and inevitably look back at that particular specific, that is the Source of Life itself, and then, look forth to understanding the world. A vial of moral perception, *emotion* and expanded spiritual consciousness is the ancient technology of the self that we need to ply to know that comes to be known in our daily discourse with ever-growing knowledge. Here subjectivity and objectivity shed away "wrappings" and ecstasically embrace the essentials in a living discourse between the Knower and unknowing we.

Conclusive Insights

The act of disciplining us to such an interdisciplinary discourse and treating us to that specific refectory with which Khidhr entertained Moses is a normative educating enterprise, realizing here and now that there is no knowledge construct that is complete, conclusive, certain, absolute. Even divine Knowledge as far as humans are concerned is unlimited. Even after Moses received his divine mission, his knowledge was not so

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perfect that it could not receive further additions. This doing philosopher learnt by “years in travel” that the essence...source is comprehended only by way of acknowledging our limited comprehension before the “vastness of Infinity,” and then submitting to years of moment-to-moment learning that opens doors to understanding. When such mists blow, knowledge is in the making. Constant effort is necessary to keep our knowledge square with the march of time, and such effort the wisely wise Moses is shown to be making. What compels Moses on his distance-making is the biological cognition of his unknowing predicament, so the story goes...

Thus, Beloved of Knowledge urges knower on the path of becoming *more*, and that *more* is the kernel of moral perfection as characterized by knowing, compassionate and forgiving Prophets who were practitioners as teachers as lovers of humanity.

Of course not just the individual but humankind itself is marginal and in doubt. Consciousness-the knowledge that we are- brings with it an awareness that we are not. And so each individual, like the hero, serves not only his community but the species by proclaiming his brave “I am” and “I can.” (Michael Roemer, 1995)

It rekindles creative impulses to be *more* and stories my belief that ‘I am’ and that ‘I must’ for this creation, which includes ourselves and therefore, our sacred belongingness. This state is love, status of beloved conferred by Love, a gift to the whole creation. As Roemer claims, “Since society needs the individual just as the sacred, it has to invent him if he does not exist.” But what kind and nature of individual do we need to invent? And where? And when?

These questions pose a responsibility upon humans for a *communitas* that has become necessity when ‘humankind itself is marginal and in doubt’ with the terror of notbeing. Only acts of faith and love by loving individuals in education can stoke communities’ dying embers and revive the spirit of humanity in them before nothingness

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comes. It is union with the Sacred which the Sacred witnesses in the heart of knowers, in the spirit of faith and love that takes community from self-transcendence toward world communion and bliss ineffable. And where the human being is furthest from the Creator, the need is to reinvent the human by the mystical illumination of human beings through spiritual guidance. And where human beings never proceed further, and so remain more or less unaware of their sacred relations, or where the need is to ‘invent the sacred’ as Michael Roemer suggests, the necessity of love and faith through “nurturing conversations” (Kraemer, 2000) is the compelling need. All these attitudes and qualities are ‘presences’ in each human be(com)ing and in this way, each person’s owning her/ his own destiny. And so serves each individual, like the lover, not only her/his community but the human commUnity by proclaiming her/his brave ‘I am’ and ‘I must.’

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Exploiting Literature in the Teaching of English as a Second Language

V. Suntharesan, M.Phil., Ph.D. Candidate

Abstract

The misconception that literature is a separate domain that hasn't any relevance to language learning exists among most teachers. This faulty assumption is found to be the result of the teacher's failure in recognizing the fact that literature is the sum product of the language. Furthermore, one ought to realize that literary masterpieces came into being only after the invention of the language. In fact, incorporating literature into the language curriculum motivates language learners and creates a cheerful environment in the classroom. The beneficial role of literary texts in Second Language Learning is studied in this paper with the help of authentic data elicited from an experiment carried out among learners. From the Faculty of Arts, University of Jaffna, 50 undergraduates reading in the 3rd Year were selected at random and divided into two groups i.e. the control group and the experimental group. An identical Pre-test was conducted among both groups and the results were found to be with very little variation.

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A literature-based syllabus incorporating selected works of English literature fused with skill based language exercises was produced for the experimental group. Textbooks on the four skills covering the same components were recommended for instruction for the control group. Classes in course lessons specifically designed for each group were held for 6 months. At the end of these six months, the students were required to sit Post-tests. Their performances in the tests showed that the experimental group that followed instructions based on literature-specific syllabus fared much better than the control group. The findings have impacts over the currently adopted syllabuses and stressed the benefit of literature oriented language activities.

Key Words:

Literary Criticism, Communicative Skill, Motivation, Symbolic Expression, Cultural Information, Emotional Domain, Social Discourse

Introduction

Currently, one could sense a renewed interest that has been generated in the teaching of literature in the language class and a lot of comments have been made on the subject. But in the recent past, inclusion of literature in the language curriculum did not gain such popularity. At one time, it was a component in courses without any justification. Later although there was a greater emphasis on the spoken language classes, teachers were not keen in using literature in language classes.

Adoption in Three Models

In the 1980's a new track in language teaching originated. The place of literature in the ESL was both challenged and supported and ultimately the teaching of literature has been adopted to embrace the framework of three models:

- i) The cultural model
- ii) The language model
- iii) The personal growth model. (Bottino, 1986)

The Cultural model can be considered as a means of transmitting important ideas and feelings. Also students can have a good opportunity to become familiar with a variety of words and expressions in the target language. This model helps students to learn about a culture and the associated customs, other than their own.

With regard to language model, learner centered activities are recommended. Students are encouraged to focus how linguistic forms convey literary meanings and go beyond the literal interpretation of the lines.

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The third model, personal growth model is interpreted as an engagement with the reading of literary texts. The aim behind performing the tasks suggested in the third model is to motivate students to read by selecting themes, to a large extent, related to their personal experiences. Personal growth model is student centered.

The language model and the personal growth model are often closely linked and the cultural model contains elements of the others.

These three models for the use of literature in the language class lead to many issues. One of these issues concerns the value of the use of literature for study purposes and its use as a resource. Its use as a resource becomes a means of providing many linguistic opportunities to develop language skills among students.

Objectives of the Knowledge of Literature: *Personal Pleasure in Reading*

The first object of the knowledge of literature is that of personal pleasure in reading. The teaching method should allow the students to involve actively in reading the texts. Students shouldn't be passive listeners of ready-made information. A student-centered approach motivating students to involve and respond personally would be very effective in using literature as a resource.

Different episodes in the literary text make students to identify with their experiences, thoughts and situations. They will be able to enjoy it by relating it to what they know about themselves and the world. If a learner can do it despite linguistic problems and if the selected text is sufficiently exciting and appealing, it will serve as an incentive to overcome some of the difficulties. Furthermore, learners who are involved with the text with keenness will want to work at his or her own reading and will gain from the exposure to the language of literature. The text becomes a stimulus for the development of language.

Mixed Ability Class

With regard to the subject of including literature to the language teaching curriculum and applying it to the undergrads of the University of Jaffna, there are various issues that have to be considered. One of such issues concerns the fact that the classes are of mixed ability. Therefore, there may be students who have the only knowledge of very basic structure and vocabulary, and some may not possess even these. Naturally, students having only a basic knowledge will have difficulty in understanding the literary texts. Literary materials will be beyond their scope and literature will be a deterrent and can't bring in positive results.

Although weak students are found in a group, more proficient ones are also there. In such cases, it will be the responsibility of the teacher to determine the extent of the literature to be taught in the class according to the ratio between the weak students and the able ones.

Writing Critical Answers – Pieces of Literary Criticism

Another issue is about writing the literary criticism. The general tendency that could be found among students is to rely on others' comments and to make generalizations devoid of any valid analysis or sufficiently evaluating the views already expressed. To overcome this, prior preparation in classes is stressed. There should be adequate extent of class discussion on how to deal with the theme of the text and critically analyze the work. Students have to be motivated to think for themselves and develop a personal response, rather than just responding or retelling what is already suggested by other critics.

Literary Texts Provide a Variety of Language Activities

Literary texts would supply materials for a wide variety of language activities that may develop linguistic skills. They also offer interesting subjects for class discussion which, in turn, enable students to juxtapose their own ideas and to link their own ideas to other related topics.

The Use of Literary Texts in Language Teaching

The notion that learning a second language can be facilitated and made interesting through literature, has generated issues that concern language teachers and curriculum planners. It is widely recognized that language learning should correspond to the learners' needs outside the classroom. The knowledge they gain within the classroom should provide them with the distinct ability to cope with different situations tactfully to satisfy their needs.

English Language teaching is nowadays closely linked with the definition of language as a communicative skill which is essentially required in career opportunities, higher studies, trade activities etc.

The general issue with regard to the declining trend of English language proficiency is inevitably concerned with the teaching methods selected and adopted by language teachers. Teachers need to concentrate on teaching how language can be used rather than teaching about the language. Students' ability to use the language for multifarious purposes should be developed. Teachers should have a thorough understanding about the differences between teaching about the language and communicating in that language. Many teachers possess the misconception that knowledge about the language structure will lead the learners to use the language for communicative purposes.

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Hence, as noted, there is a great gap between the students' knowledge about the structure of the language and their ability to use that knowledge for communication.

Bridging the Gap between Knowledge about the Structure and Ability to Use That Knowledge

To bridge this gap, and to motivate students to communicate, a syllabus the contents of which are identical to the features of real life social contexts should be designed. It is literature that can provide sufficient information about the society and its values, beliefs, preferences and priorities and customs in a typical form of language. The learner would be able to experience the real world within the classroom. The intellectual faculty of the learners needs to be further developed and they should have the access to various kinds of linguistic and literary expressions and interactive functions of the language. Learners should be trained to contextualize the linguistic elements in order to enable them acquire grammatical knowledge implicitly. To achieve this target, adequate language practice should be made available. Learners should be encouraged to use their knowledge about the rules of the language to function in that language successfully to fulfill their day-to-day requirements.

Literature and Real Life Situations

Literature exposes the language functions in real life situations outside the formal or artificial environment of the classroom. Literary elements like short stories, fables and dialogues will enable learners to use different forms of the language demanded by different situations.

In terms of language teaching, we can recognize a definition given by Baird (1969:203) for literature. "Literature is the use of language effectively in suitable conditions." Language teaching can be very effective with the use of literary texts, since language is appropriately adopted according to the contexts of the events, in literary texts.

Widdowson (1982) remarked that although the place of literature in language teaching was popular once, its prominence declined as language studies have been subjected to the influence of linguistics. It is generally argued that literature shouldn't be linked with language studies since its structural complexity and deviation from grammatical rules would impede learning. Therefore literature does not lead to the attainment of either linguistic competence or communicative competence.

Povey (1967) maintained that linguistic difficulty of literature has been exaggerated; It is not always essential for readers to comprehend the text fully to elicit information. Literature, of course, with its symbolic expressions of vocabulary and complex syntax can be effective sources for developing language skills.

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Similarly cultural information that could be gathered from literature reflects the culture of a nation. Literature can also make students acquaint with the social and cultural values of the natives. (Adeyanju, 1978)

Also it should be noted that in some instances, alien, heavy and redundant type of literature, which is not related to students' immediate problems, could pose threats. Hence the opportunity for creativity is very much restricted. During the course of instruction, the teacher introduces literary terms, explains the semantic features of words and ultimately asks the students to critically comment on the literary piece, the cultural orientation of which may be far from the non-native speaker. Consequently, students are forced to respond by memorization. In some other instances, due to the non-interactive mode of the conduction of class, students are unable to respond but remain passive.

Encouraging Creative Process

A literary material promotes the creative process in the minds of the students. Literature motivates students to read in English. It is a vehicle demonstrating soundly the language use and introducing cultural norms. The literary texts to be selected should be in accordance with the linguistic and conceptual levels of students. Literary texts illustrate how language functions in contexts. They also show how language could be used in which conditions and situations.

The use of literary texts in language teaching can be summarized, as follows.

- Literary texts will help to develop all the four language skills.
- By using and analyzing literary texts, students are able to familiarize with real life events and experiences.
- Through the use of literary texts, it will be possible to realize the individual and societal developments.
- They enable the readers to develop a cultural awareness. Also, they become effective means to keep away from the mother tongue interferences.
- Literary texts promote the students' analytical and criticizing skills.

Benefits of Using Literary Texts in Second Language Classrooms

It seems to be obvious that literature becomes an excellent source promoting language acquisition. In second language classrooms, students are expected to read and write to have a better vision and understanding of the input in the target language. It is often emphasized that students should have a clear understanding of the written input in English so that they can process and interpret the target language. By providing interesting contents for the students to generate input, negotiate meaning and develop motivation, literature serves effectively in the Language in India www.languageinindia.com

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process of language acquisition.(krashen,1985). Since different shades of meanings are contained in literary pieces, they can create interest among students during classroom activities that demand conveyance of feelings and opinions. Such activities have the potential to develop interaction among students. They grow keen in taking part in the activities and enjoy contextualize the meanings corresponding to different social and cultural situations.

The use of literature generates motivation among students. Literature strikes positively the affective and emotional domains of students and arouses them to involve with marked eagerness in identifying the intended meaning in specific situations. Course books do not seem to have contents supplying materials for any emotional and reflective engagement with the target language. Course books devoid of contents having the capacity to create an impetus for active engagement of learners, focus only on the structural aspects of the language. The structure-based course books ultimately, end up in, to a great extent of adverse impacts such as hatred and monotony among learners. Such course books fail to bring in a true sense of involvement which is quite essential for effective communication that won't be the overall goal of language learning.

Learners are deprived of the emotional engagement with the target language and denied the pleasure of using the language for imaginative and reflective purposes.(Mc Rae, 1991). Motivation, as an engaging force persuades learners to explore more of the foreign language system, beyond the mere mechanical aspects. When a reasonable time is spent on exploring a piece of literature, i.e. a novel or a short story, the learner imbibes the socio-cultural information and gets acquainted with the text.

Krashen (1982) illustrated how the engagement with the written input in the second language leads to the success of second language acquisition, through his affective filter hypothesis. Greater benefits that can be derived from the use of literary texts in place of the form-based course books should be taken into account, in this context. Hence the discussion here can be realized to have stressed the inevitable need for the students' personal sense of involvement in reading and writing for reaping the optimum out of the language input found therein.

Another benefit of the use of literature in second language acquisition is that it creates cultural awareness in students. Literary texts are repository of people's attitudes, beliefs, preferences and priorities, customs, traditions etc. across the cultures of the world. Though literary texts mirror a comprehensive view of culture, they may also pose some problems pertaining to the realization of culture in the target language. The cultural dissimilarity may create a "cultural shock" which, in turn, hinders the learning process. Besides, strangeness associated with a new culture may be an element causing confusion among learners. For example, let's consider the following popular nursery rhyme.

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Baa Baa Black Sheep
Have you any wool
Yes sir, Yes sir
Three bags full
One for my master
One for the dame
And one for the little boy
Who lives down the lane.

The black sheep and wool as mentioned in the rhyme may not be familiar to all the learners. Sri Lankan native children may not be aware of the use of woolen clothes or caps worn by people in cold regions to keep themselves warm. Lack of comprehension may impede learners from appreciating the poem and subsequently their interest to learn the language declines.

In place of the above rhyme, the author of this article suggests the following rhyme composed by him, in which learners come across native cultural elements with which they are very familiar.

Cluck Cluck Gray Hen
Have you any eggs
Yes Ma, yes Ma
Three big ones
One for my Mistress
One for the Babe
And one for the Beggar Boy
Who strays by the Beach

Developing Appropriate Social Discourse

Literature can be viewed as social discourse. “This can serve to free literature from its exclusivist and isolationist credentials by ‘democratizing and dehegamonizing’ access to literature (Carter, 1997: p109). This approach to literature as social discourse can enable students to understand the target culture of literary texts. Students are able to study the social, political and historical events, which are behind the background of a particular piece of literature.

Lazar (1993) maintained that literature enables the reader to contextualize how a member of a particular society might behave or react in a specific situation. Students are able to discern how people observing different cultures relate to their experiences and assess them. It leads the students to identify the core of human situations that may occur cross-culturally.

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Literature and Language Awareness

Another benefit of the use of literature is to promote language awareness among learners. Lexical and syntactical aspects found in respective contexts become a source of interest for students. Lengthy exposure to literary texts makes students to familiarize with the promiscuous language features and motivates them to develop a tendency of response. In the course of response, students become aware of how meaning as an outcome of response would lead to the imaginative use of language. (Collie and Slater, 1987)

Misconceptions about the Use of Literature

Some misconceptions regarding the use of literature in the language class are found to prevail. One such misconception is that teaching the grammar of the language is neglected as the language used in literature is complex and specific. In fact, the use of literature promotes language acquisition. Through provision of contexts for processing and interpreting new language, literature corresponds to the limited input of the class. Literature can significantly help students to internalize vocabulary and grammar patterns. (Widdowson, 1975).

Another illusion is that literature has nothing to do with the students' academic or professional goals. Nevertheless one ought to recognize the fact that literature contributes toward the achievement of these goals by fostering considerably an increase in reading proficiency. Gaies (1979) held that in the process of reading, a sound interaction between the reader and the writer occurs.

This implies that reader is willing to interact with a particular text, and for this reason, the motivational factors involved in reading assume critical importance. Therefore, by developing reading proficiency, literature would facilitate attaining the students' academic and professional goals.

The Method Adopted in the Present Research

Fifty undergraduates in the 3rd year in the Faculty of Arts of the University of Jaffna were selected for the study. They were divided into two target groups of students. Group A is considered as a Control group and Group B, Experimental group.

Materials

Two different syllabuses were utilized for teaching English language skills. For **Group A**, instructions on language skills, without any exposure to literary discourse were imparted. **Group B** was exposed to a syllabus that comprised different literary forms.

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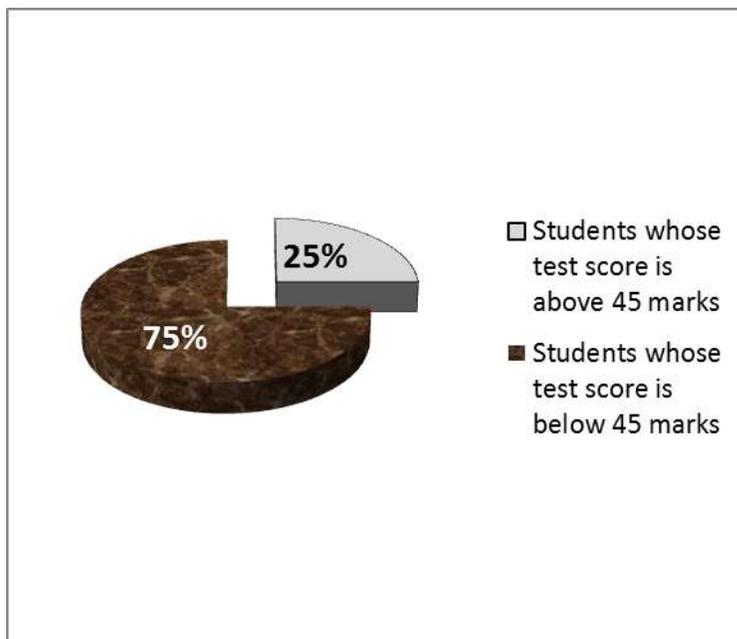
Procedure

A Pre-Test was conducted among the two groups to assess the language skills that were to be taught to them. These groups were imparted instruction for a complete semester. After the end of the programme, these groups were given Post-Tests based on their different syllabuses.

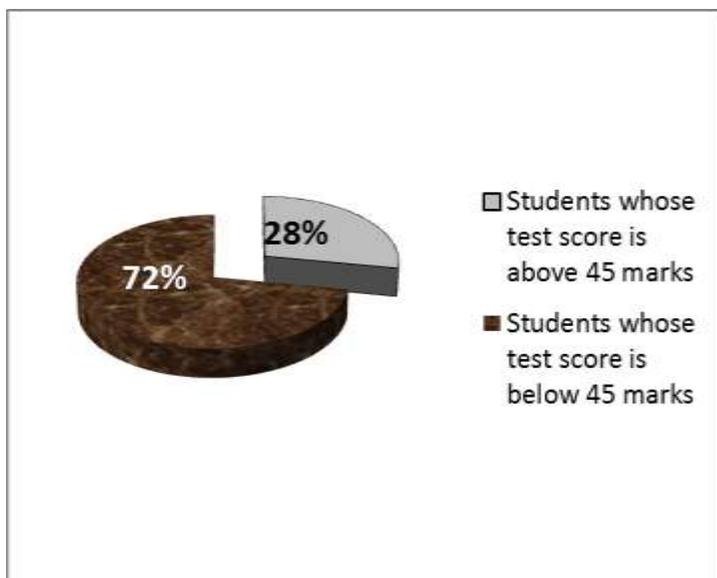
Results and Data Analysis

The students' performances in the Tests administered to the two groups represent the outcome of the current research.

The result of the Pre-Tests reveals that the level of basic language skills of the groups remains almost the same, with very little variation that can be ignored. The result of the Control group is represented by Pie-Chart-A and that of the Experimental group is demonstrated in Pie-Chart-B.



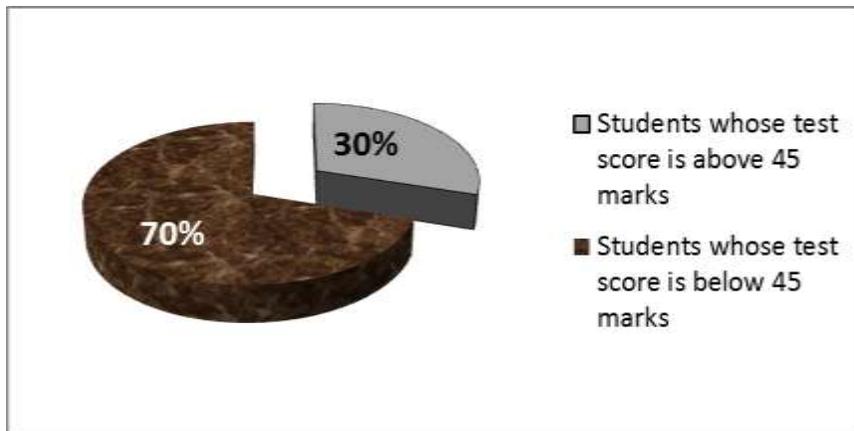
Pie Chart - A



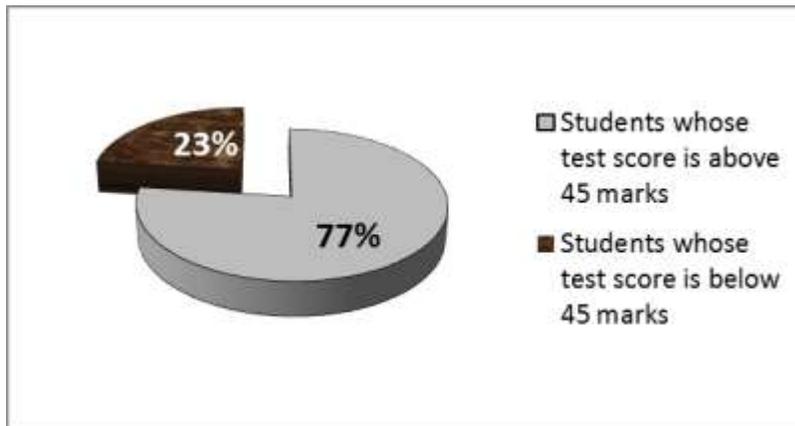
Pie Chart - B

The duration of the study was for a complete semester in which the control group was given instructions in language skills through a language specific syllabus devoid of literary discourse. The experimental group was taught to promote their language skills through exposure to literary texts.

At the end of the semester when the instructions were complete, the two groups were administered Post-Tests based on the contents of the syllabuses designed separately for them. The result of the Control group is shown in Pie-Chart C and that of the experimental group in Pie-Chart D.



Pie Chart - C



Pie Chart - D

Pie-Chart C and D reflect the findings of the Post-Tests administered to the Control group and the Experimental group. The experimental group has remarkably greater gain in language skills than the control group. These findings are an obvious indication to the fact that the inclusion of literary text has helped the students of the experimental group to rise dramatically in language proficiency.

During the teaching sessions, the following observations in terms of the students' performance in both groups were made.

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In case of the classes of the Experimental group, various literary forms such as a novel, drama and poetry were used and subsequently the following benefits were identified.

Using Novel

The use of novel was found to be a remarkably effective technique motivating students to acquaint with the linguistic system as well as life in relation to target language since characters in the novel resemble people in real life. Novels not only depict but also enlighten human life. Novels lead the students to develop their knowledge about different social groups and the nuances of their related cultures. Since novels reflect real life experience, students' motivation was promoted, their creative thinking initiated and their ability to use the language for critically analyzing the aspects of life heightened.

Using Drama

Drama offered an excellent resource for students to develop their communicative competence. Students came across grammatical features in contexts and practiced to use the language for expressions in the form of argument, apology, request, complaint etc. Drama is identified to have the capacity to enable the students to be well versed in the target language and culture. Through identifying their own experience with that expressed by drama, students were able to manipulate the language to perform their functions successfully in the natural environment. As drama involves deep, intense emotions, students were found to make use of drama to have a better and balanced understanding of the worldly phenomenon and use the language to regulate and control their emotions in daily life.

Using Poetry

It is discovered that through the inclusion of poetry, students became familiar with figures of speech, such as similes, metaphors, irony, imagery, personification etc. which form a part of daily language use. Students reacted strongly as poetry seems to be a powerful tool evoking strong feelings among them. Students were able to recognize the rules governing the organized form of language and, instead of undergoing repeated drills and oral practices which are supposed to be form-focused traditional teaching methods, they could use the language for communicative purposes. Further, they improved their vocabulary significantly. Poetical works became a source of different interpretations for different students. They could develop a sense of exploration and delve into the verse with refreshed interest.

In case of the control group, the students' keenness in learning the language was relatively less. Most of the students attempted to memorize the meanings of words and to learn grammar and syntax without any ability to apply such knowledge for interaction. Their experience within the classroom was different from their experience outside the classroom, as the input during the class seemed to be probably unnatural. Students were in a rigid condition that could not allow them to interact freely with the teacher or peers because the teacher spoke most of the time while the students remained passive during the classes.

Conclusion

The analysis of the Post-Test result indicates that the experimental group scored higher marks due to the effect and usefulness of the literary texts they studied. The inclusion of literature in the curriculum of the non-native learners of English leads to remarkable gains. As the use of language is manipulated in different social contexts, the linguistic competence and the communicative competence are simultaneously developed among learners through literary texts.

Further, literature would create an intercultural awareness while sustaining a tolerance for diversity.

The teacher should realize the responsibility of selecting short stories suitable to the level of the students to promote their reading habit and to provide better chances to contextualize linguistic elements.

When selecting a literary text, teachers should focus on the link between the objective of language learning and the text under consideration. In this respect, learners' needs, level, ability and interests should be taken into account. For pupils in primary classes, short rhymes and games are some sources offering fun for them. As matured learners are concerned, literary texts become an effective means to acquire the language for communicative purposes. As grammar is learnt implicitly in the process of learning a language through literature, learners are able to master the native-like speech. Teachers are supposed to realize that the real outcome of language teaching should be the ability of spontaneous and effective use of the language, in the part of students.

It is apparent that literature can be effectively exploited to acquire language and used for communication in real life situations.

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Comparison of Confrontation Naming and Generative Naming Abilities in Neurologically Healthy individuals and Persons with Aphasia

Abhishek. B. P.

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Alterations in Communications

Advanced research methods in cognitive neuropsychology have emerged from different theoretical approaches and cognitive principles. These methods facilitate better understanding in the alterations in communication resulting from neurological disorders in adults. Cognitive Neuropsychology aims to understand the processing mechanisms of normal and injured brain by means of functional architectural models of information processing. It assumes that linguistic abilities are organized into multiple processes within subsystems that interact with each other, while maintaining some degree of independency.

Naming Process

Naming is one of the most important subsystems of the language module. It is also a simple method, employed in understanding the lexical semantic processing. The task requires retrieval of semantic and phonological information, which is organized in a memory system

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and assessed depending on the specificities of a given stimulus. Based on the principles of Cognitive Neuropsychology, the visual confrontation naming process (in which the participant has to name a representational picture or object, based on visual input) comprises of three basic stages:

1. Identification of the represented object, which activates the mental structural representation
2. Access to its semantic representation, which allows the object to be recognized
3. Lexicalization or activation of its phonological representation, by which the name of the picture or object is retrieved and uttered.

Lexical and Non-lexical Processing

Naming involves lexical and non-lexical processing. The lexical processing refers to the storage and retrieval of semantic information and abstract representations connected with a particular word. The non-lexical processing refers to the detection and perception of the visual stimuli that triggers the lexical process.

Naming Disturbances

Naming disturbances encompasses paraphasias (unintended word substitutions), which may be, phonemic (substitution of one phoneme for another), semantic (substitution of one word for another semantically-related word, as in “crow” for “parrot”, or random paraphasia where the substituted word is not related to the target word by any means, neologisms (the creation of non-words), circumlocutions (an attempt by the participant to “explain” the characteristics of items when they cannot name properly), and perseverations (repetition of words or fragments of sentences, which are sometimes meaningless).

The language disturbances such as paraphasia, circumlocution, and neologism and the utility of cues, in naming tasks can explain the nature of breakdown in various stages of lexical access. The need for semantic cues, in which the meaning of the word (through its function, for example), indicates a visual deficit, or inability to recognize the picture or object which indicates the breakdown at the first stage of lexical access whereas the need for

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phonemic cues, whereby the first phoneme or syllable of the word is given to the participant by the examiner, is found useful for persons who have difficulty in retrieving the phonemic segments related to the word and is suggestive of breakdown in the latter part of lexical access

Naming Deficits

Naming deficits is the most common symptom found in aphasia irrespective of the type of aphasia. Aphasia is the most frequent language disorder, it is defined as a linguistic impairment caused by a neurological lesion that may compromise comprehension and/or production of language in its oral or written forms. Aphasia is caused due to numerous reasons including the vascular etiologies (such as stroke), brain trauma, inflammatory processes and tumours. In persons with aphasia, naming difficulties may occur due to breakdown at either semantic or the phonemic levels.

Confrontation Naming

Confrontation naming is the most commonly used task in assessment of word retrieval deficits in persons with aphasia. Most of the test batteries used in the assessment of aphasia (WAB, BDAE) employs confrontation naming. It involves naming of proper nouns. In response to pictures, mainly line drawings. The target items in any confrontation naming test comprises of frequent and infrequent nouns in order to test various levels of difficulty. The responses are elicited in response to question by the examiner such as “What is this”? Confrontation naming test is sensitive for persons with aphasia ranging from mild to severe aphasia. Persons with mild aphasia may experience difficulty in naming infrequent nouns whereas persons with severe aphasia may exhibit difficulties in naming most of the proper nouns.

Confrontation Naming and Lexical Semantic Deficits

Several researchers have employed confrontation naming in studying lexical semantic deficits in persons with aphasia. Some of the studies are summarized in this section. Goodglass and Kaplan (1976) administered confrontation naming task on five persons each, with Wernicke’s, Broca’s, conduction and anomia aphasia, and found that persons with

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conduction and Broca's aphasics produced initial sound correctly and they also produced, the correct number of syllables as in the target word's metrical frame. Persons with Wernicke's and anomic performed the tasks in all or none fashion.

Goodglass (1981) conducted a qualitative analysis in order to study the nature of errors in these types of aphasics and reported phonemic paraphasias to be associated with conduction aphasia, neologism and unrelated errors to be more in persons with Wernicke's aphasia and circumlocutions to be associated with persons with anomic aphasics.

Martin and Safran (1992) administered confrontation naming on persons with fluent aphasia and observed a high proportion of formal paraphasias (word utterance that are phonologically similar to target words). William and Canter (1987) found high concentration of semantic paraphasias elicited on confrontation naming for persons with posterior Aphasia.

Shantala (1997) studied aphasic naming ability in persons with Broca's, anomic and Wernicke's aphasia using confrontation naming, generative naming and responsive naming tasks in Kannada language. Error analysis in confrontation naming showed neologisms and phonemic errors to be the most in Brocas Aphasics. Phonemic errors were found in persons with anomic aphasia.

Lexical Retrieval and Confrontation Naming

Although confrontation naming is sensitive in exposing the naming deficits in persons with aphasia, some researchers opine that the confrontation naming task over-simplifies the mechanisms underlying lexical retrieval and it is known to assess for convergent lexical retrieval which is one aspect of lexical retrieval mechanism, where a person names the picture when shown to him and node with the highest threshold gets activated, unlike word list generation/generative naming where a person has to name all the entries under a lexical category which uncovers another facet of lexical retrieval, the divergent mechanism of lexical retrieval.

Generative Naming

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Generative naming is advantageous compared to confrontation picture-naming as the task taps a different component of word retrieval by constraining the speaker to a semantic category and not to a specific label in contrast to the picture naming task. Hence confrontation naming task is to be combined with generative naming/word list generation in order to study lexical retrieval deficits in detail.

Generative naming involves free recall of names in a particular semantic category. The tester names a semantic category and the participant has to name entries under the category. It assesses for the divergent retrieval. It is found to be the most difficult task for persons with aphasia. A neurologically healthy individual is known to name at least 10-15 entries for semantic categories like animals, vegetables, fruits, vehicles and others (Harold 2001).

WAB (Western Aphasia Battery) involves listing the name of animals within 120 seconds. BDAE (Boston Diagnostic Aphasia Test Battery) also involves a similar task, listing down the names of animals within 120 seconds.

Generative naming abilities are often studied in degenerative conditions such as dementia and some researchers have even used generative naming task or word list generation task in aphasia and compared the performance of persons with aphasia with neurologically healthy individuals.

Basso, Capitani and Laiciana (1998) studied generative naming ability in six persons with aphasia (Broca's, Wernicke's & anomic) and 15 neurologically healthy individuals by using 4 categories, i.e. animals, vehicles, vegetables and birds. They found out a statistically significant difference between neurologically healthy individuals and persons with aphasia. Highest mean value was obtained for the lexical category animals followed by vehicles, fruits and vegetables. Within the aphasia group, persons with anomic aphasia performed better followed by persons with Broca's and Wernicke's Aphasia.

Warrington (1999) studied word generation task in persons with Wernicke's aphasia using four lexical categories animals, birds and food items and common objects. The performance was compared with the performance of neurologically healthy individuals.

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Mean values were extracted and was found that the mean scores were considerably less for persons with Wernike's aphasia.

The performance of persons with aphasia on generative naming or word list generation has been combined/ compared usually with confrontation naming task. Shanthala (1997) used three types of naming tasks confrontation naming, generative naming or word productivity task, and responsive naming. The study was carried out on 3 persons each from Wernicke's and Broca's Aphasia and anomic aphasia type. Persons with anomic aphasia performed better compared to others on all the three naming tasks. High correlation was between generative naming and the confrontation naming for all persons with all the three type of aphasia.

Generative Naming in Bilingual Aphasia

Generative naming or word list generation have been carried out even in persons with bilingual aphasia. Robert and Dorze (1991) used word list generation task in persons with Spanish-English bilingual aphasia. Performance was better in English which was the native language of the participants. Among persons in the aphasia group, persons with anomic aphasia outperformed persons with Wernicke's and Broca's aphasia.

Arpitha (1997) used generative naming task, confrontation naming and responsive naming tasks on 10 Kannada-English bilingual aphasics and found statistical significant difference between the two languages in aphasics, better performance was seen for Kannada language. High positive correlation was found among generative naming and other naming tasks. Generative naming tasks are a part of all the naming test batteries and standardized tests used for aphasia assessment. It can be employed easily to test word retrieval but few issues, such as the lexical category/categories to be undertaken for testing, number of lexical categories and the duration to be given for the list generation have to be taken into consideration.

Correlation Studies

Although a few studies have been carried out in the past, studying the performance of persons with aphasia on confrontation naming and generative naming tasks, most of the

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studies employ correlation to study the relationship in performance on these two tasks rather than comparing the results qualitatively and quantitatively, i.e., in terms of the number of correct entries for a lexical category in confrontation naming tasks and number of correct entries in the corresponding lexical category under generative naming task to see if the performance is alike or unlike for the two tasks in persons with aphasia hence supporting a need to study the performance by employing this type of analysis.

The performance of persons with different types of aphasia has not been highlighted in context to these two tests on these tasks hence raises a need to study the performance of persons with different type of aphasia on these two tasks

Need of the Study

1. Confrontation naming assesses for convergent retrieval and generative naming assesses for divergent retrieval, by combining these two tasks, information about the two mechanisms of lexical retrieval can be tapped in persons with aphasia.
2. A detailed analysis by computing the number of correct entries under each lexical category of confrontation naming and comparing the number of correct entries in the corresponding lexical category of generative naming task would reveal the difference in performance across the two tasks and would provide an insight about the complexity of the tasks.

Objectives

1. To compare the performance of neurologically healthy individuals and persons with aphasia on generative naming and confrontation naming tasks.
2. To analyse the number of correct entries on confrontation naming under each lexical category and compare the value, with the number of correct entries under each lexical category, on generative naming task.
3. To study the performance of persons with different types of aphasia on confrontation naming and generative naming tasks.

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Method

The primary objective of the current study was to study generative naming ability in neurologically healthy individuals and persons with aphasia. The second objective of the study was to explore category specific naming deficits in persons with aphasia.

Participants: Thirty neurologically healthy adults and eight persons with Aphasia were considered for the study. The neurologically healthy adults were screened using Mini Mental State Examination (MMSE) to rule out neurological, communicative or sensory impairment. Persons with aphasia who had a history of cerebrovascular accident confirmed by neurologist and computerized tomography scan were enrolled. Western Aphasia Battery (Kertez, 1983) was administered on each of these participants. Out of seven persons with aphasia, three persons had anomic aphasia; two participants each had Wernicke's and Broca's type of aphasia. The age of the participants ranged from 45 to 60 years. Kannada was the native language of all these participants. The details of each participant in the aphasia group is summarized in Table 1.

Sl No	Age / Gender	Native language	Type of aphasia
1	38/M	Kannada	Wernicke's aphasia
2	60/M	Kannada	Anomic aphasia
3	54/M	Kannada	Anomic aphasia
4	48/M	Kannada	Anomic aphasia
5	50/F	Kannada	Anomic aphasia
6	52/M	Kannada	Broca's aphasia
7	56/M	Kannada	Wernicke's aphasia
8	63/M	Kannada	Broca's aphasia

Table 1: Details of the participants

The test was administered in two phases. In the first phase, generative naming/verbal fluency task was administered on the participants. .and in the second phase Kannada version of BNT(Sunil & Shymala. 2009) was administered.

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I Phase: The lexical categories selected, under the generative naming/word fluency task for the study were animals, fruits, vegetables, common objects, vehicles, body parts and birds. Generative naming/ word list generation task was administered to test for category specific naming and also determine divergent retrieval across the different lexical categories.

Test administration: The examiner named a lexical category/semantic field and the participant had to name as many items as possible in that given category in Kannada. The participants were given a time interval of approximately 120 seconds (two minutes) to respond with as many entries under a specific category, as they could recall within the stipulated time.

Scoring: The number of items named under a lexical category was noted. A score of '1' was given for each correct response. Incorrect responses were given a score of 0.

II Phase Kannada version of Boston Naming Test (BNT) was administered on the neurologically healthy individuals and the seven persons with aphasia. BNT (Boston naming test) (Sunil, Vijetha & Shyamala, 2010) is a test used in confrontation naming. It comprises of 57 line drawings of noun objects. The participants were asked to name the stimulus within 60 seconds. **Scoring:** The response was scored as correct or incorrect response. The correct response was given a score of '1' and the incorrect response was given a score of '0'.

The errors committed by persons with aphasia on confrontation and generative naming tasks was analysed by employing Table 2

Table 2: Response scoring pattern

Sl no	Error type	Description
1	Phonemic error	Responses which were approximations of target word with one or more phonemes
2	Extended circumlocutions	Responses which were extended utterances related to the utterance
3	Semantic Errors	Responses which were semantically related to the target
4	Unrelated response	Responses which were not related to the target semantically
5	Neologisms	Responses which were not real words
6	Grammatical errors	Responses which were deviated from

		the target only by alteration of the grammatical forms
7	Perseveration	Repetitions of the previous response
8	Interference	Responses which were named other than the tested language
9	Category interference	Responses which belonged to any other lexical category other than the intended category tested
9	No response	If no response was elicited within the stipulated period
10	Half word responses	Responses which were half word or part word response to the target
11	Gestures	Responses where gestures were used to indicate the target

Results and Discussion

The primary objective of the current study was to compare the performance of neurologically healthy individuals and persons with aphasia on generative naming and confrontation naming tasks and the second objective was to analyse the number of correct entries on confrontation naming under each lexical category and compare the value, with the number of correct entries under each lexical category obtained on generative naming task.

The first task, i.e., the generative naming task is a free word association/open list generation task. The number of entries obtained under each of the 7 categories within the time period of 2 minutes was considered. Mean values were computed separately for neurologically healthy individuals and persons with aphasia and the score of each person was converted into percentage, for further analysis by dividing the score against the mean scores. This was done separately for the neurologically healthy individuals and persons with aphasia.

Lexical Category	Neurologically healthy individuals	Persons with aphasia
Vegetables	12	03
Fruits	08	03
Animals	11	03

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Birds	09	03
Common objects	14	04
Vehicles	08	04
Body parts	06	03

The second task, i.e., confrontation naming, is a closed task. The items on BNT were divided under 7 categories, i.e., animals, birds, vegetables, fruits, common objects, vehicles and body parts for the purpose of analysis in par with the generative naming task. Out of the 57 pictures on BNT 53 pictures belonged to the either of the 7 lexical categories mentioned above and the rest of the pictures were not undertaken for analysis as they did not belong to the any of these 7 categories.

The 53 pictures shortlisted for analysis comprised of pictures of 8 animals, 4 birds, 4 vegetables, 4 fruits, 21 common objects, 5 vehicles, and 4 body parts. Mean scores for each category was obtained separately for the neurologically healthy individuals and persons with aphasia. The scores derived on confrontation naming task was also converted into percentage by dividing it with the maximum score, for each category.

Table 3: Mean value for neurologically healthy individuals and persons with aphasia on generative naming task

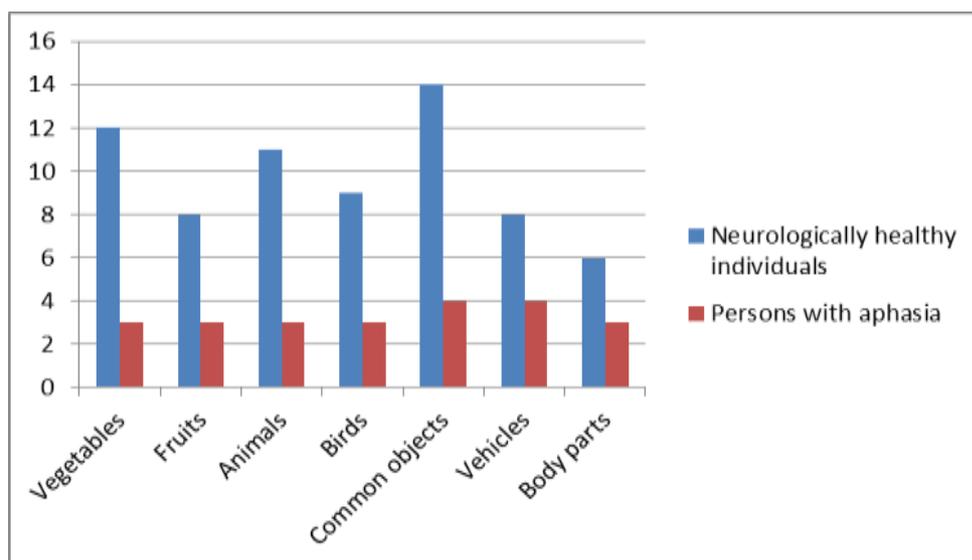


Fig 1: Mean value for neurologically healthy individuals and persons with aphasia on generative naming task

Lexical Category	Neurologically healthy individuals	Persons with aphasia
Vegetables	4	2.5
Fruits	3.84	3
Animals	8	4.75
Birds	3.25	2.25
Common objects	19.25	12.5
Vehicles	5	2
Body parts	4	3

Table 4: Mean value for neurologically healthy individuals and persons with aphasia on confrontation naming task.

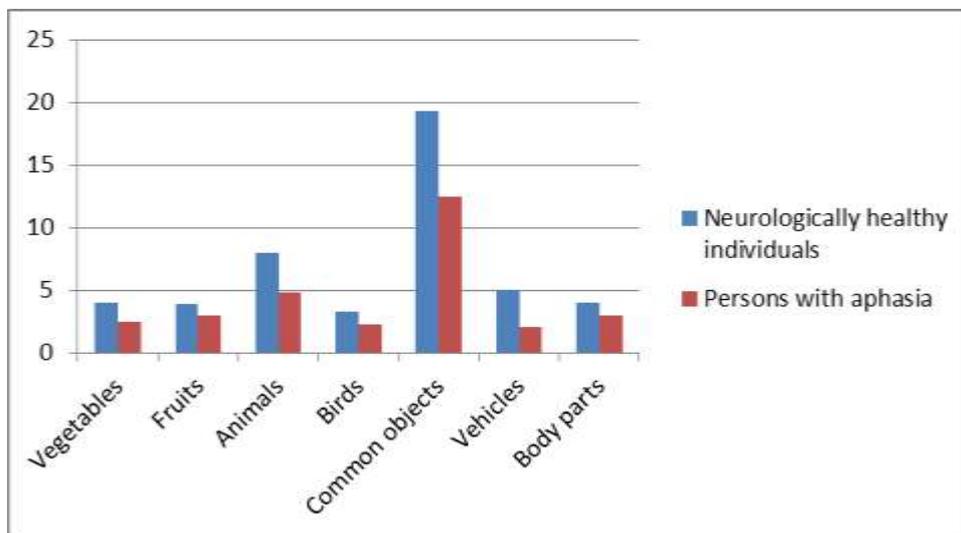


Fig 2: Mean value for neurologically healthy individuals and persons with aphasia on confrontation naming task

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As shown in table 3 and figure 1, the mean scores were higher for neurologically healthy individuals compared to persons with aphasia on the generative naming task; highest mean value was obtained for the lexical category common objects followed by vegetables, animals, birds, fruits, vehicles and body parts. For persons with aphasia, the highest mean value was obtained for the lexical categories common objects and vehicles, and the scores for the remaining lexical categories i.e. animals, birds, vegetables, fruits and body parts were same.

The mean values of neurologically healthy individuals and persons with aphasia on confrontation naming task is shown in table 4 and figure 2. For neurologically healthy individual's highest mean value was obtained for common objects, followed by animals, vehicles, body parts, vegetables, birds and fruits. For persons with aphasia, the lexical category common objects obtained the highest mean score followed by animals, body parts, fruits, vegetables, birds, and vehicles

As the objective was to compare the two tasks, the scores converted into percentage for each of the lexical categories for neurologically healthy individuals and persons with aphasia group were compared. As the data followed non normal distribution Non parametric tests were chosen. Wilcoxon's signed rank test for carried out to compare the generative naming task and confrontation naming test, For neurologically healthy individuals, the Z value and P value obtained for the different categories is summarised in table 5. No significant difference was seen across the two tasks for any of the lexical categories. For persons with aphasia, as shown in table 5, significant difference was seen for the lexical categories, common objects animals, birds vegetables, and body parts no significant difference was seen for the other two lexical categories, fruits and vehicles.

Lexical Category	P value Neurologically healthy individuals	P value Persons with aphasia
Vegetables	0.77	0.02
Fruits	0.63	0.17
Animals	0.10	0.04

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Birds	0.10	0.04
Common objects	0.22	0.01
Vehicles	0.18	0.09
Body parts	0.09	0.027

Table 5: P values obtained on Wilcoxon's signed rank test.

The number of positive and negative ranks was also taken into consideration as the objective was to compare the complexity of the two tasks; the number of negative ranks was high for persons with aphasia depicting that the performance of generative naming task was poor compared to confrontation naming.

The third objective was to compare the performance of persons with different types of aphasia on confrontation naming and generative naming tasks. Four persons with anomic and two persons each with Broca's and Wernicke's aphasia were enrolled for the study. The mean values for the various lexical categories on Generative naming task and responsive naming are as shown in table 6 and table 7. Mean values depict that persons with anomic aphasia perform better compared to persons with Wernicke's aphasia and Broca's aphasia.

Sl No	Anomic aphasia	Wernicke's aphasia	Broca's aphasia
Animals	07	03	02
Birds	05	05	01
Vegetables	07	06	03
Fruits	05	04	00
Common objects	05	05	02
Vehicles	04	05	03
Body parts	05	03	02

Sl No	Anomic Aphasia	Wernicke's aphasia	Broca's aphasia
Animals	5	3	2

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Birds	3	2	2
Vegetables	5	4	2
Fruits	4	3	1
Common objects	5	5	1
Vehicles	4	4	1
Body parts	4	4	1

Table 6: Mean values for various persons with anomic, Broca 's and Wernicke's aphasia on Generative naming task

Table 7: Mean values for various persons with anomic, Broca 's and Wernicke's aphasia on confrontation naming task

Discussion

The implications which can be drawn from the results is that

- 1) Neurologically healthy individuals performed better compared to persons with aphasia on generative naming task as well the confrontation naming task.
- 2) There was no significant difference across confrontation naming and generative naming tasks for neurologically healthy individuals on all the lexical categories
- 3) There was statistically significant difference across generative naming and confrontation naming tasks on 5 out of 7 lexical categories for persons with aphasia
- 4) The number of positive and negative ranks elicited on Wilcoxon's signed rank out to determine the task complexity revealed that the persons with aphasia performed well on confrontation naming task compared to generative naming task.
- 5) Among persons with aphasia, persons with anomic aphasia performed well compared to persons with Wernicke's aphasia and Broca's aphasia.

The mean values derived on generative naming and confrontation naming tasks showed the neurologically healthy individuals performed well compared to persons with aphasia on generative naming and confrontation naming task further, the mean values, obtained for these two groups, showed that there was a statistically significant difference in

the performance between the two groups. This is in consonance with the studies carried out William and Canter (1987); Shantala (1991).

The study also focuses on determining if there is difference in the performance of neurologically healthy individuals on confrontation naming and generative naming tasks. The results derived on Wilcoxon's signed rank test showed there was no significant difference on the two tasks for the neurologically healthy individuals whereas there was significant difference for the persons with aphasia group.

The persons with aphasia performed well on confrontation naming over the generative naming. Confrontation naming is regarded as a simple task compared to generative naming as the confrontation naming task supplements the person with pictures which makes the task more redundant compared to generative naming. (William & Canter 1987).

Neurologically healthy individuals were able to perform well on the task of generative naming as well as confrontation naming which means that they did not require clues in the form of pictures to perform or in other words the absence of pictures in the generative naming did not make any difference; whereas persons with aphasia could recall the names well, in the presence of pictures as in confrontation naming but performed poorly when they were asked to recall names without presenting the pictures.

The third objective was see if there was difference in the performance of persons with different type of aphasia on confrontation and generative naming task, Mean values showed among persons with aphasia, persons with anomic aphasia performed well compared to persons with Wernicke's aphasia and Broca's aphasia. The results obtained are in consonance with the findings by Basso, Captaini and Laiciona (1998) who studied generative naming and confrontation on 20 neurologically healthy individuals and two persons each with Wernicke's, anomic and Broca's aphasia and reported highest mean value for persons with anomic aphasia. The results are also in congruence with the study carried out by Shantala (1997), who studied generative ability alongside the other types of naming in two persons each with Wernicke's, Broca's and anomic aphasia, persons with anomic aphasia obtained highest mean value on generative naming task.

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The conclusions which can be drawn from the present study is that the generative naming task is relatively complex compared to confrontation naming task and is likely to tap the severity of aphasia. Generative naming assesses for divergent retrieval which is one facet of lexical semantic processing and confrontation naming assesses for convergent retrieval though the two tests serve different purposes, two tests are combined will provide useful information about the two mechanisms of lexical semantic processing. Though there is no significant difference between the two mechanisms in neurologically healthy individuals, one of these mechanism may be selectively impaired or may be relatively intact over the other in persons with aphasia. Persons with anomic aphasia performed well on both the tasks compared to the persons with Broca's and Wernicke's aphasia, however the sample size of this subgroups considered for the study is less and generalisation could not be drawn.

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Grammatical Moods in Bodo

Aleendra Brahma, M.A. (Double), M.Phil., Ph.D. Scholar

1.0 Abstract

Every clause or sentence of a language has a basic illocutionary force on the basis of which it is categorized under any of the types, namely, affirmative, interrogative, imperative, optative and exclamatory. The illocutionary force is nothing but the modality of the clause/sentence, and this modality is signaled by a device called mood. So, mood is the grammatical device that signals any of the modalities like fact, command, question, wish or conditionality, etc. It may be a distinctive grammatical form/element such as a grammatical category (affix) or a post-position of a verb. However, illocutionary forces categorize clauses/sentences into limited kinds while moods can categorize them into larger kinds. This paper investigates different types of morphological and syntactic moods in the Bodo language.

As the enumeration of different types of moods by Sheridan (2010), there are, at least, ten types of grammatical moods in Bodo, namely, energetic ({-thar} and {-mar}), subjunctive or conjunctive ({-bla... -guo}), imperative ({-du}, {-lai} and {-nai}), optative ({-thun}), Cohortative ({-ni}), permissive ({-hu}, {-ni}), dubitative ({-gun} and {k^huma}),

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interrogative ({-na}, {na-} or {-da}), inferential or renarrative ({-nu}), precative ({-zen}) and decisive ({-si}) mood. Of them, subjunctive, imperative, permissive, optative, interrogative, precative and presumptive moods are expressed morphologically; dubitative is expressed both morphologically and syntactically whereas dubitative and inferential are expressed syntactically.

Moods can be sub-categorized into two different kinds, namely, realis or factual and irrealis or contrafactual or contrafactive. There is only one realis mood in Bodo while the majority of irrealis kinds of grammatical mood are found.

1.1 Introduction

The investigation of a large number of languages suggests that what has traditionally been called "mood" is only one type of grammatical sub-category, another such sub-category being "modal system" within a wider grammatical category "modality" (Palmer 2003). However, mood and modality are not so easily defined as tense and aspect. A definition often proposed is that modality is the grammaticalization of speakers' (subjective) attitudes and opinions (ByBee 1994). Mood is a feature of the verb that reflects the speaker's attitude toward what he is saying. Of course, in all languages there are lots of ways that a speaker can reflect his attitude toward what he is saying: through intonation, by overtly commenting upon what he says, by raising his voice or swinging his fist (McShane 2003). And, modality differs from tense and aspect in that it does not refer directly to any characteristic of the event, but simply to the status of the proposition (Palmer 2001). Mood is more or less related only to a verb phrase, a clause or a sentence though it has often morphological structure. And, the mood of a verb designates the relationship of the verb's action relative to reality. It is broadly of two kinds, namely, *realis* or factual and *irrealis* or contrafactual or contrafactive. Both realis and irrealis kinds of mood exist in almost all the languages. But, morphologically distinct forms of all kinds of mood are hardly found in a particular language. However, they are expressed in most languages either morphologically or paraphrastically or through the different manners of expressions. However, as one of the inflectional categories of verb different kinds of mood used in the Bodo language are discussed below.

In Bodo, all kinds of realis mood such as indicative, declarative, evidential, etc. are not expressed morphologically except energetic mood. But, a large number of irrealis moods have their morphologically distinct faces, such as subjunctive or conjunctive, imperative,

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optative, cohortative, permissive, energetic, dubitative, interrogative, inferential or renarrative, precative and presumptive. So, there are not less than ten kinds of irrealis mood in Bodo. This large set of irrealis mood makes the Bodo language very much expressive.

1.2 Grammatical Moods in Bodo

Mood is one of the confusing grammatical categories, which, in most times, is thought of as a semantic device. But, mood is realized with the use of any of some linguistic elements which have grammatical structure- a morpheme or a word. So, the morphologically and syntactically distinct linguistic elements/devices which show modality are considered here as grammatical mood. Mood can be of various types, but they can be subcategorized under two heads- Realis and Irrealis. Different types of realis and irrealis mood are discussed below with illustration of examples.

1.2.1 Realis Mood

In Bodo, there is only one realis mood that is realized with a distinct morphological form and it is called energetic mood. It is illustrated below along with some examples.

1.2.1.1 Energetic Mood: {-t^har}, {-mar}

The energetic mood expresses something which is strongly believed or which the speaker wishes to emphasize or say something with assurance. So, the energetic mood functions like an emphatic marker. There are two but almost the same (semantically) energetic mood inflections in Bodo. For example-

(1) aŋ gabun p^hwi -t^har -guun
 I tomorrow come -ENER -FUT
'I shall come tomorrow (surely).'

(2) aŋ gabun p^hwi -mar -guun
 I tomorrow come -ENER -FUT
'I shall come tomorrow (really).'

From the above examples it is clear that the two energetic mood inflections are used in different semantic environments. It can be more clearer if they occur at the same time. Let's see in the following example-

(3) aŋ gabun p^hwi -mar -t^har -guun
 I tomorrow come -ENER -ENER -FUT
'I shall come tomorrow (really and it is assured).'

These inflections can occur interchangeably with a slight change in meaning. e.g.-

- (4) aŋ gabuun p^hwi -t^har -mar -guun
 I tomorrow come -ENER -ENER -FUT
 'I shall come tomorrow (surely and it is real).'

Position of Energetic Mood Suffix: The energetic mood suffixes occur immediately after the verb roots/stems that carry modality, as adverbial suffixes.

1.2.2 Irrealis Mood

An irrealis mood indicates that something is not actually the case. It may be a part of expressions like necessity, possibility, requirement, wish (desire), fear, a counterfactual reasoning, etc. A verb or verb phrase which consists of an irrealis mood is used when speaking of an event which has not happened, not likely to happen or otherwise far removed from the real course of events.

There are a large set of irrealis moods in Bodo which are very distinct morphologically. These are- *subjunctive* or *conjunctive*, *imperative*, *optative*, *cohortative*, *permissive*, *dubitative*, *interrogative*, *inferential* or *renarrative*, *precative* and *decisive*. There may be other types of irrealis mood than which are mentioned here. But, as it is the first attempt to find out whether there are morphologically distinct moods or not in Bodo, one or more may be dropped out from this enumeration. However, all the types of irrealis mood mentioned above are discussed below with illustrations of examples.

1.2.2.1 Subjunctive Mood: {-bla... -guo}

The subjunctive mood can be defined as an expression of the possibility of completion of the action of the verb. It indicates that the speaker is not asserting the truth of the proposition expressed by the clause, and that the situation described by the clause is not an actual one.

In the Bodo language, the subjunctive or conjunctive form is used primarily as the suffix of the main verb (or predicative adjective/noun where the main verb is absent especially in equational sentences) of the conditional clause where the subjunctive mood exists. In general, subjunctive mood has its uses as co-relatives, one with the conditional clause or protasis (dependent clause) and the other with the apodosis (main clause) of a sentence with, at least, a conditional clause. So, two different elements of subjunctive mood are used at once; one with the apodosis and the other with the protasis of a sentence with conditional clause(s). But, if the apodosis of such a sentence is in imperative clause it has two

options to have or not to have an imperative mood; likewise, if it is in optative, it is obligatory to use the optative mood.

In Bodo, the past tense marker {-m^huŋ} always follows subjunctive mood inflection {-guo} suffixed to the main verb of the apodosis.

- (5) raŋ t^ha -nai -mun -*bla* aŋ maorija
 rupee (money) stay -NOMLZ -PST -SUB(if) I orphan
- gɔt^hɔ -p^hur -nu dan hu -*guo* -mun
 child -PL -DAT donate -SUBJ -PST
'I would donate to orphan children if I had money.'
- (6) p^hui -*bla* ham -*guo* -mun
 we -SUB(if) be good -SUBJ -PST
'It would be good if (you/he/she/it/they) come(s).'

Position of Subjunctive Mood Suffix: Subjunctive mood suffixes occur as correlatives like *neither...nor, either...or*, etc. This mood always occurs in a complex sentence where the {-*bla*} occurs with the main verb (finite/nonfinite) in the subordinate clause and {-*guo*} with the main finite verb of the main clause. {-*bla*} occurs as a termination whereas {-*guo*} is always followed by the past tense marker {-m^huŋ}.

1.2.2.2 Imperative Mood: {-du}, {-lai} and {-nai}

In the Bodo imperative clauses, verbs do not have any other forms except their respective lexical forms. But, to mean some different degrees of politeness and purposes of the action of the verbs, sometimes, different suffix particles expressing different imperative moods are used. However, imperative mood suffixes are optional; because, imperativeness is, basically expressed through certain kind of tone. They occur like particles as they indicate, more or less, some kind of emphasis. For example-

- (7) a) p^hui → 'Come'
 b) p^hui -du → 'Come' (polite)
 c) p^hui -nai/-lai → 'Come' (for a purpose)

Of them, {-du} has its allomorph {-di} which is found preceding the cohortative or permissive inflection {-ni}. This allomorphic form is due to the post-lexical vowel copy/harmony. For example-

- (8) zuŋ t^haŋ -*di* -ni
 we go -IMP -COHRT
'Let us go.'
- (9) aŋ za -*di* -ni

I eat -IMP -COHRT
'Let me eat.'

Position of Imperative Mood Suffix: Imperative mood inflections are suffixed to the verb root or stem immediately, i.e., they do not follow any other inflection.

1.2.2.3 Optative Mood: {-t^huŋ}

The verb in a Bodo optative clause takes an inflectional mood suffix {-t^huŋ} which expresses a wish. For example-

(10) bi -ju gabun t^haŋ -t^huŋ
 s/he -NOM tomorrow go -OPT
'Let him go tomorrow.'

(11) isur -a zuŋ -k^huo mɔdɔt k^halam -t^huŋ
 God -NOM 1.PL -ACC help do -OPT
'May God help us.'

Position of Optative Mood Suffix: Optative mood suffix occurs immediately after the verb that carries modality. Like imperative mood suffix, it does not follow any other inflection.

1.2.2.4 Cohortative Mood: {-ni}

It is said that cohortative constructions can only be used in first person plural utterances; because the term 'cohortative' was derived from Latin 'cohortatus' of which 'co-' means 'together' and 'hortari' means 'encourage or urge'. This kind of mood signals the speaker's encouragement or discouragement toward the addressee(s) bringing about the proposition of an utterance along with the speaker. In other words, it signals mutual encouragement for the speaker and the addressee(s). For example-

(12) p^hui zuŋ k^huose -juɪ agan sur -ni
 come we united -ADVLZ stem start -COHRT
'Come, let's move forward unitedly.'

(13) t^hu/t^huo nɔ -wao t^haŋ -ni
 let home -LOC go -COHRT
'Let's go home.'

The same mood inflection is also used in first person singular utterances. But, the constructions with the modality of 'let+me' (i.e., first person singular) are not hortative but rather permissive as the term cohortative is not meant for singular. It is discussed under permissive mood below.

Position of Cohortative Mood Suffix: The cohortative mood suffix {-ni} occurs as the imperative mood suffies as it is somehow similar to imperative illocutionary force.

1.2.2.5 Permissive Mood: {-hu} and {-ni}

This kind of mood shows the modality of permission. The permissive mood indicates that the action is permitted by the speaker. This kind of mood, in broader sense, includes causativization. The use of the causative suffix {-hu} adds permissive mood to the verb which it occurs with. So, {-hu} as a permissive mood is an inflectional suffix. Some examples are given below-

(14) aŋ t^haŋ -nanui p^hui -ni
 I go -NF come -PER
 'Let me go and come.'

(15) alasi -p^hur -k^huo zirai -hu
 guest -PL -ACC rest -PER
 'Let the guests rest.'

Position of Permissive Mood Suffix: Permissive mood suffixes also occur immediately after the verb root/stem that carries the permissive modality. {-ni} and {-hu} do not follow any other inflection, but {-hu} can precede other grammatical categories such as tense, aspect and other types of mood.

1.2.2.6 Dubitative Mood: {-gun} and k^huma

It expresses the speaker's doubt or uncertainty about the event denoted by the verb. There are two dubitative elements in Bodo; one is a suffix {-gun} and the other is an indeclinable word k^huma.

In general {-gun} occurs with a verb; but in a verbless clause or sentence it may occur with a noun, an adjective or else which substitutes or covers the covert position of the verb in a verb phrase, a clause or a sentence. For examples-

(16) bi -ju nuɣur -nip^hrai p^hui -duŋ -gun
 s/he -NOM city -ABL come -PFV -DUB
 'S/he may be coming from the city.'

(17) musuo -wa biguma -k^huo sinai -bai -gun
 cow -NOM owner -ACC know -PRF -DUB
 'The cow may have recognized the owner.'

(18) amai -a sɔŋp^hur p^hui -gun -gun
 marenal uncle -NOM day after tomorrow come -FUT -DUB
 'Uncle (maternal) may be coming tomorrow.'

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- (19) be -juu muzaŋ -gun
 it -NOM good -DUB
'It may be good.'

One can be confused this inflection with the identical future tense inflection {-gun}. So, the dubitative mood inflection can be differentiated from the latter in the different environments of their uses. The latter is always used immediately after the verb root or stem while the dubitative mood suffix is used elsewhere.

Again, to express this type of mood a free word is used in Bodo as a postposition to the verb which takes the mood. For example-

- (20) muswo -wa biguma -k^huo sinai -bai k^huma
 cow -NOM owner -ACC recognise -PRF DUB
'The cow may have recognized the owner.'

- (21) dinui ɔk^ha ha -gun k^huma
 today rain -FUT DUB
'It may be raining today.'

Position of Dubitative Mood Suffix: The morphologically distinct dubitative mood {-gun} occurs with the verb which carries modality. In general, it occurs as a termination. On the other hand, the syntactically distinct dubitative mood k^huma occurs as a free word immediately after the verb with the assigned modality.

1.2.2.7 Interrogative Mood: {-na}, {na-} or {-da}

The interrogative mood is used for asking questions. Most languages do not have a special mood for asking questions. There are two types of morphological mood in Bodo which occur with the main verbs in interrogative sentences without respective *wh-question particles*. But, their occurrences are optional as interrogation may also be expressed with the action of intonation (and using interrogation point (?) in written form). e.g.-

- (22) nuŋ p^hui -gun -na/-da
 2SG come -FUT -INTR
'Will you come?/Are you coming?'

- (23) be dui -ja gut^har -na/-da
 this water -NOM pure -INTR
'Is this water pure?'

There is another environment in Bodo where {-na} occurs as a prefix. When the covert/overt verb expressing interrogative mood is followed by a question word *ma* ‘what’ it occurs with *ma* as a prefix as in-

- (24) be dui -ja gut^har (nuŋguo) na- ma
 this water -NOM pure (be) INTR- what
 ‘Is this water pure?’

Position of Interrogative Mood Suffix: The interrogative mood affixes {-na} and {-da} occur with the verbs that carry modality as terminations. The former also occurs with the question word *ma* ‘what’ as a prefix.

1.2.2.8 Inferential or Renarrative Mood: {-nu}

The inferential mood is used to report a non-witnessed event without confirming it or to convey information about events, which were not directly observed or were inferred by the speaker.

- (25) ai -a gabun p^hui -gun -nu
 mother -NOM tomorrow come -FUT -INFR
 ‘(It is know that) My mother will come tomorrow.’

- (26) nuŋ bi -hɔr -nai bizab -a be -nu -nu
 2SG ask -DIST -ADJLZ book -NOM this -PTL -INFR
 ‘(It is know that) The book you asked is this.’

Position of Inferential or Renarrative Mood Suffix: The inferential or renarrative mood suffix {-nu} always co-occurs with tense suffix and often with aspect suffix. It is preceded by the tense and aspect suffixes.

1.2.2.9 Precative Mood: {-zen}

Precative mood is a grammatical mood which signifies requests. For example-

- (27) aŋ k^hɔrɔ ɡɔŋglai -juɪ arɔz gab -u nuŋt^haŋ -a aŋ
 I bow -ADV LZ pray -HAB 2SG.HON -NOM I
 -k^huo nimaha hu -ju -zen
 -ACC forgive -HAB -PREC
 ‘I bow and pray so that you forgive me.’

Position of Precative Mood Suffix: The precative mood {-zen} always co-occurs with habitual aspect inflection suffix {-ju}. It also occurs as a termination.

1.2.2.10 Decisive Mood: {-si}

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A decisive mood is the grammatical device which expresses likeliness of occurring the action of a verb in the near future. It is morphologically expressed with the {-si} suffix in Bodo. For example-

(28) ap^ha -ja gabun sak^hri -nip^hrai azira mun
 my father -NOM tomorrow job -ABL retirement get

 -si -gun
 -DEC -FUT
 'My father is likely retiring from service tomorrow.'

(29) p^hurungiri -ja dōse un -ao -nu p^hwi -si -gun
 teacher -NOM a while after -LOC -PTL come -DEC -FUT
 'The teacher is coming after a while.'

Position of Decisive Mood Suffix: The decisive mood suffix {-si} occurs immediately after the verb which carries the modality. It can be followed by future tense inflection as exemplified above.

1.3 Conclusion

Moods are the linguistic devices which exhibits the modality of a language. They are more or less similar in all languages; but their similar physical presences are not always there in all the languages. A mood may be in the form of a free or bound morpheme or a word (an auxiliary verb, a indeclinable or else); otherwise covert. But, the present study covers the overt forms of different types of mood used in the Bodo language. In this language, overt moods are found in the forms of bound morphemes (suffixes) and indeclinables. They are called grammatical moods. This language has a very rich mood system as a grammatical category of wide range of word classes, i.e. verbs, nouns, pronouns, adjectives and adverbs.

While scanning the corpus ten types of grammatical moods are found in Bodo, namely, energetic, subjunctive or conjunctive, imperative, optative, Cohortative, permissive, dubitative, interrogative, inferential or renarrative, precative and decisive mood. Of them, subjunctive, imperative, permissive, optative, interrogative, precative and presumptive moods are expressed morphologically; dubitative is expressed both morphologically and syntactically whereas dubitative and inferential are expressed syntactically.

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Note:

This study is based on a Bodo corpus consisting of around 60K sentences, prepared and annotated by *Resource Centre for Indian Language Technology Solutions (Phase-II)* team, Department of Computer Science and Engineering, IIT Guwahati.

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Do All Individuals with Schizophrenia Have Cluttering?

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Abstract

Cluttering is a disability in formulating language, causing confused, hurried and slurred diction, due to congenital and constitutional limitation of one's total psychosomatic personality structure. Schizophrenia is a psychotic disorder characterized by hallucinations, delusions, disorganized thoughts/speech, disorganized behavior and apathy. This study aimed to investigate the prevalence and co-existence of Cluttering in patients with Schizophrenia. Twelve participants with a diagnosis of Schizophrenia were subjected to a series of linguistic and extralinguistic tasks. A writing sample was also obtained. The responses of all participants on these tasks, coupled with information from their medical charts, were used to complete the Daly's Checklist.

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The study depicted that majority of the participants had Cluttering – Stuttering features, a significant proportion exhibited Cluttering and only one participant had no dysfluencies. This highlighted the co-existence of Cluttering and Schizophrenia, owing to its neurophysiological similarities. The linguistic impairments seen in patients with Schizophrenia constitute an independent ‘syndrome’ and cannot be attributed to their mental illness.

Keywords: Cluttering, Schizophrenia, Daly’s checklist, Stuttering

Introduction

Cluttering is defined as a speech disorder characterized by the individual’s unawareness of his disorder, by a short attention span, by disturbances in perception, articulation and formulation of speech and often by excessive speed of delivery (Weiss, 1964). It is a disorder of the thought processes preparatory to speech, based on a hereditary predisposition. Weiss (1964) describes cluttering as a Central Language Imbalance (CLI) which can be explained as unevenness and a lag in maturation. Some other attempts to explain the apparent ‘organicity’ of this CLI include sub-microscopic lesions in the striatum (Seeman, 1970), lack of maturation of the nervous system (de Hirsch, 1961) and a strong hereditary factor (Weiss, 1964; Luchsinger, 1965).

Cluttering is characterized by obligatory symptoms, namely repetitions, poor concentration and short attention span and unawareness of symptoms i.e. they are usually poor listeners, spontaneous, compulsive, unorganized and unaware of the consequences of an act (Weiss, 1964)

The Facultative symptoms (those which are present but not mandatory) include – Tachylalia or excessive speed (i.e. the person may not be necessarily faster than the normal population curve but speaks ‘relatively too quickly’ for the formulation of utterances), Respiration dysrhythmia or jerky respiratory pattern, Dysfluencies (interjections, prolongations, hesitations and silent gaps), Articulatory errors (deletion, distortions or additions), Lack of musicality and rhythm, resulting

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in monotonous speech and Motor disabilities (superficiality, lack of precision, hyperactivity, impulsiveness and restlessness). Poorly integrated thought processes (i.e. a vague idea of what one is about to say) and Inner language disturbances are also present.

Though, Cluttering and Stuttering are fluency disorders, the two are not the same. Cluttering involves excessive breaks in the normal flow of speech that seem to result from disorganized speech planning, talking too fast or in spurts, or simply being unsure of what one wants to say. By contrast, the person who stutters typically knows exactly what he or she wants to say but is temporarily unable to say it, thus repeating or prolonging sounds or syllables, blocking, and/or using accessory (secondary) devices like eye-blinks, synonyms for difficult words, or abnormal facial postures. However, cluttering and stuttering do co –occur.

Evaluation of Cluttering is similar to any other speech and language evaluation. Using Daly and Burnett’s Checklist for Possible Cluttering can alert the clinician to symptoms that are frequently observed in Cluttering, although we agree with the authors that the instrument should not be used as the sole criterion for a diagnosis of cluttering (St. Louis, Raphael, Myers & Bakker, 2003)

Schizophrenia, is characterized by profound disruption in cognition and emotion, affecting the most fundamental human attributes: language, thought, perception, affect, and sense of self. The array of symptoms, while wide ranging, frequently include psychotic manifestations, such as hearing internal voices or experiencing other sensations not connected to an obvious source (hallucinations) and assigning unusual significance or meaning to normal events or holding fixed false personal beliefs (delusions). No single symptom is definitive for diagnosis; rather, the diagnosis encompasses a pattern of signs and symptoms, in conjunction with impaired occupational or social functioning (DSM-IV).

The symptoms of Schizophrenia are categorized as Positive symptoms which include unusual perceptions (including hallucinations, delusions), disordered thought and movements. Negative symptoms include a loss/decrease in the ability to initiate plans, speak, express emotion, or find

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pleasure in everyday life. Their Cognitive symptoms include deficits in attention, memory, and executive functions that help us to plan and organize our thoughts.

The present study was designed to investigate the co-existence of cluttering in patients with Schizophrenia and to highlight the role of Speech Language Pathologists in assessing and rehabilitating individuals with Schizophrenia.

METHOD

Participants

Twelve participants, between 18 – 50 years of age, with more than 5 years diagnosis of Schizophrenia were recruited from The Richmond Fellowship Society, Bangalore, India (RFS), which is a training centre that provides care and psychosocial rehabilitation for persons with mental health needs. Participants with limited proficiency in spoken English and those with any associated disorders (such as bipolar mood disorders etc.) were excluded from the study.

The medical charts, of all 12 participants, were reviewed and information regarding their medical condition, educational and family history was obtained. Information about their general behaviour was acquired from observation of the participants throughout the study and from an informal conversation conducted with the client and a staff from the RFS.

Procedure

Each participant was subjected to a series of tasks, namely (1) a Reading task – the participants were required to read the given passage, (2) a Monologue – on a topic of their choice, (3) Following simple verbal commands, (4) Logical reasoning tasks –they were given simple queries to solve using logical reasoning, (5) a Story Pulling task – the participants were provided with the beginning and the climax of a story and were expected to complete the body of the story with relevant events. Then, (6) a Writing task – they were asked to write down the dictated passage

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and also a few lines on any topic of their choice (Spontaneous writing sample), (7) a Picture Description activity and (8) a Picture Sequencing task – they were provided with pictures of a story in a jumbled order and were asked to put them in the correct sequence and describe the story. The final task was subjecting each participant to some (9) Mathematical tasks.

The responses of each participant on these tasks, along with information obtained from their medical charts, from observation and from the interview were used to complete the ‘Daly’s Checklist for Identification of Cluttering’ (Daly & Burnett, 1997). Each question on the Checklist was scored as 3 (feature occurring ‘Very much’), 2 (feature occurring ‘Pretty much’), 1 (feature occurring ‘Just a little’) or 0 (feature not occurring at all). Based on the score obtained in the Checklist, the participants were classified as having Cluttering (score of 55 and above), Cluttering – Stuttering (score of 35 - 55) or no dysfluencies (score less than 35).

A further analysis was carried out to identify the ‘Predominant’, ‘Evident’ and ‘Rare’ features, of Cluttering, in the participants diagnosed as having Cluttering and Cluttering - Stuttering. For this purpose, the score of ‘3’ on Daly’s Checklist was denoted as ‘ α ’, score of ‘2’ as ‘ β ’ and a score of ‘1’ was denoted as ‘ γ ’. Then the following criteria was used to categorize the features as ‘Predominant’, ‘Evident’ and ‘Rare’ –

- (1) If more than 50% of the participants obtained ‘ α ’ or more than 75% of the participants obtained a combination of ‘ α ’ and ‘ β ’ for a particular feature, then that feature was termed as being a ‘Predominant’ feature of Cluttering in persons with Schizophrenia.
- (2) If more than 50% of the participants obtained ‘ β ’ or more than 75% of the participants obtained a combination of ‘ β ’ and ‘ γ ’ for a particular feature, then that feature was termed as being an ‘Evident’ feature of Cluttering in persons with Schizophrenia, and lastly
- (3) If 75% of the participants obtained ‘ γ ’ for a particular feature, then the feature was termed as being a ‘Rare’ Cluttering feature in persons with Schizophrenia.

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Also, the features of Cluttering were differentiated from those of Schizophrenia. In the Cluttering – Stuttering category, the predominance of either Cluttering or Stuttering features were also highlighted. Statistical analyses were also performed to accomplish the following objectives-

- a. Investigation of inter judge reliability (Pearson correlation)
- b. Internal consistency in the responses of subjects across various questions of the Daly's checklist – (Conbrach's alpha)
- c. Assessment of significance of difference between the Cluttering, Cluttering – Stuttering and no fluency disorder group, on the scores obtained on Daly's checklist (Mann Whitney U test).

RESULTS

The three investigators qualitatively analyzed the behavioral characteristics and the performance of each participant on the given tasks. Based on this, the Daly's Checklist for Identification of Cluttering was administered and it was found that, of the 12 participants, 50% (n = 6) had Cluttering – Stuttering, 42% (n = 5) had Cluttering and 8% (n = 1) had no dysfluencies.

Judgments performed by the 3 judges revealed a strong positive correlation. (r = 0.8 for first and second judge, r = 0.83 for the second judge and the third judge and r = 0.76 for the third judge and the first judge). Conbrach's alpha value of 0.7 and 0.72 were obtained for the cluttering and cluttering- stuttering group respectively which further confirms the presence of good internal consistency with for the scores obtained by the subjects of each group. Conbrach's alpha could not be performed on the no fluency disorder group since it comprised of only one subject. There also seemed to be a significant difference between the scores obtained by the Cluttering and the Cluttering – Stuttering group ($p < 0.05$ on Mann Whitney U test)..

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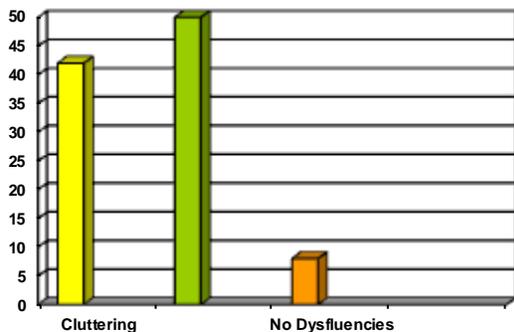


Figure 1: Percentage of participants in Cluttering, Cluttering – Stuttering and No dysfluencies groups.

Cluttering Vs Schizophrenia

Within the Cluttering group, 13 features were found to fall under the ‘Predominant’ category, as can be seen in Figure 2. Out of these 13 ‘Predominant’ features, 54% (n = 7) can be attributed to Cluttering. In the same group, 12 features were identified as being within the ‘Evident’ category, out of which 42% (n = 5) were found to be purely Cluttering features. The remaining 46% (n = 6) of ‘Predominant’ features and 58% (n = 7) of ‘Evident’ features could be attributed to either Cluttering or Schizophrenia. No features in the ‘Rare’ category were identified, in our population, as per our classification

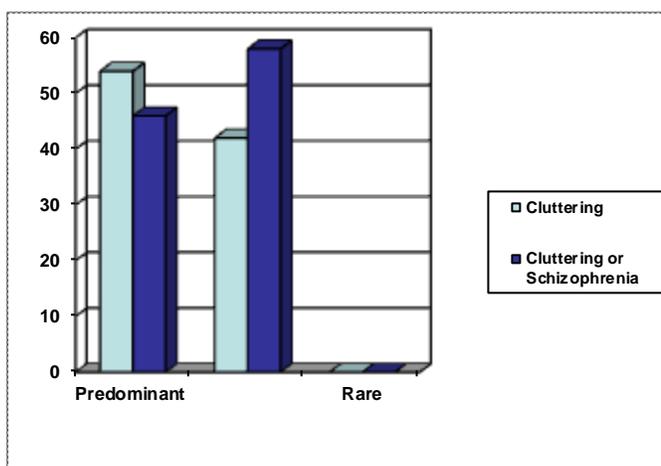


Figure 2:Percentage of features in Cluttering

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Similarly, within the Cluttering – Stuttering group, 10 features were found to fall under the ‘Predominant’ category. Out of these 10 ‘Predominant’ features, 70% (n = 7) can be attributed to Cluttering. In the same group, 12 features were identified as being within the ‘Evident’ category, out of which 67% (n = 8) were found to be purely Cluttering features. Out of the 2 ‘Rare’ features identified, 1 (50%) feature was found to be that of Cluttering and the other could be due to Cluttering or Schizophrenia. Also, the remaining 30% (n = 3) of ‘Predominant’ features and 33% (n = 4) of ‘Evident’ features could be attributed to either Cluttering or Schizophrenia.

Cluttering Vs. Stuttering

Within this group, of the 10 ‘Predominant’, 12 ‘Evident’ and 2 ‘Rare’ features, 9, 8 and 2 features, respectively, were indicative of Cluttering rather than Stuttering.

DISCUSSION

The results indicated that majority of the participants exhibited Cluttering – Stuttering features and a significant number showed features of only Cluttering. Further analysis of the Cluttering – Stuttering group, showed a dominance of Cluttering features rather than Stuttering. In the Cluttering group, the ‘Predominant’ features of Cluttering were characterized by little/no tension observed during dysfluencies, inappropriate/overuse of pronoun reference, improper linguistic structure, lack of awareness of self and/or communication disorder(s), poor recognition /acknowledgement of non verbal signals and lack of effective self monitoring. The ‘Evident’ features included presence of interjections, Tachylalia or speaking in spurts, speech better under pressure (during periods of heightened attention), initial loud voice/trails off to a murmur and poor rhythm or musical ability (may dislike singing). There were no ‘Rare’ features identified in this group according to our selection criteria.

In the Cluttering- Stuttering group, the ‘Predominant’ features were similar to those identified in the Cluttering group. Most of the ‘Evident’ features in this group resemble those seen in the Cluttering group. In addition, inappropriate turn taking was also observed. Improper linguistic

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structure was the only ‘Rare’ feature seen in this group. The remaining features in both Cluttering and Cluttering – Stuttering groups, could be attributed to either Cluttering or Schizophrenia.

Several studies have explored the neurophysiological factors involved in Schizophrenia and Cluttering, respectively. PET studies, in patients with Schizophrenia, revealed reduced activation in the frontal areas of the brain and abnormal dopamine activity in the striatum (Meyer-Lindenberg, Miletich, Kohn, 2002). Similar findings were also seen in patients with Cluttering, i.e. lesions in the striatum (Seeman, 1970) and lack of maturation of the nervous system (de Hirsch, 1961) were identified. A study by Nicolson et al., (2000), stated that the pathophysiology of Schizophrenia involves abnormal development of language related brain regions. These neurophysiological similarities between Schizophrenia and Cluttering support the possibility of their co-existence, thus supporting the results of our study.

Speech-Language difficulties are a characteristic finding in patients diagnosed with Schizophrenia during childhood and adolescence. However, these impairments are also present at high rates in those diagnosed with Schizophrenia during adulthood (Nicolson et. al, 2000), as is evident in our participants. They also found that adults with Schizophrenia have impairments particularly in pragmatics, prosody, auditory processing and abstract language functions. Lott, Guggenbuhl, Schneeberger, Pulver, & Stassen (2002) concluded a complete lack of association between linguistic impairments and the symptoms exhibited by this psychiatric population. This lack of association led to the inference that the linguistic deviance seen in psychiatric patients represent an ‘independent syndrome complex’ and cannot be attributed to their mental illness. This evidence supports and confirms our finding that speech and language difficulties seen in our participants are not secondary to their mental illness (Schizophrenia), but are exclusively a manifestation of impairments seen in ‘Cluttering’.

The present study has attempted to highlight the co-existence of Cluttering and Schizophrenia, thus emphasizing on the need for Speech-Language Pathologists to be an integral part of the team approach involved in the assessment and management of Schizophrenia patients. Therefore, Language in India www.languageinindia.com

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it is necessary for psychiatrists to refer patients with Schizophrenia for a detailed speech-language evaluation and thereafter therapeutic intervention. Since, Cluttering is characterized by lack of self monitoring and self awareness, it tends to go unnoticed. The awareness regarding the identification of Cluttering has increased tremendously among Speech Language Pathologists in the recent years. However, this awareness needs to increase further and particularly among other medical professionals. The present study has taken a step towards achieving this goal.

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**Mother – Daughter Relationships:
A Study of *The Dark Holds No Terrors, Difficult Daughters and
Fasting, Feasting***

M.Phil. Dissertation

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A DISSERTATION SUBMITTED TO
MAHARSHI DAYANAND UNIVERSITY, ROHTAK
IN PARTIAL FULFILMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
MASTER OF PHILOSOPHY IN ENGLISH
2010 – 2011



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DECLARATION

This is to certify that the material embodied in the present work entitled “**Mother – Daughter Relationships: A Study of *The Dark Holds No Terrors, Difficult Daughters and Fasting, Feasting***” is based on my original research. It has not been submitted in part or full for any other diploma or degree of any university.

My indebtedness to other works has been duly acknowledged at relevant places.

Countersigned by Supervisor

Signature of the Candidate

DR. SURENDER SANGWAN

JITENDER SINGH

(PROFESSOR)

Countersigned by Head of the Department

DR. (Mrs.) ASHA KADYAN

(PROFESSOR)

Dedicated
To
My Mother
The Source of Incessant Love

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Chapter – 1

INTRODUCTION

It is said that life is all about relationships. Human beings are the products of the social system in which they live and dwell, and in order to play their societal roles appropriately, certain types of relationships have been established. The one thing that these relationships give birth to is a sense of commitment. One of the most committed relationships, from emotional and psychological point of view, is the one shared by mother and daughter. However, in today's postmodern world, in which gay-lesbian relationships and live-in relationships are the burning issues of discussion, it appears a little obsolete to talk about mother-daughter relationship. But one cannot gainsay the fact that this is undoubtedly the single relationship that has the strongest bearing on a woman's life and experience.

Themes of segregation and women's subjugation under patriarchy begin to reverberate in Indian English Fiction after independence. A woman's social identity, then, came to be examined with reference to her two major roles – wife and mother. In Indian English fiction, this theme has been represented recently, though with remarkable variations, in the works of a group of women writers including Anita Desai, Chitra Banerjee Divakaruni, Shobha De, Shashi Deshpande, Arundhati Roy, Manju Kapur, Bharati Mukherjee, and others. The male writers, however, never diverted from the stereotypical image of motherhood; whereas these women writers have done their best to emancipate women from the protective mother stereotype. The pioneer in the analysis of different ways in which women are affected by motherhood is Anita Desai. The rejection of motherhood follows an entirely unique pattern in her novels like *Voices in the City*, *Cry the Peacock* and *Fasting, Feasting*, where the image of nurturing motherhood is reversed. Chitra Banerjee Divakaruni's novels deliver the perspectives on motherhood of a woman, whose upbringing has been traditional. The novels of Shobha De represent the view of women who tend to prefer their individuality over motherhood. Shashi Deshpande's portrayals are interwoven with the poetics of loss. They transgress the boundaries of conventional motherhood. Her protagonists are aware of the fact that rearing the child saps the mother's entire energy and destroys the myth of an all-

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absorbing, all-sacrificing motherhood. Arundhati Roy's novels are generally based on the idea that motherhood or loss of it has tremendous impact on women; it has the capacity to break a woman's morale completely and she is entirely powerless to safeguard herself both emotionally and physically. Manju Kapur's fiction focuses on the obligations of mother and how it affects her own life and experience along with that of her daughter. Last but not the least, Bharati Mukherjee's writings dwell on the image of motherhood and show what obligatory motherhood is. She believes that it is devotion and unwavering obligation that is demanded from the mother. However, from this huge corpus of writings Shashi Deshpande's *The Dark Holds No Terrors*, Manju Kapur's *Difficult Daughters* and Anita Desai's *Fasting, Feasting* have been selected for critical scrutiny to probe the different and complex dimensions of mother-daughter relationships. This selection has been done with due consideration to the fact that these texts range from 1980s to 2000, covering the most formative years of Indian English Fiction. One more important reason is that these three novels can be regarded as the pinnacle of these writers' career, leading their life of writing towards self-definition. Experienced as both mothers and daughters, these writers tend to redefine the mother-daughter bonds through their present novels. Their representation of mothers and daughters is of abiding interest. Moreover, these texts demonstrate the changes and transformations that have occurred in mother-daughter ties with the passage of time and also how much feminist movement in India has been successful in changing the mindset of women at least about themselves.

Gifted with a rare literary bent of mind, Shashi Deshpande has portrayed, in her fiction, the inner turmoil of a woman, fighting within herself, between her own knowledge and surroundings. The novels of Deshpande, however, are an example of the ways in which a girl child's particular position, social reality and psychological growth determine her personality. The role of early life experiences, the role of education, closeness to parents, sibling relationships are some of the very crucial elements that go a long way in creating a woman's personality. Deshpande is primarily concerned with women's quest for self-exploration into female psyche and an understanding of the mysteries of life and the protagonists' place in it. What is so peculiar about Deshpande is that women in her novels seek to establish themselves as independent beings free from the restrictions imposed by society, culture, nature and also from their own fears and guilt. The important insight that Deshpande brings

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to her readers is that women should accept their own responsibility for what they are and see how much they have contributed to their own victimization. However, as far as critical material on Shashi Deshpande's novel *The Dark Holds No Terrors* is concerned, it is available mainly in the form of articles and research papers scattered through various anthologies and research journals.

Though Shashi Deshpande has dismissed the label of feminist writer for herself, yet her novels speak for the female-folk and plead for their betterment. Hence, scholars and critics principally consider her novels as being feminist texts. When Deshpande's novel *The Dark Holds No Terrors* came in 1980, much energy was invested to probe the feminist issues, either knowingly or unknowingly, incorporated in it. Women's miserable situation and secondary place in society resulting in their subjugation has been studied by such critics as Shubha Tiwari, Charu Chandra Mishra and Siddhartha Sharma. Tiwari's essay essentially focuses on the plight of the protagonist as being an unwanted child and thus "growing hatred, hostility and lovelessness within her" (85). Mishra's essay deals with the feminist movement in general and husband-wife relationship in particular. On the other hand, Sharma, in his study, touches one feminist issue after another and thus provides an overall analysis of the novel. He aptly concludes his study saying that "Shashi Deshpande does not let herself get overwhelmed by the Western feminism or its militant concept of emancipation. In quest for the wholeness of identity, she does not advocate separation from the spouse but a tactful assertion of one's identity within marriage" (37). But these critics who touch the feminist issues in her novel, have confined their critical lens merely to study women as a wife or woman, neglecting thereby her two crucial roles – mother and daughter.

In Deshpande's novels her treatment of the theme is equally significant as her treatment of her characters. So, thematic studies have been carried out by critics like Premila Paul and Aparna Sundaram. Paul finds the theme of confrontation as capturing the essence of the novel. She opines that the novel confronts, "the myth of man's unquestionable superiority and the myth of woman being a martyr and a paragon of all virtues" (30). But Paul's discussion on the theme of confrontation does not include how woman as daughter confronts the superior and authoritative position of woman as mother in their mutual relationship. Rather her focus is confined merely to explain how the theme of confrontation works in

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male-female bonds. On the other hand, Sundaram, in her comparative study of *The Dark Holds No Terrors* and Anita Nair's *Mistress*, dwells upon the theme of marriage, sexual violence and Indian masculinity. Her essay focuses "on the act of marital rape as a tool used by men to reaffirm their 'superior position' in a marriage" (19). Sundaram comments, "Creation of any identity – masculine or feminine – rests mainly upon the patterns of power structures that exist in a society" (20). But she does not discuss how patriarchy perpetuates these patterns of power and through whom. It is the mother who has been assigned the task of socializing the daughter in these power structures. But Sundaram nowhere focuses on this crucial facet of patriarchal society.

Critics like Nalinabh Tripathi and Beena Agarwal have used their critical insight to probe the issues of gender-discrimination and identity formation. Tripathi argues that *The Dark Holds No Terrors* "projects deconstruction as well as reconstruction of gender roles" (43). His essay also points out how women are used to recreate the gender-differences within the patriarchal society. But Tripathi does not pay any heed to probe why mother is used to recreate gender-differences. His study lacks the psychological significance of the role of mother in daughter's life. Beena Agarwal in her study of Shashi Deshpande's fictional world encapsulates, "Shashi Deshpande in the novel *The Dark Holds No Terrors* moves with the vision of the spaces of alternate identities from parental home to the home of husband from marital periphery to extra-marital periphery to scan the phenomenon that gender prejudices are not inherent in the biological difference . . ." (42). Agarwal speculates on the fate of the middle class Indian woman, as depicted in the novel, who accepts professional independence to carve out spaces for alternate identity. But still Agarwal's study lacks a comprehensive discussion of what kind of role is played by mother in the formation of daughter's separate identity. She merely focuses on the daughter's trials and tribulations, ignoring mother's influence on her daughter's life.

A few critics like Mrinalini Sebastian have also interpreted *The Dark Holds No Terrors* as a postcolonial text. Sebastian finds a sense of revolt and protest as projected in the novel especially through the protagonist's "subversive manner" (171). She argues that it is only by being aware of the different kinds of women that we could talk about the postcolonial woman. She takes up the issue of Saru's domestic servant Janakibai into consideration to

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probe the lasting presence of colonialism. Sebastian comments, “She [Janakibai] is the representative of all the women who belong to this section of the working women category who has no job security whatsoever. Once again, the women at the margins of the narration are the women who make this narration possible by allowing the protagonist to leave the smooth running of her own small family to them” (175). Her study, though a noble attempt, does not fully touch the essence of postcolonial argument as it lacks the point how a daughter struggles to decolonize herself from the domination of her mother.

There are critics like Arindam Chatterji who critically analyse *The Dark Holds No Terrors* from a psychological point of view. But the basic limitation of Chatterji’s essay is that it applies the premises of D. W. Winnicott’s psychoanalytic theory solely, without comparing or contrasting with any other psychoanalytic critic. But despite this drawback, Chatterji’s essay gives some enlightening insights about the psychological effects caused by the mother in her daughter’s personality. Chatterji observes that “In *The Dark Holds No Terrors*, Sarita goes back to her primitive environment to try and locate the self that she had lost years ago to a mother who had monstrously impinged on her tender mind with the myriad distortions of a patriarchal order that she herself had imbibed from her own damaged childhood” (97). But still his study is a limited attempt in that he has not explored how the psychologically affected daughter responds to her mother’s domination.

The mother and daughter relationships have been probed by scholars like Rashmi Sahi and Rashmi Gaur. Sahi’s approach to this relationship is comparatively limited because she treats it with a general outlook. She points out, “She [Deshpande] has not valourized the image of mother as goddess, instead she has rendered more human qualities to her” (19). Sahi’s line of argument is based on the mother’s influence on the daughter’s personality and the role of gender-bias in the socialization of the daughter. “In Shashi Deshpande’s novel mother and mother figures are not the matriarchs to be glorified but the suffocative and authoritative figures to be disdained” (Sahi 20). Sahi merely gives an overview of the mother figures without analyzing their relationships with daughters at the psychological level. It gives the impression that her paper is a mere sociological study of this relationship and not a psychological one. On the other hand, Rashmi Gaur’s essay is quite enlightening, exposing various complex dimensions of mother-daughter conflicts. Mother herself contributes to the

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germination of a complex in the girl child by attaching more value and importance to the son. As a result, the daughter develops a sense of revolt against the mother and begins to consider her the biggest opponent. Gaur points out, “The shadows of her unhappy relationship with her mother darken her adolescence, her early youth and even her first love” (95). Later on, along with mother-daughter relationship, Gaur also discusses the man-woman relationship and thus somewhat loses the focus. Though she considers parental love and especially mother’s emotional support as indispensable for a daughter’s happy life, but she also tends to show the need of turning inward to their own self, instead of their mothers, to be their own strength and support. According to her, “the fear of losing oneself in the dark labyrinthine passages of this mysterious world is dispelled, if a woman understands that she will have no refuge in any relationship unless she believes in her own self and accepts the responsibilities of her own life” (102).

Like *The Dark Holds No Terrors*, by Shashi Deshpande, Manju Kapur’s debut novel, *Difficult Daughters*, too has been subjected to multiple interpretations. However a vast range of critical acumen has been invested on the feminist issues incorporated in her other novels also. But, as far as the critical material on *Difficult Daughters* is concerned, a number of trends immediately become perceptible to the reader.

Critics primarily interpret Kapur’s present novel as a feminist text. Christopher Rollason comments that Manju Kapur speaks primarily, with great narrative eloquence, of the idea of independence. Rollason further argues that “the pages of *Difficult Daughters* speak not only of Virmati, but of other ‘difficult daughters’, who succeed better than she did in their parallel struggles for independence in their lives” (3). What happens to Virmati is no doubt the most representative destiny of the Indian woman (even if educated), but Kapur’s novel shows that other paths also exist, while further stressing that other choices are by no means simple or either-or. Certain other critics like Shilpi Rishi Srivastava, Sangeeta Mehta and Ruby Milhoutra focus, however, on the emergence of ‘New Woman’ and her search for identity and autonomy in Kapur’s novel, *Difficult Daughters*. According to Srivastava, “Virmati symbolizes the changed mindset of Indian girls who want to decide their future and refuse to be treated like things. And her gathering voice symbolizes the freedom the females run after” (21). Whereas Mehta argues that the idea of independence can be made true by only one

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thing that is woman empowerment. She firmly states, “Woman has to be given economic independence, for freedom without economic freedom is meaningless” (126). According to Milhoutra, Manju Kapur has very well combined the story of India’s partition and the family partition. The novelist, through the character portrayal of Virmati, Harish, Ida and Kasturi wants to convey that loyalties, identities and nations were becoming a matter of choice rather than tradition. She points out, “The title of the novel *Difficult Daughters* is an indicator to the message that a woman, who tries to search an identity, is branded as a difficult daughter by the family and the society as well” (163). These critics have talked much about the need of identity and autonomy on the daughter’s part. However, Kapur speaks for the independence of both mothers and daughters in her novel. The idea of independence is equally related to mothers as it is to daughters. But these critics concentrate merely on daughter’s struggle to independence, ignoring mother’s aspirations and efforts, as well as her own restrictive and shaping circumstances.

A few scholars like Shaleen Kumar Singh find out that the clash of tradition and modernity is at the centre of the novel. Singh argues that Manju Kapur has successfully portrayed the conflict of tradition and modernity in her characters. The specialty is that her female characters are not only involved in clash against male-dominated traditional world but they also suffer this conflict in the form of generation gap. He points out, “The continuity of clash between tradition and modernity in the women of three generations from Kasturi to Ida ends both in admittance and rejection” (13). Another significant point which Singh raises is that “female characters of Manju Kapur are more influenced with the thought of modernity contrary to men who have been still the same ailed with male-chauvinism, averse to all progressive ideas and indifferent to any type of such clash” (13). Although, the conflict of tradition and modernity has been comprehensively explored by Singh, but it does not focus on the conflict generated by the traditionality of the mother and the modernity of the daughter.

There is another group of critics like Binod Mishra and Reena Mitra who attempt to analyse the novel from a humanitarian standpoint. Mishra tries to evaluate Virmati’s trials and tribulations she is destined to. He has diligently tried to defend Virmati, not under any prejudice but on the plea that when everyone opposes her and puts restrictions she is bound to

evoke sympathy on the ground of an individual's right to expression and freedom of choice. In Mishra's views, "Virmati is the representative of those who try to break the taboos and yet fail to prove their sparks because of their loyalties, which often criss-cross in their cases" (190). On the other hand, Reena Mitra concentrates on the bonding that family and society represent which provides a sense of psychological security. She finds out that relationship born of social sanction and social constraints is the primary concern of Manju Kapur's novel, *Difficult Daughters*. Her area of focus is the social and psychological freedom. She points out, "women at a relatively advanced stage of life, laboring under the various compulsions, enjoy less social and psychological freedom than men and are forced to live their lives in the shadow, first, of parental dominance, and then, of patriarchal oppression" (73). But this group of critics does not take into consideration the idea of matriarchal domination. A girl in patriarchal society is doubly burdened, first by the parents and then by the society per se. After her marriage, the dominance of father is replaced by the husband. But she can never get rid of her mother's influence due to some peculiarity of the bond which they mutually share. This significant aspect remains untouched in their humanitarian study of the novel.

Critics like Indira Bhatt explore the issue of marriage in Manju Kapur's novel, *Difficult Daughters*. Bhatt points out that Kapur in her present novel has presented a woman who considers marriage as the ultimate end of life's journey. In her view, Virmati is convinced of the other possibilities "something other than a wife" (125). Her essay also focuses on the hollowness that becomes visible after getting married. What Bhatt finds is that "Kapur has not effectively perceived the realities of the protagonist's existence from the inside, her dependence, her own created captivity. Once married Virmati dissolves like a salt doll" (130). Bhatt has not discussed that it is actually her mother's excessive concern for her daughter's marriage that unconsciously forces Virmati to consider finally marriage as her life's destiny.

Manju Kapur has also been analyzed as a post-colonial writer by such critics as Sunita Sinha and O. P. Dwivedi. Sinha considers Manju Kapur among the writers who have portrayed the 'new woman' who is inclined to take the 'road not taken,' and walking on their 'own road.' In her opinion, "Manju Kapur is one Indian writer who prefers reality to magic realism and recreates an intimate world" (160). The central idea in Sinha's essay is the parallel which she draws between the three generations of women and the three stages of

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Indian independence. Whereas O. P. Dwivedi contemplates on the notion of ‘double colonization’ of women wherein they are colonized both by patriarchal and imperial ideologies. Dwivedi considers Virmati “a prototype of postcolonial Indian woman because she succeeds to shake off the fetters of her mother’s influence over her” (32). However, these critics do not consider how the colonization of the mother in the society leads to the colonization of the daughter at her mother’s hands.

The theme of motherhood or mother-daughter relationship is brought home by scholars such as Asha Choubey and Jaydeep Rishi. Choubey grounds her argument on the point that mother-daughter bond, which was accustomed to be highly romanticized, has come to be portrayed in more realistic light in *Difficult Daughters*. She further observes that Virmati’s mother, instead of protecting the interests of her daughter, becomes instrumental in torturing her. Choubey simply blames Kasturi for being a hindrance in the over-all growth of her daughter. She talks about Kasturi’s maternal alienation and states: “The sense of belonging that is the essence of a good relationship is found sadly missing from this relationship which is most vital in the life of a woman” (114). The basic limitation of Choubey’s study is that it focuses more on the general nature of this relationship rather than on Virmati and her relation with her mother in particular. However, Jaydeep Rishi has something more to say about this relationship. His line of argument is that “Women experience a superior position only in their relationship with children, especially with their daughters. Once the daughter grows up and disturbs the power equation, the mother loses her privileged position” (92). Rishi also talks about the centre/periphery and positive/negative dualism, and articulates that Ida not only questions these dichotomies but reconstructs the story of her mother’s life through her imagination. “In her imaginative reconstruction Ida frees her mother from the bounds of periphery and in doing so asserts her own centrality as a creator. By becoming Virmati’s creator, Ida frees herself from the dominance of her mother” (94). However Jaydeep Rishi, at one place in his essay, mentions that in some cases the mother and daughter finally reach a natural and better understanding of each other’s compulsions and predicaments. But he does not try to further explore this dimension of mother-daughter ties.

Anita Desai is one of the most thought provoking creative novelists in the realm of Indian fiction in English. She has added a new and significant dimension to Indian English fiction

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and to the portrayal of the sufferings of women. The thing which distinguishes Anita Desai from other novelists writing in English is her preoccupation with the study of the inner world of the individual, particularly the undeserved miseries and untold sufferings of the women who are ruthlessly persecuted and rendered vulnerable, alienated and helpless. Her novel *Fasting, Feasting*, which was published in 1999, greatly fascinated scholars and critics, and has been interpreted and analyzed from different parameters. The existing criticism on *Fasting, Feasting* is available only in the form of research articles included in different anthologies and journals.

First and foremost, the novel has been interpreted as a feminist piece, voicing the agony and oppression caused to the women-folk. Critics like Asha Choubey and Pamela Oliver have made a profound attempt to expose the implicit injustice and subjugation of women. Choubey is of the view that “it’s not only male-chauvinism that has caused havoc but also female-reluctance to face the challenges and even female-apathy that is responsible for this disparity” (Frailty 123). Choubey argues that Desai brings into focus parental apathy which scars the daughters permanently. She makes a powerful observation that “Desai as a true humanist puts the blame not only on men who are suffering with the complex of male-superiority but also on women who oppress their own kind” (126). The prime focus of her essay is that feminists all over blame not only “male-possessiveness and chauvinism” but also “female reluctance, easy acquiescence and lethargy” (130) for the present miserable condition of women. On the other hand, Pamela Oliver talks about the role of family in perpetuating the values of the patriarchal society and the ways through which it can spoil the lives of its members. In her view, “*Fasting, Feasting* cuts right to the heart of family life in two different cultures” (247). She vividly presents the movements where family pathetically suppresses the individuality of its members, especially of women. These critics do not probe the issue as to how the male superiority is instilled in the daughter’s mind at a tender age by the mother herself. It becomes difficult to identify who is the victim and who the survivor?

The issue of gender-discrimination is found at the centre of the novel, *Fasting, Feasting*. This dimension has been probed by critics like Amar Nath Prasad and Usha Rani. Prasad has developed his line of argument on the postulation that there are some characters who are feasting with joy, but the book also has some characters whose lives are meant for fasting

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only and that too both physically and spiritually. He encapsulates, “Anita Desai’s *Fasting, Feasting* shows, apart from many other things, how women have to lead a life of suffocation and undeserved sufferings – both physical and mental in a male dominated patriarchal framework” (37); whereas, Usha Rani’s essay focuses chiefly on the gender-based attitude of the parents. She firmly states, “The reader wonders, how it could be that the same parents who are much worried and anxious about their son’s higher education, foreign degrees, could be so cruel to their first child and deny her even the little joys of life” (176). These critics have, however, comprehensively discussed how gender discrimination works negatively in the patriarchal society as it greatly affects the personality of the individual and how parents themselves discriminate between their sons and daughters. But these critics have not tried to probe how gender-discrimination works in female-female relationships; that is, how members of the same gender discriminate among themselves.

A considerable amount of energy has also been invested to bring out a thematic study of *Fasting, Feasting*. Critics like T. Ravichandaran consider entrapment as the central theme of the novel. Ravichandaran observes that “Reduced to a baby-sitter at her earlier days and an unpaid servant for her self-centred parents for the rest of her life, Uma finds no escape from her entrapment” (83). But his study is not confined merely to the analysis of entrapment of women characters; rather he examines how male characters are also ensnared. Ravichandaran holds the view, “And ironic enough, it is education which, instead of offering the desired autonomy, paves way for Arun’s entrapment” (86). He also tends to search reasons lying behind these entrapments and then dismisses them one by one. But he nowhere takes up the issue of a daughter’s entrapment at the hands of the mother.

Anita Desai has carved out a significant niche in Indian English fiction by centralizing in her fiction the mental agonies, the internal strife and trauma faced by the women protagonists with a difference. Thus, the psychological aspects of the novel have been critically examined by critics such as Meenakshi Raman and Sushila Rathore. Both these critics, in their combined study, analyse the internal anguish faced by Uma, the central character, with aplomb. They hold the view, “Her innermost self is smothered as a result of the open biasness shown by her parents after the birth of a son” (134). Their essay primarily focuses on the apathetic and rude behaviour of Uma’s parents that has never allowed her to become a mature

person. They are responsible in making her a diffident child having no inclination towards creating a separate existence. But these critics do not strive to find out what has raised conflict between Uma and her mother and thus made their relation strained. The psychological dimensions of mother-daughter relationship have been completely ignored by them.

Critics and scholars have also acknowledged the stylistics and technical features of *Fasting, Feasting*. M. Q. Khan points out that *Fasting, Feasting* marks a departure from all of Desai's earlier major works. He observes that "Apart from the clarity of language, it is the device of contrast of time, situation and characters that adds to the structural organization of the novel" (102). Khan also highlights that the use of similitude discloses Desai's utter simplicity of diction; it shows her "sense of preciseness, exactitude and accuracy" (102). He further observes that one may notice, while reading, her marvellous use of the syntax, the balancing of phrases and the force of narrative texture. However, he does not limit his study merely to technical features of the novel. Instead, he also remarks that "Her novels are not meant to explain the theories of philosophy and psychology; on the other hand, they reveal her involvement in the deep feelings of her women who are seen as the worst sufferers, highly suppressed by social 'tantalization' or marital discord" (105). But Khan does not notice the very expressions of Desai through which she unravels the latent conflict between Uma and her mother.

The studies about relationships have also been conducted by critics, and it is the mother-daughter relationship which is found at the centre of this novel. Critics like Asha Choubey and Aparna Goswami and Bhaskar Jyoti Goswami have used their pen to expose the latent reality of the tender bond that mother and daughter share. Choubey, in her study, quite strongly affirms, "Daughters are not all that dependent, admiring lot and mothers are not all that doting, sacrificing one. Their relationship is shaped by the circumstances that dominate" (Mothers 106). Her essay focuses on the apathy, indifference and alienation of Uma's mother which prove to be a great hindrance in the overall growth of her daughter, Uma. She holds the view, "Parental apathy – more precisely maternal indifference – destroys a life full of possibility" (Mothers 117). However, Aparna Goswami and Bhaskar Jyoti Goswami, in their combined study, employ a psychological insight to investigate the internal conflicts of

mother-daughter bonds. They chiefly assert, “The process of a woman’s attaining the status of a mother is not merely biological but a socio-psychological one . . . and overshadows all the other aspects of the concerned woman’s individuality” (191). They point out that sociological research in India has attributed larger than life status to motherhood. These critics proclaim the mothers of Anita Desai’s novels as self-centred who use their children as agents to fulfil their aims and aspirations, which they themselves could not attain. But these critics concentrate more on the general nature of mother-daughter relationships than on the psychological dimensions of the conflict existing between Uma and her mother.

Thus a brief critical appraisal of the existing criticism on *The Dark Holds No Terrors*, *Difficult Daughters* and *Fasting, Feasting* reveals that despite considerable critical acumen there is a dearth of studies about mother-daughter relationships. But it is also the fact that these novelists have not been accorded acknowledgement that they deserve for exposing the hidden recesses of mother-daughter bonds. It is quite surprising that only a few articles and research papers have been written on these novels which deal with mother-daughter ties, presenting only a lopsided view of their creative output. What is more surprising is that none of the critics has made a comprehensive and detailed analysis of various complex dimensions of mother-daughter relations presented in these novels. We just find a passing reference to the conflicts existing between mothers and daughters in these scanty articles. However, it does not mean that the vision of these novelists of mother-daughter predicament has not been recognized and acknowledged. There are a few critics who have done commendable studies focusing on some of the important aspects of mother-daughter bonds. But their little corpus of criticism is limited to a few issues related to this conflicting relation. There are numerous facets of mother-daughter relationships that remain yet to be explored fully. Therefore it would be interesting to discover the complex dynamics of mother-daughter ties in the Indian traditional patriarchal milieu. Most of the studies either completely ignore or give merely a cursory glance at the role and status of mothers and daughters, portrayed sensitively and realistically in these three novels. It clearly manifests that the available criticism on the present novels suffers from imbalances as well as distortions in evaluating the lot of mothers and daughters in the Indian society. A detailed study of these novels in question in the context of the travails and tribulations, victimization and exploitation of women as mothers and daughters in a male dominated society can do some justice to these writers’ art and

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vision. The present study seeks to make a humble attempt to fill the gaps in the existing criticism on mother-daughter bond though it does not pretend to say the final word on the topic. For the purpose of the study only the major works of these renowned novelists which have a direct reference to the topic have been taken up for an in-depth critical examination.

The attachment between mother and daughter is characterized by tenderness, love and affection. It is generally conceived as the most sacred bond replete with care and concern. The same kind of representation is found in the literature as well of the earlier times, since literature is a mirror to the society in which it is written and received. Swami Vivekananda has eulogized motherhood in these words:

The ideal of womanhood in India is motherhood that marvelous, all suffering, unselfish, even forgiving mother. The wife walks behind the shadow, she must imitate the life of the mother; that is her duty. But the mother is the ideal of life, she rules the family, she possesses the family. (58)

Thus motherhood has been glorified and celebrated since times immemorial. Even the Gandhian movement in India, which had the objective of emancipating women, projected mother as a self-effacing, sacrificing person. But with the dissemination of awareness, especially in the later years of twentieth century, it is realized that such sacrificing image ties women to the role of a mother and she herself is expected to forget her individuality and view herself as a mother. The fact that the mother is an ordinary human being with her own passions and emotions is miserably ignored in the patriarchal society. It is only the role of mother that defines a woman's life and her social identity. K.R. Sujatha and S. Gokilavani hold the view, "The nature of motherhood is dependent on the cultures and societies that have molded them. Indian motherhood is inculcated in the woman from the day of her birth. She is raised to look forward to nothing else and she rates her worth by her efficiency to fulfil this role" (147). The rearing responsibility makes mothers the most influential in a child's mind. It is the greatest and inexorable influence for good or evil in human life. A young child's mind is the unwritten page that is stamped with the mother's image. She becomes the first realization of affection, sympathy and tenderness. Naturally, children are influenced by culture, class, country and, most definitely, by their mothers. The values and attitudes that they carry throughout their lives are influenced by the mother's relationship and guidance.

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However, with the advent of psychoanalytic theories, the previously held assumptions about mother and her relationship with the child have given rise to a large body of critical discussions. Following the insights of Sigmund Freud, Jacques Lacan has presented three stages of a child's development: imaginary-stage, mirror-stage and symbolic-stage. In this regard Pramod K. Nayar observes:

Lacan argues that the child's notion and sense of the self emerges in its reference to an Other. Before the emergence of the self, the child lives in the realm of the *imaginary*. Here there is no distinction between the I and the Other. . . . In the pre-Oedipal stage the child has a *symbiotic* relationship with the mother, and does not distinguish between the mother's body and itself. (74)

Hence, it is in the imaginary-stage that the child finds itself in a one to one relationship with the mother where complete identification takes place. But when the child enters the mirror-stage, it begins to conceive a separate self of itself, different from that of the mother. "The 'mirror stage' is the origin of a fundamental alienation in the child's sense of the self" (Nayar 74), and finally, in the symbolic-stage, the child asserts its own identity represented by the language system. "The child discovers that it is separate from the mother, and is a part of a whole network – of family and society – in which it is expected and pre-ordained to play a specific part. It discovers that identity is based on difference – its difference from others" (Nayar 75). These doctrines of psychoanalytic critics greatly influenced the feminist studies in recent times. The feminist critics probe this relationship of mother and child minutely and often with different parameters. The male child, son, after reaching a certain stage, identifies himself more with the father than with the mother, and takes a leap into his own self. But, in case of daughter, she turns to the mother for strength, identity and understanding. In this context K.R. Sujatha and S. Gokilavani observe:

Children become the 'sole justification' for a woman's existence and motherhood the 'biological destiny'. These ideas are inextricably strung into the consciousness of a female child to accept the role of a child-bearer for the husband. She is educated with skills and knowledge that are essential for maternal activities and home making skills.

There is one more significant face of this relationship. Mother knows quite strongly, from first-hand experience, what it is to be a daughter in a patriarchal society. So she adopts mostly, if not always, a mask to socialize the daughter, so that she can be protected from the fate which the mother had to meet once. This mask is the mask of motherhood. There is a considerable difference between being a mother and between practising motherhood. This disparity is the result of two key factors: to be a mother is a natural phenomenon endowed to women by Nature, but the concept of motherhood is a product of patriarchal society produced and perpetuated by men for centuries. Motherhood is a collection of defined characteristics and principles dictated by society to women. “Motherhood is one of the cultural impositions that deny women personhood. . . . Motherhood itself erases both sexuality and selfhood” (Jain and Kumar 122). Just because she gives birth and lactates, the entire responsibility for rearing and caring of the child falls upon her. Otherwise, there is no other natural or innate reason why only a woman should do mothering. The father takes a leap into the public sphere, leaving the entire responsibility of the child onto the mother’s part.

Mother-daughter relationship is not a static but a dynamic one which passes through certain significant stages. What is interesting about it is that its impact can be felt on both of them, since every mother was once herself a daughter and every daughter would one day, possibly, attain motherhood. In this way, the experiences of the mother shape the life of the daughter, and the life of the daughter, in turn, transforms the experiences of the mother. Feminist psychoanalytic theorists suggest, “The sex-role socialization process is different for boys and girls. While boys learn maleness by rejecting femaleness via separating themselves from their mothers, girls establish feminine identities by embracing the femaleness of their mothers. Girls identify with their mothers, a sense of connection that is incorporated into the female personality” (Collins 52). Thus they are mutually related to each other. The only essential difference between them is that one is the original, experienced and fully realized self and the other is merely the mirror image of that self which keeps on struggling for the attainment of its originality.

In the patriarchal society, a woman has to suffer not only for belonging to the weaker sex but for being a daughter, being a wife and being a mother as well. These three roles constitute mostly, if not entirely, the feminine self of a woman. But if the daughter who is cursed even

in her childhood does not become a wife, it intensifies her sufferings. And even though after becoming a wife, if she cannot become a mother, she is looked down upon even by the members of her own sex. But what makes it more painful is that if the mother gives birth to a daughter, she has to face unbearable humiliation. Thus, the mother's suffering which started with being a daughter herself goes on and comes at its terrible climax by procreating her double. Therefore, woman's these two roles – daughter and mother – are inextricably attached to each other. But this mother-daughter relationship is not as simple as it seems initially; it becomes complicated between the daughter's childhood and adulthood.

The mother-daughter bond humming with love and affection has many diversified faces to show in today's scenario. The mother shares her own experiences and understanding with her daughter because she sees herself in her; and thus becomes extra protective. She feels herself important, strong and responsible in her relationship with the daughter. Alladi Uma comments:

We cannot deal with the daughter's role and position in the family – whether it be Afro-American or Indian – without dealing with her relationship with her mother. The mother helps the daughter to define herself. She passes on the values of the community she considers worthwhile. The daughter may accept, question or reject them. (76)

Moreover, a mother who is not recognized as equal by her man and who remains powerless, silent and repressed in her marital home tends to seek recognition in her relationship with her children, especially with daughter. She exercises power, control and restrictions on her daughter and thus gains a sense of authority and derives confirmation that she too exists. But exposed to the education in her adolescence, the daughter struggles to attain her individuality, by rejecting the womanliness of her mother. Her mother's mannerism, value system, life style, and everything belonging to her seem to the daughter a clumsy world of dependence and regression. Hence, the daughter sometimes reacts against and sometimes rejects her mother's overwhelming authority. Such behaviour of the daughter generates a feeling of guilt or failure in the psyche of the mother. "The more I get frustrated, the more she's [daughter] losing interest . . . I really get very frustrated for not being able to guide her properly. . . . I feel that I'm a terrible failure in raising my kids" (Marah). The daughter's reactionary

behaviour towards the mother's attitude of concern creates a breach in their attachment. This is the central conflict that makes mother-daughter relationships complex and strained.

But the real conflict arises when the daughter, even after forging an identity which is separate from the mother, frequently acknowledges that a part of her self is truly her mother's child. Alladi Uma rightly comments, "The mother is the culture bearer; no matter how diverse their views, the daughter is unable to reject her completely. . . . Even while a daughter may seem to be neglected by the mother, even while she questions the relationship, she cannot totally negate her mother or her influence" (71-74). This realization divides the daughter into two split personalities: she remains neither an educated and liberated self of her own choice nor a copy of the traditional daughter of her mother's dream. These conflicts of mother-daughter relationship along with other significant complex dimensions have been examined and explored in Deshpande's *The Dark Holds No Terrors*, Kapur's *Difficult Daughters* and Desai's *Fasting, Feasting*.

A critical examination of these texts in question reveals that a woman's two roles – mother and daughter – are connected together with emotional and psychological ties. The mutual bond and understanding which is an essential element of their relationship, is disturbed by the imposed patriarchal consciousness. These selected works represent the entire cult of motherhood, without romanticizing or idealizing, existing in Indian culture and literature, and the different types of relationships that mothers and daughters share in the wake of patriarchal consciousness. An in-depth critical analysis of mother-daughter relationships presented in these three novels, with a special focus on their psychological dimensions, yields new insights into the mind and vision of these renowned novelists of our time.

The study has been divided into five chapters. Apart from the first chapter of introduction and the fifth chapter of conclusion, three more chapters have been devoted to study the nature and complexity of mother-daughter relationships in relation to Indian woman's life and experience. A continuity of older social forms and norms has been critically viewed, along with the changes brought about in mother-daughter relationships by responses to the new situations.

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Chapter – 2

Mother-Daughter Relationships in *The Dark Holds No Terrors*

In the 1980, when Shashi Deshpande's novel *The Dark Holds No Terrors* was published, Feminist Literary Movement was at its zenith, touching highly sensitive issues with new modes of interpretation. For this reason, the novel has been first interpreted from a feminist point of view. Critics like Shubha Tiwari, Charu Chandra Mishra and Siddhartha Sharma have paid their due attention to the woman question in their respective studies. Thematic studies have been carried out by such critics as Premila Paul and Aparna Sundaram. Paul deals with the theme of confrontation as forming the central part of the novel; whereas Sundaram comments on the themes of marriage, sexual violence and Indian masculinity. The issues of gender-discrimination and identity formation have remained the concern of such critics as Nalinabh Tripathi and Beena Agarwal. A few critics like Mrinalini Sebastian have also interpreted *The Dark Holds No Terrors* as a postcolonial text. The studies in the psychological regression are conducted by critics like Arindam Chatterji. Thus the existing criticism on *The Dark Holds No Terrors* is quite insightful and penetrating, but basically aims at questioning the patriarchal system in one way or the other. Although, critics and scholars have taken up and discussed various problems faced by the woman in the contemporary male dominated society – gender discrimination, inequality of sexes, and male chauvinism – yet the strange mother-daughter relationship is centrally significant to the understanding of this novel. The studies in the mother- daughter relationships have been conducted by scholars like Rashmi Sahi and Rashmi Gaur. Sahi focuses on the influence of mother on the daughter's personality in general; and gender-bias and lovelessness existing in this relationship in particular. But her study is not psychologically penetrating, lingering merely on the surface level of this relationship. Though she has sincerely attempted to rephrase the sufferings of the daughter at the hands of her mother, but the question what are the psychological implications of these sufferings on mother-daughter relationship has not been adequately answered by her. On the other hand, discussing the basic characteristics of mother-daughter bonds, Rashmi Gaur presents how a girl-child is made to feel inferior in comparison of her male counterpart, and how such a girl, a victim of gender-discrimination, turns to be a rebel against her own mother. Though Gaur considers this relationship a complex one but her essay is a limited

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attempt in that it does not cover all its varied complexities, since she does not appear to bring either a new perspective or a freshness of treatment to this subject.

The Dark Holds No Terrors by Shashi Deshpande is an insightful story of mothers and daughters in a typical patriarchal framework, foregrounding the daughter's search for her own refuge. It is the institution of patriarchy which burdens the woman with its definitions of feminine characteristics and forces her to adhere to them. The interesting fact is that this work of moulding the woman in a patriarchy-constructed feminine identity is carried out by the woman herself. Patriarchy has used mothers to instill and perpetuate its values in the children of both sexes. A woman is made to feel blessed and superior if she gives birth to a son. Various rituals are performed to celebrate her achievement. As S. Anandalakshmi opines, "The birth of a son gives a woman status and she invests herself in her son's fixture, creating a deep symbiotic bond" (31). But soon the father becomes a role model for the son and he imitates and follows in his father's footsteps. On the other hand, the entire responsibility of a daughter's upbringing is solely left to the mother. The conditioning in the patriarchal society begins early in the childhood itself. "The conditioning begins at home and women are supposed to walk from mother's womb into mother's shoes" (Choubey 112). The mother, who has already internalized the patriarchal values and standards, gives her best to socialize the daughter in the same dearly-held traditions.

This dimension of mother-daughter relationships, in *The Dark Holds No Terrors*, has already been probed and critically discussed by critics and scholars. But there is something more deeper and more insightful that is still left unexplored. When mother, herself a patriarchal construct, imposes patriarchal principles and values on the daughter, the daughter may submit or rebel as a reaction to it. As psychologists suggest, mothers come to symbolize dependence, regression, passivity, and the lack of adaptation to reality. Turning from mother represents independence and individuation, progress, activity, and participation in the real world. (Chodorow 82) Moreover the daughter may hate and cause injury to her mother in response to her mother's apathy, indifference or alienation. But no daughter can escape completely from the burden of being the daughter of her mother. However, such a rebellion in the daughter is caused by her access to education and social awareness. But when the daughter herself attains motherhood and becomes an experienced self, she cannot help

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turning back again to her mother, if not exclusively for strength and understanding, then for measuring her present state. The same happens in the case of Saru, the protagonist of *The Dark Holds No Terrors*. She comes back to her parental home not merely to escape from the oppression of her husband but to weigh her experiences with those experiences of her mother; and thus to attain a balanced view of her relationship with her mother. Therefore it becomes interesting to examine how the relationships between mothers and daughters become strained and complex in the wake of gender discrimination in Shashi Deshpande's present novel.

The Dark Holds No Terrors essentially deals with Saru, the daughter, who, tormented and depressed as she is, comes back to her parental home in order to relive her relationship with her dead mother, whose painful memories constantly haunt her. But Premila Paul is of the view, "The stay in her father's house gives Sarita a chance to review her relationship with the husband, her dead mother, dead brother Dhruva and her children, Renu and Abhi" (30). It suggests that the mother-daughter relationship in this novel cannot be understood in isolation; it has to be seen along with other intimate relationships. However, even after accomplishing herself as a doctor, there is no fulfillment or satisfaction in Sarita's life. A sense of insecurity and unwantedness still persists in her unconscious mind. Rashmi Gaur very aptly encapsulates Saru's dilemma:

The girl-child Saru grows up as a victim of her mother's sexist and gender-based bias; which reduces her later life into a desperate struggle to overcome the initial victimization, to justify her decisions to her mother who no longer acknowledges her as a daughter, and to find out a new meaning to her life which could enable her to develop and nurture a balanced perspective towards her diversified roles as a mother, as a wife, and as a career woman. (88)

Since her childhood, Saru pines for love and affection. Even her birth in the family is treated as a bad omen. Saru states candidly, "But of my birth, my mother had said to me once . . . 'It rained heavily the day you were born. It was terrible.' And somehow, it seemed to me that it was my birth that was terrible for her, not the rains" (Deshpande 169). Her mother, however, dotes on her younger brother Dhruva and neglects her craving to be loved. Hence, Saru possesses no good memory of her mother: "I can only remember that she cursed me as no mother should" (Deshpande 25).

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The mother acts as a mirror for the daughter to conceive a distinct identity for herself. It's because every daughter is 'quite a little mother' full of possibilities and every mother is full of experience of being a daughter. Therefore the daughter sees herself in her mother and this identification leads her to constitute her selfhood. But Saru's mother reflects a negative image of her daughter. Saru painfully remembers, "I was an ugly girl. At least, my mother told me so. I can remember her eyeing me dispassionately, saying . . . You will never be good looking. You are too dark for that" (Deshpande 61). Saru is thus made to naturalize a negative image of herself. However she is further trained in the values of a male dominated society. Her mother says, "You should be careful now about how you behave. Don't come out in your petticoat like that. Not even when it's only your father who's around" (Deshpande 62). Saru is made to feel ashamed of her own feminine body when she approaches puberty. She is given a straw mat to sleep on and is served from a distance. The status of a pariah is offered to her and she feels, "A kind of shame that engulfed me, making me want to rage, to scream against the fact that put me in the same class as my mother" (62).

However, Saru's mother keenly seeks to shape her daughter after herself. Being a traditional mother, she is very careful about her daughter's looks which should one day tempt a man for her to marry. She dictates:

Don't go out in the sun. You'll get even darker.

Who cares?

We have to care if you don't. We have to get you married.

I don't want to get married.

Will you live with us all your life?

Why not?

You can't.

And Dhruva?

He's different. He is a boy. (Deshpande 45)

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Thus Saru is made to feel inferior to her brother in her early childhood. He enjoys all the privileges of being a son while Saru is denied even her own share of love. Each time she is the scapegoat and Dhruva is the object of attention. “The mother had been invariably stern with Dhruva; but, child though she was, she had known even then that the sternness was only a crust: that to her mother, compared to Dhruva, she herself was nothing” (Deshpande 84). Such discrimination on the part of the mother results in sibling rivalry. In this context Rashmi Sahi observes, “When a mother differentiates between her own children the boy and the girl for whom she has equally suffered and taken equal pains, there is no other torch bearer than for the girl child” (20-21).

In her relationship with her kid brother, Dhruva, Saru unknowingly becomes dominating like her mother. The reason is that because of the initial identification of the child with its mother, it internalizes some of the features of mother’s behavior and later recreates them in its future relationships. This is what Nancy Chodorow also says:

In later life, a person’s early relation to her or his mother leads to a preoccupation with issues of primary intimacy and merging. On one psychological level, all people who have experienced primary love and primary identification have some aspect of self that wants to recreate these experiences, and most people try to do so. (79)

Though Saru loves Dhruva and cares for him, but she detests him too for the advantages which he enjoys for being a son. Deshpande reveals through their relationship the social aspect of keen sibling jealousy born of a mother’s undue fondness for the son. As Charu Chandra Mishra is of the view, “It seems, at first, that against the patriarchal power of domination, her relationship with Dhruva forms the battle ground on which she is fighting for a space of her own” (97). There is three years gap between them. But Saru has a great advantage of being elder to him. It is only Dhruva who makes her feel important and she has an absolute control over him. Saru wistfully remembers, “She had ruled over him completely. No dictatorship could have been more absolute. And yet he had his revenges” (Deshpande 35). Dhruva has been terrified of the dark. During night he comes crawling into her bed. For Dhruva, thus, Saru acts as a surrogate mother in whose company dark holds no terrors for him. However the accidental death of Dhruva leaves Saru shocked and bewildered. But her mother’s hatred for her does not spare Saru even at this critical moment. Saru mother blames

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her innocent daughter for her brother's death whereas G. Dominic Savio believes, "Dhruva's demise had always been her subconscious desire and there is a very thin demarcation between her wish and its fulfillment" (61). Saru is made to feel guilty of the deed which she has not done consciously or unconsciously. Her mother holds Saru responsible for Dhruva's death and retorts, "You killed him. Why didn't you die? Why are you alive, when he's dead?" (Deshpande 191). These words of her mother, then, keep haunting Saru throughout her life, proclaiming her a murderer of her own brother. This nasty blow of her mother leaves Saru completely shattered and consequently a severe detestation shrouds their future relationship. Charu Chandra Mishra points out, "Throughout the novel this guilt consciousness seems to act like a fatal flaw at times driving her to a mental state bordering on schizophrenia. This is the turning point in the novel that brings the mother-daughter conflict to the forefront" (97).

Saru shares the same kind of strained relationship with her father as well. As Sunita Reddy opines, "If her mother had provoked her by her blatant hostility, her father had contributed to her present predicament by remaining a mute spectator in the family drama" (qtd. in Sharma 30). Her father never takes any responsibility of his daughter and leaves everything to the mother. "He never took any interest in my school or college. He left it all to her. And she never really cared. Not after Dhruva's death, I didn't exist for her. I died long before I left home" (Deshpande 32). Sometimes, Saru tries to seek his attention, but he always dotes on his son, Dhruva. Like her mother, her father too does not care for his daughter's desires and dreams. The prejudice of her father that girls are mother's responsibility makes her nervous. She has an intense longing for filial affection. Saru contemplates on her situation: "The reserve was perhaps part of an old-fashioned attitude that daughters are their mothers' business. But my mother had nothing for me, either. Whose business was I then?" (Deshpande 105). Saru's father rarely speaks to her; and this communication gap renders their relationship strained.

The fear of being betrayed or being rejected remains rooted in Saru's consciousness. The roots of her isolation lie in her own childhood experiences. Beena Agarwal observes:

Saru's presence in the family was treated as a curse to the family because her mother considered Saru responsible for the death of Dhruva. The negligence of mother,

indifference of father and the burden of the guilt of the death of brother, enforced Saru to leave her parental home to seek spaces in professional life. (33)

Saru decides to join medical college to study medicine. But her mother does not approve it. She prefers a simple BSC for Saru to graduate so that she can be easily married off after that. This infuriates Saru and she spits, “I’m not talking to you. I’m not asking you for anything. I know what your answer will be. No, forever a ‘no’ to anything I want. You don’t want me to have anything, you don’t want me to do anything. You don’t even want me to live” (Deshpande 142). Saru considers her mother her biggest enemy, because she tries to curtail her freedom and professional career. Simone de Beauvoir comments:

Real conflicts arise when the girl grows older; as we have seen, she wishes to establish her independence from her mother. This seems to the mother a mark of hateful ingratitude; she tries obstinately to checkmate the girl’s will to escape; she cannot bear to have her double become an other. (534)

Saru’s relationship, at this stage, with her mother becomes so much strained that she now wants a total freedom from her mother’s dominance. And the medical degree seems her passport to this freedom. But Saru’s mother objects to her father’s decision and pleads to reject this career option in the name of hostel expenses and her marriage. She blurts out, “And don’t forget, medicine or no medicine, doctor or no doctor, you still have to get her married, spend money on her wedding. Can you do both? Make yourself a pauper, and will she look after you in your old age?” (Deshpande 144). But this time Saru’s father takes his daughter’s side. This act of her father spoils his loyalty to his wife and her mother feels hurt badly. This further raises her mother’s temper and she accuses Saru harshly, “That’s what you think. What do you know of other’s feelings? When have you ever cared about anyone’s feelings but your own? As long as you can have your own way, you aren’t bothered about anything at all. Your own brother . . . She killed her brother. She killed her brother” (Deshpande 145). Thus Saru’s mother never lets her get rid of guilt consciousness. She incessantly keeps on reminding her of that traumatic accident. Consequently, this leaves an indelible guilt feeling in her mind and Saru begins to hate her mother. K. M. Pandey is of the view, “Through this and other examples in the novel Shashi Deshpande conveys an important

message that suppression, subjugation and exploitation are not confined to the male-female relationship but exist between a female-female relationship as well” (52).

Saru becomes restless to get admiration, social recognition and professional success to seek a space equal to her brother. She completely devotes herself to get medical degree that seems to her the sole mean to attain freedom. However, her wish to be a doctor is instilled in Saru by her mother’s neglect. Once Saru states: “No, I couldn’t. I had to work hard, to be a success, to show them . . . her . . . something. What? I didn’t know. But I had to make myself secure so that no one would ever say to me again . . . why are you alive?” (Deshpande 50). Thus whatever happens in Saru’s life is related, directly or indirectly, to her relationship with her mother. She cannot shake off her mother’s influence wholly even after separating herself from her. As Nancy Chodorow mentions:

A very young child, for instance, may feel invulnerable and all-powerful because it has introjected, or taken as an internal object, a nourishing and protecting maternal image, which is now experienced continuously whether or not its mother is actually there. Alternately, it may feel rejected and alone whether or not its mother is actually there, because it has taken as internal object an image of her as rejecting and denying gratification. (42-43)

Constant neglect and rejection of her daughter by Saru’s mother has so badly affected Saru’s psyche that now it seems almost impossible for her to believe that she can be somebody’s beloved. “Insofar as aspects of the maternal relationship are unsatisfactory, or such that the infant feels rejected or unloved, it is likely to define itself as rejected, or as someone who drives love away” (Chodorow 78). Hitherto devoid of love, her heart cannot easily admit the thought that she can be the center of attention. Saru states candidly, “I thought no male would take that kind of an interest in me. Yet, there was one” (Deshpande 91). This shows that Saru has been suffering from inferiority complex. There is always an insecurity and uncertainty about her, making her self-conscious every time. She remarks, “And yet there was always a gnawing disbelief . . . how could I be anyone’s beloved? I was the redundant, the unwanted, an appendage one could do without. It was impossible for anyone to want me, love me, need me” (Deshpande 66). The shadows of childhood insecurity have grabbed her so intensely that now it seems very hard for her to break through them. She keeps on meditating on her

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childhood and this adversely affects her relationship with Manohar. Saru's barren heart becomes fertile in the company of a professor, Manohar. An aura of knowledge about him fascinates Saru towards Manohar. When he too responds to her feelings, she, for a moment, cannot believe it. She thus gives words to her feelings:

It was impossible that I could mean so much to any human being. It was impossible that such things could happen to me. They happened only to girls in movies and books, not to girls like me. And yet, I could not doubt his love. He cared for my feelings as no one had ever done. (Deshpande 39)

Her mother's hostility has created in Saru a dislike so strong that she develops a habit of doing everything that her mother opposes. When Saru tells her mother about Manohar, she asks:

What caste is he?

I don't know.

A Brahmin?

Of course not.

Then, cruelly . . . his father keeps a cycle shop.

Oh, so they are low-caste people, are they? (96)

Such words of her mother, full of disgust, prejudice and hatred, enrages Saru so much that she becomes adamant to marry this man only. Unfortunately this impulsive decision of Saru has made a hell of her life. She painfully utters, "If you hadn't fought me so bitterly, if you hadn't been so against him, perhaps I would never have married him. And I would not have been here, cringing from the sight of letters, fighting with terror at the sight of his handwriting, hating him and yet pitying him too" (Deshpande 96). Thus a kind of madness has overtaken Saru resulting from her mother's hostility to her.

"Ironically, a female can be made an agency for the effective promotion of a male point of view as in the case of Saru's mother" (Tripathi 43). Therefore to blame the mother alone for the miseries of Saru would be a rather partial view of the situation. Besides mother, it is the Language in India www.languageinindia.com

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institution of patriarchy and the wrong or biased conditioning of the daughter that are to be blamed. Saru, at one place, meditates on her grandmother who was deserted by her husband, leaving her behind with two little daughters, one being her own mother. It was said that her grandfather had opted for Sanyas, a total renunciation of the material world. It was, however, her grandmother's father who then looked after them and got the girls married. "But there had been, obviously, the burden of being unwanted, of being a dependent. Yet her grandmother had never, so she had heard, complained. It's my luck, she said. My fate. It was written on my forehead" (Deshpande 70). Thus, Saru's mother's own childhood is spent with the feeling of unwantedness and dependency on others. Hence she has internalized these feelings of rejection and negligence as part of a girl's life. She creates exactly the same kind of atmosphere for Saru as she had once received in her own mother's home. As Simone de Beauvoir observes;

But why should her daughter, this other woman, enjoy advantages denied to her? Ensnared in 'serious' matters herself, she is envious of all the occupations and amusements that take the girl out of the boredom of the home; this escape gives the lie to all the values to which she has sacrificed herself. (535)

For Saru's grandmother the need of the time was to get her daughters married. The same concern for the daughter she has transferred to Saru's mother. Therefore being a typical product of patriarchal conditioning, Saru's mother wants for her daughter a marriage and not a career in medicine. When Saru rebels against her mother's choices, she becomes hostile to her daughter. "But then it had been a kind of miracle anyway, her joining medical college in spite of her mother. Standing up against her, asserting her will against her . . . that had seemed impossible" (Deshpande 139). This victory of Saru against her mother's constant rejection creates a breach between mother and daughter, and alienates them from each other.

Saru's obsessive remembrance of the mother is indicative of both her sense of guilt and her sense of defeat. It signifies that Saru is guilt obsessed and this guilt does not permit her to seek wholeness in personal relationship. She concedes, "It seemed incredible to me that I could evoke an emotion so strong in anyone. That anyone could care for me in that way and to that extent" (Deshpande 65). Moreover, it was her mother who made her dream of finding happiness through a man. But this does not work for her and she finds disappointment in it.

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Beena Agarwal points out, “Saru’s decision of marriage as a compensation for her loss was an error on her part that adversely affected her perception and expectations in personal life” (36). It is Saru’s relationship with her mother, bereft of any emotional bond, which renders her emotionally starved in her married life too. Each of her physical contacts with Manohar merely satisfies her bodily cravings without touching her being. Saru wistfully captures the scene:

But when we got married it was like nothing I had ever imagined. After the first moment of apprehension . . . a purely physical response or lack of it, rather . . . there was never any withholding in me. I became in an instant a physically aroused woman, with an infinite capacity for loving and giving, with a passionate desire to be absorbed by the man I loved. (Deshpande 40)

Thus in spite of being physically fulfilled Saru remains emotionally unsatisfied. It is the void created in her by her childhood neglect which she now seeks to fill. “I was insatiable, not for sex, but for love. Each act of sex was a triumphant assertion of our love. Of my being loved. Of my being wanted. If I ever had any doubts, I had only to turn to him and ask him to prove his love for me. And he would . . . again and again and again” (40).

But the fear of being rejected is so intensely ingrained in Saru’s psyche that it leaves no room for fulfillment. Shubha Tiwari comments, “A child who is not loved and cared by his/her parents is likely to develop deep rooted sense of fear, insecurity, and rejection” (87). And soon she realizes that happiness is a mere mirage. Saru remembers how a particular incident becomes a turning point in their blissful marital relationship. One day an interviewer asks Manohar, “How does it feel when your wife earns not only the butter but the bread as well” (Deshpande 35-36). This comment hurts Manohar’s ego so badly that he turns out to be a sadist. He cannot tolerate his wife to be more successful and respected than himself. So he takes vengeance for this on her in bed. Saru states, “He attacked me. He attacked me like an animal that night. I was sleeping and I woke up and there was this . . . this man hurting me. With his hands, his teeth, his whole body” (Deshpande 201). In the day time, however, Manohar behaves like a normal man. Sometimes she thinks it to be a mere hallucination but what about the bruises. Saru wonders how can be a man so divided in himself. She never questions Manohar for such inhuman behavior because “her early relationship with her

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mother had moulded her psyche to accept drudgery and self-negation as norms of routine existence and to treat herself as an undesirable parson in a sub-conscious manner” (Gaur 99). Now love and romance seem to her mere illusions. In the name of love there is only brutal act of sex frightening the already scared child in her. Saru feels, “And still, for long the fear was there; the secret fear that behind each loving word, behind each kiss, lay the enemy, the snake, the monster of rejection” (Deshpande 66).

A daughter usually confides her secrets into her mother’s bosom but unfortunately that source is missing in Saru’s life, not for her mother is dead now but because no tacit understanding ever exists between them. She has nobody in her life to share secret pains and unburden her heart. “The urge to confide in someone, to talk to someone, was growing in her. Often she had found herself staring at people, weighing them up, thinking . . . are you on my side? Are you? And, even more often, waking up at night with a start, thinking . . . I am alone” (Deshpande 43). What is more pitiable about Saru is that she begins to perceive herself from the parameters of her mother. The daughter who “wanted to hurt her, wound her, make her suffer” (Deshpande 142) finds herself hurt, wounded and suffering from her mother’s curse. Saru confides in her father, “She cursed me, Baba. . . . Even her silence at the end was a curse. And you say she died peacefully. . . . Does a death redeem a whole life? Can’t you understand, Baba, that it’s because she cursed me that I am like this?” (Deshpande 197).

A sense of guilt engulfed Saru when she realizes that she has deserted her mother. She wonders, “Will Renu turn mocking eyes on me one day? Will Abhi defy me? Will they betray me as I betrayed her?” (Deshpande 139). She attempts to identify herself with her mother not in the role of mother but as being a woman. Once she has thought that “If you’re a woman, I don’t want to be one” (Deshpande 63). But now she compares her situation with her mother and finds, “. . . my mother had no room of her own. She retreated into the kitchen to dress up, she sat in the dingy room to comb her hair and apply kumkum, she slept in her bed like any overnight guest in a strange place. And I have so much my mother lacked. But neither she nor I have that thing ‘a room of our own’” (Deshpande 135-36). Once Saru has thought that “to get married, and end up doing just what your mother did, seemed to me not only terrible but damnable” (Deshpande 140). But in her attempt to divorce herself

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completely from her mother, and to be a sheer opposite of her mother, Saru ends up becoming a parable of Indian womanhood. Like a traditional woman she wants to make her marriage a success. Her profession of a doctor has left no space for her to be a good wife and a loving mother. Sometimes she imagines:

I saw myself, the end of my sari tucked into my waist, hair tied into a neat knot, smiling at them all as I served them. And all of them smiled back at me. A mother in an ad, in a movie, dressed in a crisply starched, ironed sari. Wife and mother, loving and beloved. A picture of grace, harmony and happiness. Could I not achieve that? (80)

Even after becoming independent there is lack of happiness, fulfillment and harmony in Saru's life. Therefore she wants to search them in the life of a traditional woman. She now, at her father's home, cooks for Madhav and her father, keeps the house clean, washes the cloth herself, and lives confined in the four walls of the house. "The gestures, the actions, the very words that accompanied them were, though she did not realize it, her mother's. As if she was unconsciously, unknown to herself, mimicking the mother she had never admired, never endeavoured to imitate" (Deshpande 106). Thus despite her deliberate attempts to remain split off from her mother, Saru sometimes finds herself acting out the role of her mother.

Saru's fears, uncertainties and insecurities are not merely confined to her relationship with her mother but they also exist in her relationship with her children. Saru once mentions, "It had been in her for some time now, a feeling that her unhappiness was a taint that would eventually stain them as well" (Deshpande 134). Saru notices strangeness in her daughter Renu's behavior. Saru describes, "She stares at me critically at times, a cold, shrewd, objective observer behind those little girl's eyes of hers. And I become nervous, unsure, uncertain of myself" (Deshpande 33). Sometimes, it seems to Saru that the sterility and monotony of her own life is badly affecting her daughter's life too. Renu, however, mirrors her own mother's anguish and depression. Saru states distinctly, "She does not talk much. She reminds me of a room whose doors are closed. Nothing emerges, neither joys nor her sorrows. And I sense a lack of feeling, of sensitivity in her" (Deshpande 33). Even in her paintings, Renu draws thick forest shrouded by darkness, a kind of manifestation of her inner landscape. With that mystery about her, Renu represents her grandmother. "And yet she knew how often Renu reminded her of her mother. Her quiet watchfulness. The feeling she gave

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you of being weighed up, criticized, possibly rejected” (Deshpande 34). Consequently, Saru sometimes, uncertain about herself, wonders whether she is an unnatural, unloving mother? She decides that she would give her children their due love and care which she herself has never received from her mother. So that they would not blame her the way she blames her mother. However, the kind of mother that Saru wishes to become has been described by Simone de Beauvoir as women who are “sufficiently satisfied with life to desire reincarnation in a daughter or at least to accept a daughter without disappointment; they will want to give the child the opportunities they have had and also those they have missed” (533).

However Saru sees herself and her brother, Dhruva, in her own children. She senses sibling rivalry between Abhi and Renu that once existed in her relationship with Dhruva. On her birthday, Renu complains to her mother, “Why do you always scold me? You never scold him. You never say anything to him. It’s not fair. It’s my birthday, my presents. And he cried and spoilt everything. And now you scold me. You always scold me. It’s not fair, not fair” (Deshpande 173). Saru’s own childhood fears again become alive and she thinks that life is an endless repetition of the same pattern. In this context Beena Agarwal makes a powerful observation, “The fault lies in the social structure in which bitterness of binary relationship passes from one generation to another generation” (45).

Saru’s feeling of being unwanted and rejected is so acute that she begins to hate her own existence both as a wife and mother. “She was not a wife, not a mother, not a professional woman whom others looked up to. She was the wronged child again, the unloved daughter, the scapegoat” (Deshpande 182). For Saru, there is no one to sooth her, comfort her. The words of her mother, “You killed him. Why don’t you die? Why are you alive, when he is dead?” (191), keep haunting her. Saru remains guilt conscious first for being blamed for Dhruva’s death and second for deserting her mother. She thinks, “Her cruelty to Dhruva, to her mother, to Manu . . . she would never be rid of it. She would carry this ugly, unbearable burden until she died” (Deshpande 212). Saru’s mother was in a habit of finding fault with her daughter. As a result, Saru loses confidence and begins to blame herself. She thinks that now no forgiveness is possible. She confesses to her father, “My brother died because I heedlessly turned my back on him. My mother died alone because I deserted her. My husband is a failure because I destroyed his manhood” (Deshpande 217). Her perception of

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life has changed completely and she begins to conceive life from a traditional woman's point of view. Saru thinks, "It's my fault again. If mine had been an arrange marriage, if I had left it to them to arrange my life, would he have left me like this?" (Deshpande 218).

Shashi Deshpande, in one of her interviews, said that: "Being mother, daughter, wife is important for a woman but that is not the be all and end all of her existence" (qtd. in Sahi 22). Therefore, the end part of the novel shows Saru accepting her loneliness and simultaneously attempting to reconcile and negotiate with her mother's memories and her guilt and doubts. Saru contemplates:

They came to her then, all those selves she had rejected so resolutely at first, and so passionately embraced later. The guilty sister, the undutiful daughter, the unloving wife . . . persons spiked with guilts. Yes, she was all of them, she could not deny that now. She had to accept these selves to become whole again. (Deshpande 220)

A better realization of her relationship with her mother descends on Saru when she tries to accept the elements she hitherto neglects and detests because they, in one way or the other, belong to her mother. What Premila Paul feels about Saru is that: "Though she tries to learn from the mother what not to be, she ends up as an educated version of the mother herself" (35). Saru's coming back to her mother's home suggests a daughter's effort to understand her mother's behavior. When Saru puts her feet into her mother's shoes, then she realizes what it is to be a mother in the patriarchal society. The values which a mother tries to instill in her daughter and restrictions which she put on her are merely the modes of survival in patriarchy. Perhaps mother believes in the simple dictum that it's difficult to remove every stone from the road, but it's easy to protect feet with slippers.

In patriarchy only time changes but the woman's condition is still the same as it was centuries ago. Time changes and so do the things; but how much actually and in what proportion? Various attempts have been made, bulky books have been written occupying a considerable space in the libraries, cases are filed in the courts, processions are taken out, newspapers are full of women's pitiable stories, political parties proclaim a better social status for women; but the question is: has it brought any significant change in woman's condition? Unfortunately the answer is 'No'. However, the novel, *The Dark Holds No*

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Terrors, does not limit itself to depict the complex mother-daughter relationships. With a woman as the central figure, Shashi Deshpande probes the universally relevant issues of human relationships. What Saru accepts at the end is applicable to all human beings. She declares, “All right, so I’m alone. But so’s everyone else. Human beings . . . they’re going to fail you. But because there’s just us, because there’s no else, we have to go on trying. If we can’t believe in ourselves we’re sunk” (Deshpande 220). When Saru confronts this nothingness positively, a strange kind of feeling grapples her. “She was overcome by a queer sensation, as if everything was unreal. Her own body felt insubstantial. There was a feeling of weightlessness that made her almost euphoric” (Deshpande 219).

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Chapter – 3

Mother-Daughter Relationships in *Difficult Daughters*

Manju Kapur's debut novel *Difficult Daughters* came in 1998, and was hailed as a significant contribution to the female phase of feminist movement. Being a woman writer, Manju Kapur is essentially acknowledged by critics as a novelist who speaks about women and for women in the complex web of patriarchal Hindu society. Thus, feminist issues, firmly incorporated in her novel, have received a considerable amount of critical attention in recent years. Christopher Rollason talks about the idea of female independence; whereas critics like Shaleen Kumar Singh find the clash of tradition and modernity at the center of the novel. Another group of critics like Shilpi Rishi Srivastava, Sangeeta Mehta and Ruby Milhoutra focus on the emergence of 'New Woman' and her search for identity and autonomy in *Difficult Daughters*. There are also critics, including Binod Mishra and Reena Mitra, who attempt at analyzing the novel from a humanitarian standpoint. Critics like Indira Bhatt explore the issue of marriage in *Difficult Daughters*. Kapur's present novel has also been interpreted as a post-colonial piece by critics like Sunita Sinha and O. P. Dwivedi. Within this huge corpus of critical works there still remains a critical dearth of studies on mother and daughter relationships.

Manju Kapur is a writer committed to human relationships that are found to be scattered throughout her fictional world, and *Difficult Daughters* is no exception. Hers is a world where relationships dominate and determine, in their contrast and complexity, the lives of her characters. Herself very much attached to her mother, Kapur seems to be fascinated with the mother figure. Such inclination of Manju Kapur towards the mother and her representation of motherhood has obligated few critics to search out and explore the mother-daughter relationships as depicted in her novel, *Difficult Daughters*. Asha Choubey in her comparative study of Anita Desai's *Fasting, Feasting* and Manju Kapur's *Difficult Daughters* makes a very comprehensive analysis of how the life of the daughter is influenced or marred by that of the mother. But her paper focuses merely on the maternal apathy, indifference and alienation, almost excluding every other dimension of this relationship. On the other hand, Jaydeep Rishi seeks to dwell upon the complex nature of mother-daughter ties as portrayed in this novel without probing their varied complexities. However, the fundamental limitation of these

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critics is that they tend to analyze mother-daughter relationships in isolation. These relationships, complex as they are, cannot be understood in isolation; rather they have to be viewed in relation to all other possible relationships. Such an intensive study, encompassing all mutually connected relationships, can reveal the hitherto latent dimensions and complexities which are intricately integrated in mother-daughter bonds. Therefore, the objective of this attempt is to explore the love and hate relationships, including their varieties and complexities, existing between mothers and daughters in Manju Kapur's present novel.

Manju Kapur's award winning novel, *Difficult Daughters*, primarily deals with both mothers and daughters and the complicated relationships which they share. Sudarshan Sharma points out that "It is a first-rate realistic novel about a daughter's reconstruction of her troubled past hinging on her mother's story describing how she was as a daughter" (46). The novel reveals the attitude of three generations of women- Kasturi (Virmati's mother), Virmati and Ida (Virmati's daughter). In other words, it captures the complex relationships between mothers and daughters over a period of three generations. Mother is supposed to be the root and daughter the fruit of this relationship. If fruit does not receive proper nourishment from the root, its growth and development can be marred. "The character of the infant's early relation to its mother profoundly affects its sense of self, its later object-relationships, and its feelings about its mother and about women in general" (Chodorow 77). This book, however, is a memorial to a mother (Virmati) from her daughter (Ida) to establish the value of that mother who has been thoroughly misunderstood by her daughter. Ida, in her journey to her mother's past encounters different phases and stages in her relationship with her mother.

Ida, a divorcee and childless lady, with a heavy heart after her mother's death, confesses: "Without her, I am lost. I look for ways to connect" (Kapur 4). Ida remains a difficult daughter for her mother throughout her childhood and after. The fundamental conflict in Ida's life is what she declares in the very first sentence of the novel, "The one thing I had wanted was not to be like my mother" (Kapur 1), and what she accepts in the epilogue, "I grew up struggling to be the model daughter" (279). What makes Ida a difficult daughter is her negation of the ideal daughterhood, which has supreme value in her mother's estimation. Moreover, being husbandless, childless and parentless, Ida has "no brave causes left" for her

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to live. To add to this, her mother's painful memories keep haunting her. Therefore, she makes an insightful attempt to recapture the history of her mother's life; so that she can have a better understanding of her relationship with her mother and of herself. In this context Kusum Lata Sawhney's observation is worth quoting:

When you are a teenager, she [mother] is the most out-of-touch person who just does not understand you. We want her approval all the time and become irritable and disappointed when she is critical, for, she seems to only notice our flaws! When we are in our twenties and thirties, we again change and, hopefully, we become friends again. This is because you have matured or because marriage and childbirth also make you understand yourself better and in doing so you also have further insight into your relationship. (1)

Hence, when the daughter takes to writing about her mother, this is actually her attempt to search out her own roots, identity and strength. Hitherto, Ida has a partial view of her mother's life. She wants to know the daughterhood of her mother, and thus tends to identify herself with her.

Judith Kegan Gardiner observes that "the word 'identity' is paradoxical in itself, meaning both sameness and distinctiveness, and its contradictions proliferate when it is applied to women" (347). In the light of the above statement, it can be concluded that "identity" for a female is both identification with the mother and a distinct self. This contradiction is the result of the fact that mothers are not all that doting, sacrificing ones, but are also instruments through which the patriarchal society exercises its values. In this context Asha Choubey aptly observes: "Feminists, however, have deprived motherhood of much of its halo. The kind of motherhood that has been celebrated through tradition is a myth created by the male of the species to chain their womenfolk" (107). Thus, the dominating circumstances shape the mother-daughter relationships in society. In her attempt to get recognition, the girl child, daughter, protests to be different from the mother. But when she herself attains motherhood, only then the daughter tends to identify herself with the mother.

Virmati, in *Difficult Daughters*, is the eldest daughter out of eleven children born to Kasturi in a respectable 'Arya Smaji' business family at Amritsar. Kasturi enjoys her

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fecundity and every year gives birth to a child. At an early stage of her childhood, Virmati is taken for granted by her mother to rear and care for her younger siblings. Hence, she has to play the role of a second mother for her brothers and sisters. Consequently, her own childhood remains devoid of maternal care. Since her childhood, Virmati, like Saru in *The Dark Holds No Terrors*, longs for love and affection but does not get any. “At times Virmati yearned for affection, for some sign that she was special” (Kapur 6). But at every point Virmati is made to feel responsible for the family and her mother’s offspring. If she ever attempts to protest, her mother spits, “You are the eldest. If you don’t see to things, who will?” (Kapur 7). Most of the time her mother remains either sick or pregnant, and the entire household is left for Virmati to manage. The daily domestic chores consume much time of the day and this affects Virmati’s studies. Despite her consistent efforts, she cannot perform well in studies. But Kasturi can never understand the restlessness of her daughter. For her to get married and settle down is the sole career that a girl must aspire for. She once comments, “Why was her daughter so restless all the time? In a girl, that spelt disaster” (Kapur 12).

There is one more significant mother-daughter relationship between Shakuntala (Virmati’s cousin) and Lajwanti (Shakuntala’s mother) which has a very strong bearing on Virmati and her relationship with her mother. Shakuntala is a well-educated and socially aware girl who teaches in Lahore. She is unmarried and lives independently at her own terms. “Normally few dared to mention Shakuntala’s unmarried state, each remark was such an insult to the mother” (Kapur 15). This is because the mother considers the daughter as her double. Therefore, when her daughter is criticized, she takes it to be a criticism of herself and her values which she has once implanted in her daughter. For this reason, Lajwanti too gets irritated, “When will this girl settle down? . . . All the time in the lab, doing experiments, helping the girls, studying or going to conferences. I tell her she should have been a man” (Kapur 16). However, there is something peculiar about Shakuntala’s relationship with her mother: though Lajwanti is critical of her daughter’s unmarried status and her strange ways to live life, but she, unlike Kasturi, cares for and usually takes her daughter’s side. At their Dalhousie stay, when Virmati reveals her wish to meet Shakuntala, Lajwanti said appraisingly, “How can anyone see her when she has no time? Such a talented teacher, so popular, what an inspiring example she is for the younger ones” (Kapur 15). Though she is appreciative of Shakuntala’s achievements but being a mother in a patriarchal society, she

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fears for her daughter's future. But this dimension is found to be lacking in the relationship which Virmati and Kasturi share with each other. Kasturi never appreciates her daughter, never gives any sign of affection, and always passes discouraging remarks about Virmati. Such treatment of the mother leaves Virmati baffled and starved for love and affection.

Virmati's relationship with her cousin sister, Shakuntala, also contributes vitally to her changing outlook towards her mother. She tends to identify herself with her cousin and minutely observes the changes that Lahore has wrought in her: "She looked vibrant and intelligent, as though she had a life of her own. Her manner was expensive, she didn't look shyly around for approval when she spoke or acted" (Kapur 16). This fascinates Virmati and seeds of aspiration are planted in her by her glamorous cousin. Shakuntala once remarks, "These people don't really understand Viru, how much satisfaction there can be in leading your own life, in being independent. Here we are, fighting for the freedom of the nation, but women are still supposed to marry, and nothing else" (Kapur 17). Consequently, the seeds of protest begin to grow in the submissive daughter. "I want to be like you, Pehnji," said Virmati, "If there are two of us, then they will not mind so much" (17). Virmati starts following Shakuntala and she becomes a role model for her. Now Virmati, too, longs for the freedom which her cousin enjoys without any kind of inhibition. "She watched her ride horses, smoke, play cards and badminton, act without her mother's advice, . . . Above all, she never seemed to question or doubt herself in anything" (Kapur 18). This sister-sister relationship plays a dominant part in shaping the further conflicting nature of Virmati's relationship with her mother. Virmati is now ready to fight with her mother, to assert her individual rights, similar to Shakuntala's. She wishes to shake off the mask of submission given to her by her mother. This makes Kasturi restless and she says disapprovingly, "Study means developing the mind for the benefit of the family. I studied too, but my mother would have killed me if I had dared even to want to dress in anything other than was bought for me" (Kapur 17).

Kasturi's own relationship with her mother is not compatible enough. Once she is caught praying to a picture of Christ. "Her mother had torn the picture, screamed and shouted, and threatened to marry her off, before she brought further disgrace to the family" (Kapur 61). Kasturi's mother is a tradition bound woman for whom education is merely a gateway of

marriage. “In most of the cases the mother figures accept the socially imposed constructs which make them simultaneously the worst victims and the most vocal supporters of patriarchal values” (Rishi 91). Her father, a firm believer in Swami Dyanand’s doctrines, pays due attention, despite the mother’s disapproval, to Kasturi’s education. And thus, she becomes the first girl in their family whose marriage is postponed for a tentative period. But after the period of five years, her formal education was over. “After she graduated, her education continued in the home. Her mother tried to ensure her future happiness by the impeccable nature of her daughter’s qualifications. She was going to please her in-laws” (Kapur 62). Kasturi is thus conditioned by her mother to consider marriage as the ultimate aim of a woman’s life. Asha Choubey rightly states:

Mothers, being women, were themselves conditioned by their mothers first and the society at large next. Mothers take it as their duty to condition their girl child into the norms of the patriarchal society. The sooner the process is begun, the better it is for the daughter. (113)

Kasturi is educated in sewing, stitching and other domestic chores. Her mother never allows her to take her own decisions.

A mother thus, conditioned and trained in traditional ways of patriarchal society, transfers these values and standards to her daughter. “The conditioning begins at home and women are supposed to walk from mother’s womb to mother’s shoes” (Choubey 112). Moreover, how Kasturi can afford to grant Virmati her share of freedom when she herself could not get any. Because most of the mothers firmly believe in what Simone de Beauvoir says:

She also tends to inflict upon her the disadvantages from which she has suffered. Sometimes she tries to impose on the child exactly her own fate: ‘what was good enough for me is good enough for you; I was brought up this way, you shall share my lot’. (533-34)

Similarly, not much attention is paid to Virmati’s education. When she is in Dalhousie taking care of her mother, “she could hear her mother telling her not to waste her time [over studies], there were more things to do” (Kapur 20). Unfortunately, Virmati fails in her FA exams due to everyday household duties and responsibilities that she has to carry, much

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against her will. Tears roll down her cheeks when her mother passes discouraging comments on her. She tries to defend herself but Kasturi retorts, “Leave your studies if it is going to make you so bad-tempered with your family. You are forgetting what comes first” (Kapur 21). Virmati compares her situation with that of her cousin, Shakuntala, and cross questions her mother. Kasturi feels irritated to think how can her meek daughter be so rebellious? She chides Virmati, “At your age I was already expecting you, not fighting with my mother” (Kapur 22). Kasturi can never understand why Virmati is so passionate about education. Sometimes, she wonders how education can replace marriage and home. For her education means learning the basics techniques of housekeeping. She questions Virmati, “What kind of learning was this, that deprived her of her reason? She too knew the value of education, it had got her her husband, and had filled her hours with the pleasure of reading” (Kapur 60).

Virmati like Saru, protagonist of *The Dark Holds No Terrors*, feels as a neglected and unwanted child in her mother’s home. “The language of feeling had never flowed between them, and this threat was meant to express all her thwarted yearnings” (Kapur 12). This very lack and dearth of love created in her by her mother renders Virmati vulnerable to the implorations of Harish, the professor. In his company, for the first time in life, Virmati finds herself wanted. Harish makes her feel important enough to be loved and cared for. He gives his books to Virmati to read and checks her copies for correction. Thus the professor stands in sharp contrast to Virmati’s mother. He works on her dream to be independent through education, whereas her mother does not even allow her to dream. So, it’s natural on the part of Virmati that she turns her attention from her mother to the professor. In this connection what psychologists say is “A girl alternates between total rejection of a mother who resents infantile dependence and attachment to her, between identification with anyone other than her mother and feeling herself her mother’s double and extension” (Chodorow 138).

Virmati finds herself torn between the prestige of her family and the love of the professor. Harish promises her education, hope and a bright future; whereas her family represents restriction, prohibition and her wedding. “It seemed to Virmati that her family could talk of nothing else but her wedding. Every word they said had so little relation to her inner life that she felt fraudulent even listening to them, passively, immorally silent” (Kapur 70). Meanwhile, Virmati’s marriage is fixed with Inderjeet, a canal engineer. She feels trapped

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and does not find any solution. When, no way out is left for her she tries to commit suicide, but is saved. This attempt of Virmati relegates her in the eyes of her family, especially of her mother. Kasturi feels herself betrayed by her daughter. Simone de Beauvoir points out:

In her daughter the mother does not hail a member of the superior caste; in her she seeks a double. She projects upon her daughter all the ambiguity of her relation with herself; and when the otherness of this *alter ego* manifests itself, the mother feels herself betrayed. (532)

Any insult to Virmati seems to her the insult of her own motherhood and upbringing. “She could never wipe out the stigma of having a child thoughtless enough to contemplate ending her life without consideration for what her family would suffer” (Kapur 82). Kasturi considers herself tainted by the ungrateful act of her daughter. This further creates tensions in their relationship. Virmati’s family questions, “Was this all her education had taught her? To put herself before others, and damn the rest?” (Kapur 86). This question which was asked to Virmati indirectly questions Kasturi’s mothering capabilities. This is unbearable for Kasturi; therefore, for the first time, Virmati is slapped by her mother across her face. “For this, I let you go to college. So that you are ruined permanently? Are you mad?” (86). This slap creates a breach in their relationship and makes Virmati more rebellious. Finally, she is locked in the godown and her younger sister Indumati is got married to Inderjeet. Such an inhuman treatment leaves Virmati shattered, longing for any sign of affection. In one of her letters to the professor, she confesses, “Long ago I used to dance and run in the rain when nobody was looking. Now I pine for drops” (Kapur 88).

Kasturi never offers her shoulder to Virmati to weep upon, never extends her hand to wipe her tears, and never outstretches her arms to embrace and console her daughter. An absolute dearth of understanding and emotional bonding becomes the hallmark of their relationship. Asha Choubey rightly comments:

Maternal alienation can be sensed all through the thoughts and deeds of daughters. . . .
The absence or lack of mother’s sympathetic shoulders at home forces these daughters to look for sympathy outside in turn leads to deception. Daughters become vulnerable to outside influences. The sense of belonging that is the essence of a good relationship

is found sadly missing from this relationship which is most vital in the life of a woman.
(114)

If her own mother does not care for her daughter, then who else Virmati can expect anything from. Consequently, like Saru in *The Dark Holds No Terrors*, she loses the zest for life; her existence seems meaningless to her. She reveals her desire to the professor, “If I was to be a rubber doll for others to move as they willed, then I didn’t want to live” (Kapur 92), and she also mentions, “I am just like the sacks of wheat and dal here, without my own life” (93).

For Kasturi, like Saru’s mother, education has a corrupting influence on her daughter. She cannot tolerate her educated daughter to transcend the boundaries of her domestic sphere. For her, “A woman’s shaan is in her home” (Kapur 16). Thus Kasturi is least concerned about educating her daughter further. She intensely seeks to shape Virmati after herself, and considers any attempt of Virmati to independence as an ungrateful act of selfishness. Hence, Kasturi here unknowingly voices the ideology that is integral to patriarchy. “She holds those values as ideal which patriarchy has taught her to be so. And when her daughter rebels against such values she takes it to be a rebellion against her own self” (Swami 68). Therefore, the question of being independent, without getting married and having her own home is beyond Kasturi’s understanding. Virmati informs the professor, “Mati blames it all on college. She should have married after Inter, she keeps saying. See what this reading has done to her. She feels she knows more than her own father and mother” (Kapur 93). In this way, Virmati’s education poses a threat or challenge to the authoritative and superior position held by her mother in her relationship with her offspring. “The pleasure of feeling absolutely superior- which men feel in regard to women- can be enjoyed by woman only in regard to her children, especially her daughters; she feels frustrated if she has to renounce her privilege, her authority” (Beauvoir 534). Virmati’s education pinches Kasturi like a twig in her eyes. Virmati painfully tells this to the professor in her letter, “My mother keeps saying that all my education has achieved is the destruction of my family” (Kapur 99). Here destruction of family implies the destruction of family tradition in which Kasturi has been conditioned, and whose values she has internalized and considered as standards. In this regard, professor’s words are very insightful:

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If, as sometimes happens, our education leads us to question some of the value systems by which we live, that is not to say that we are destroying tradition. The tradition that refuses to entertain doubt, or remains impervious to new thoughts and ideas, becomes a prison rather than a sustaining life force. Even the smallest one of us has a social function, but that function is not to follow blindly beliefs that may not be valid. (Kapur 102)

The man-woman relationship as portrayed by Manju Kapur in this novel is equally significant in relation to the mother-daughter relationships as it contributes, directly or indirectly, to the understanding of their diversified facets. This Man-woman relationship has been presented principally by Harish Chandra and Virmati. Neglected by the mother, Virmati, like Saru, begins to find faults with herself and starts blaming herself for the disgrace to the family. Here, it is Harish, the professor, who with his progressive outlook casts an intellectual influence on Virmati and makes her see the reality in the spotlight of reason. He firmly tells her, “We are being murderers towards ourselves if we do not develop our intellect” (Kapur 103). But Virmati is convinced that she is responsible for the pain and agony her family suffering. In such situation when Virmati cannot view the things in their appropriate measure, Harish guides her by making her confront the social reality. He asserts, “Who is responsible for this state of affairs? Society, which deems that their sons should be educated, but not their daughter. Society that decides that children- babies really- should be married at the ages of two and three as we were. As a result, both of us needlessly suffer for no fault of ours” (Kapur 103). Consequently, in her relationship with her mother, Virmati becomes more adamant, determined and rigid in her decision not to marry. Finally, her family plans to send her to Lahore. Virmati is, however, sent to Lahore not merely to educate her further, but because, “Mati says at least I wouldn’t be at home to remind her of the eternal disgrace I am to everybody” (Kapur 108). And Virmati leaves for Lahore to do her BT. With a heavy heart, contemplating on her situation, she ruminates: “There are families who want a career for their daughters. Nobody wanted anything for me except a husband” (Kapur 110).

Kasturi, however, cannot leave Virmati all by herself, so she herself accompanies her to Lahore. She still feels responsible for her daughter; and for that reason makes one last attempt to make her daughter see reason. She says, “If you cannot consider your duty to us, at least

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consider yourself. There is a time in the cycle of life for everything. If you wilfully ignore it like this, what will happen to you? A woman without her own home and family is a woman without moorings” (Kapur 111). But these emotional words from Kasturi cannot change the decision of her daughter who is determined to be free from all social restrictions, family boundaries and her mother’s dominance. There is so much pain and hatred in Kasturi’s heart caused by her daughter’s betrayal which she reveals to Shakuntala, “the girl was so stubborn and independent, no matter what they did for her, she wasn’t grateful” (Kapur 113). But only this pain and hatred do not characterize their relationship at this stage. Notwithstanding, the mother in Kasturi cannot help pitying her daughter, “My poor girl, for this she wouldn’t marry. For living in a solitary, poky little room in a strange city, for eating hostel food, for the loneliness of single life” (Kapur 115).

Now Virmati feels a vacuum within her, where only desert of loneliness reigns supreme without any stream of love flowing there. All her emotional ties with her mother have already been broken. Now there persists merely the blood relation between them. Virmati, such an isolated self, is left more vulnerable to the outside world represented by the professor. It gives him an opportunity to take the advantage of Virmati’s situation; and he begins to pay frequent visits to her in Lahore. At the initial stage, Virmati keeps herself aloof from his debilitating influence, contemplating on her parents’ statement about him, “A man who is already married and a traitor to his wife can never give happiness to any woman. He is a worldly person caught in his own desires. Nothing solid” (Kapur 93). But later, she succumbs to his tempting ventures. She finds the desired love in the professor’s arms and longs for his presence at every moment. Consequently, Virmati gets involved in a useless love affair and an unwed pregnancy. She has to undergo an abortion. It is, then, that she realizes the vacuum existing in their relationship. Indu Swami observes: “She does not know that love and autonomy cannot coexist. Love makes one vulnerable and vulnerability does not lead to autonomy” (69).

In her relationship with Swarna Lata, her roommate in Lahore, Virmati again relives her relationship with her mother. Just like Virmati, Swarna too feels alienated from her mother. She tells Virmati, “It’s only because of my father that I am here. My mother wanted me to marry. She said I had done my BA and that was enough. Where was all this study going to

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end?” (Kapur 117). Swarna’s resolution to do something valuable without merely getting married helps Virmati to justify her decision to study further against her mother’s constant complaints. In Swarna’s company Virmati is exposed to the social and political milieu of the time. Swarna tells her in clear terms, “Marriage is not the only thing in life, Viru. The war-the satyagraha movement- because of these things, women are coming out of their homes. Taking jobs, fighting, going to jail. Wake up from your stale dream” (Kapur 151). At this stage, Virmati is completely under the spell of Swarna, and her life is taking a new turn. Under her influence Virmati thinks, “This is the life I should be involved in. Not useless love and a doubtful marriage” (Kapur 134). But a typical product of her mother’s patriarchal conditioning, Virmati lacks self- confidence. She is not capable enough to share her feelings with other people. It is because she is never allowed by her mother to speak for herself. “In a dim, obscure way, Virmati longed for that open- hearted conversation between friends that relieved the mind, and strengthened faith in oneself, but she had always found it difficult to articulate her feelings” (Kapur 141).

Virmati gets the opportunity to work as principal in the Pratibha Kanya Vidyalaya at Nahan. This job offers security and stability in her life, but she still feels isolated from the world of love and care. A daughter is an extension of her mother’s personality, and thus cannot completely escape from her roots. Virmati too cannot get rid off from her mother’s memories. “Virmati shut her eyes and breathed deeply, and thought, Mati was right, I cannot escape punishment for what I have done” (Kapur 170). A sense of guilt begins to prick her conscience. The professor too cannot remain detached from her for a long time, and he comes back in her life. “He came to be the spectre that lay between her and her life as principal, so that she too began to look upon her stay there as a period of waiting rather than the beginning of a career” (Kapur 184). Unfortunately, one day she was detected with the professor and has to lose the job forever. She has made up her mind to go to Shantineketan to study further, for she cannot face her mother again after causing another disgrace to her family. Suddenly, she meets the professor in her way to Shantineketan and they are got married.

However, by becoming the second wife of the professor, Virmati completely breaks away from her mother and family. “She promised herself a blissful marriage; after all, they had gone through so much to be together. Her husband would be everything to her. This was the

way it should be, and she was pleased to finally detect a recognizable pattern in her life” (Kapur 207). But this marriage proves fortunate neither for Virmati nor for her family. She has to live a life of a stranger in her husband’s home. Ganga, first wife of the professor, and her mother-in-law treat Virmati as a stranger and untouchable. She is not allowed to enter into the kitchen or touch anything. She cannot talk or play with any of the children. “He smiled at her lovingly and left, leaving her to pass a day alone in a place where her pariah status was announced with every averted look” (Kapur 215). Thus neglected by her in-laws’ family, Virmati once goes to visit her mother at her parental home. But she receives nothing except insult and hatred, what else to expect for. Her mother retorts:

Get out of here! Why bother to come now? . . . It would have been better if you had drowned in the canal than live to disgrace us like this! . . . You’ve destroyed our family, you *badmash*, you *randi*! You’ve blackened our face everywhere! For this I gave you birth? Because of you there is shame on your family, shame on me, shame on Bade Pitaji! But what do you care, brazen that you are! (Kapur 220-21)

Thus, the last tie of her relationship with her mother is also broken by her marriage to the professor. Virmati’s own life becomes difficult for her to live in any meaningful way. Now she belongs neither to her parental home nor to her in-laws’, lingering somewhere in the deep recesses of her mind. “That was how far she had come from her family, how much they hated her. She was not to be invited for her own brother’s wedding, when the furthest, most removed relative would be pressed to come” (Kapur 225).

Neglected in her in-law’s house, Virmati receives a marginalized place in her own family. To add more to her miseries, she receives the news of her father’s death caused by the partition riots. But Kasturi’s hatred for her does not spare Virmati even at this critical moment. As Saru’s mother, in *The Dark Holds No Terrors*, blames her innocent daughter for her brother’s death; similarly Kasturi unjustifiably charges her daughter, Virmati, for her father’s accidental death. “Because of you he died. Otherwise is this the age to go?” (Kapur 239), says Kasturi, “Would your pitaji have gone if he didn’t have to live with the disgrace his daughter caused him?” (240). Witnessing such an inhuman behavior of her mother towards herself, Virmati is left deserted. These pricking questions of her mother stir the conscience of Virmati. She begins to consider herself as an isolated being that is unwanted

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both in her parental home and in her in-laws' abode. The next day, her grandfather too expires, and this leaves her completely broken. "Her father had died without forgiving her, and now her grandfather too. Not one of her family cared for how she felt" (Kapur 240). She does not attend any of the rituals which are performed after her grandfather's passing away. After that, she hardly speaks even to her husband, the professor.

Once Virmati conceives and things change in her in-laws family, if not completely at least in small ways. The behavior of Kishori Devi, Virmati's mother-in-law, is radically transformed. She substitutes "Virmati's morning cup of tea with a glass of hot milk" (Kapur 242), and Virmati becomes the focal point of her attention. Now she offers Virmati to sleep with her and chants every night some Sanskrit slokas to her. But this period of care and attention does not last long, for she unfortunately has a miscarriage. And this results in a great humiliation. "It had been over a year since their marriage and all that had made Virmati so dear to him seemed to have vanished completely" (Kapur 247). Again further study is thought to be the only refuge from the distress Virmati is suffering. But the resolution of Virmati's further studies causes great bitterness in the family. It is because the family has limited resources and to spend money on the education of a married woman is not considered intelligible. Finally, an MA in Philosophy is decided for Virmati.

Now Virmati's staying separate from her husband in Lahore further complicates her relationship with her mother. Virmati never contemplates how her mother would have felt when she left her mother alone and ignored her values and concerns. Once her father had commented, "After she had been educated, she had gone her own way, changed from the caring, responsible girl she had always been, to a stranger, deaf to reason, threats or pleading" (Kapur 235-36). But Virmati alone is not responsible for this complexity in her relationship with her mother. Kritika Tiwari points out:

Most problems with the mother daughter relationship start with a breakdown in communication. Sometimes, the daughter is headstrong and won't listen to her mother's sage advice. Other times, the mother is a little bit too controlling and won't give the daughter room to breathe. More often than not, there is a little bit of both aspects going wrong when mother daughter relationships break down.

When, in Ida's memory, Virmati is in Lahore doing MA in Philosophy, the partition riots force Ganga, with family, to shift to Kanpur. Virmati gets the chance to come back to her own home and live with her husband. One day they are informed that their neighbourhood is going to be attacked. "The attack proved to have been a rumour, but it did serve one purpose. Virmati's mother sent for her. There she gives birth to a daughter named Ida. The times demanded from Kasturi that she carry resentment no further" (Kapur 274). Thus a kind of reconciliation, though not an apparent one, takes place between the mother and daughter. As it is said, "Often, mother and daughter relationships are most strengthened when things get tough. No matter how often families fight, they tend to stick up for each other when situations go wrong" (Tiwari).

"Our inheritance from our mothers, then, is not of property . . . But instead, it is a longing for becoming, for a creation of ourselves, and an entitlement to discover, to recreate what surrounds us" (Bannerji 186). This is true in the case of Ida, the narrator, who attempts to reconstruct the history of her mother and thus seeks to discover identity for herself. Ida does not want to be like her mother because she cannot identify herself with her. An isolated being as she is, Ida, however, has only her mother to look for her identity. "The detachment enables her to start a journey that takes her two generations back (her mother's and grandmother's) and to build a tale, never told by Virmati herself, essential to give a sense of her life and define her identity" (Bruschi 235). Ida wistfully compares her own experiences with the experiences of her mother in order to recreate her identity.

Since childhood, Ida has remained difficult daughter for her mother, as Virmati was for Kasturi. Moreover, in trying not to be like her mother, and to portray herself as the sheer opposite of her mother, Ida confirms her inheritance. She herself says, "She couldn't have, because when I grew up I was very careful to tailor my needs to what I know I could get. That is my female inheritance. That is what she tried to give me. Adjust, compromise, adapt" (Kapur 256). After reconstructing her mother's past, Ida realizes that Virmati too had protested against her mother, much like herself. "Yet travelling backwards in time complicates the figure of Virmati, which gains depth as Ida reads her life through her own experiences and, little by little, finds her own sensations reflected in her mother's; when she learns about Virmati's rebellion against Kasturi" (Bruschi 250). Ida can relate herself to the

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image of her mother that she has captured through her memory and imagination. She can feel the pain that her mother had to undergo while aborting a child. “I knew mother, what it was like to have an abortion. Prabhakar had insisted I have one” (Kapur 156). After knowing about her mother’s marginalized position in the in-laws’ house, Ida cannot help relate it with her own married life. She painfully addresses her dead mother:

Now I have nothing. Mother, I never told you this, because you thought Prabhakar was so wonderful, and I was glad that in the choice of my husband I had pleased you. Why should I burden you with my heartaches when you had enough of your own? You believed too strongly in the convention that a mother has no place in a daughter’s home to stay with me, so you never really got to see the dynamics of our relationship close at hand. (Kapur 156-57)

As Virmari kept her life a secret to her daughter, similarly Ida never shares her tensions and worries with her mother. Ida concludes about her mother, “She was, after all, a woman who had defied her own family for many years” (Kapur 256).

There are mothers who use guilt and emotional blackmail to keep their daughters in subordinate status and to make the daughters do their bidding. These mothers reason that since they gave birth to their daughters and made the prerequisite sacrifices for them, their daughters should be grateful and be glad to do whatever mother wants. This is because the mother represents patriarchy and expects from the daughter to conform to the norms and values of this system. These values are transferred from the mothers to their daughters, generation after generation. When the daughter, Virmati, who was difficult for her mother to handle, herself becomes the mother of a daughter, then she realizes the meaning of being a mother. She imposes the same restrictions over her daughter, Ida, which were once imposed upon her by her own mother, Kasturi. Ida states candidly: “My mother tightened her reins on me as I grew older, she said it was for my own good. As a result, I am constantly looking for escape routes” (Kapur 279). The daughter who first felt alienated from her mother, now, by reconstructing the past of her mother, arrives at a better understanding. Isabella Bruschi observes:

Ida's search in the past allows her to come to terms with the haunting memory of her mother. She realizes Virmati has been, like her, a difficult daughter, who has tried to challenge patriarchy, despite her failures; the distance between the two of them is reduced by the many experiences Ida discovers they have in common. (252)

The transformation of a protesting daughter, Virmati, into a submissive mother makes the whole matter clear for Ida in particular and for readers in general; that is, mothers are not wrong in exercising certain control over their daughters. In patriarchy, it is their attempt to keep their daughters safe. To put it differently, by imposing certain restrictions over their daughters, mothers show their concern for the safety of their daughters. At the end of the book, understanding takes place between Ida and her mother. She declares: "This book weaves a connection between my mother and me, each word a brick in a mansion I made with my head and my heart. Now live in it, Mama, and leave me be. Do not haunt me any more" (Kapur 280).

Manju Kapur's novel, *Difficult Daughters*, thus touches various dimensions of mother-daughter relationship. Initially, the daughter, belonging to the same sex, identifies herself with the mother. "Women as children are able to identify with their mothers quite strongly" (Panja 61). Then a stage comes when in her attempt to assert her identity, the daughter breaks away from the mother and feels alienated. However, when the same daughter, after being an experienced self, looks back at the past of her mother, she realizes what it is to be a mother in a patriarchal society. In this way, again an identification and understanding takes place between the daughter and the mother. In this regard, Asha Choubey's observation is worth quoting:

As a child she [Virmati] keeps craving for a little understanding from her mother but with the passing of time she learns to accept the situation as it is. This mother-daughter relationship marches from identification to alienation. Years after Ida – the daughter of Virmati – relives her relation with her mother, marching from alienation to identification. (110)

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Chapter – 4

Mother-Daughter Relationships in *Fasting, Feasting*

The novel seems to be based, as the very title suggests, on the binary opposition, fasting and feasting, which dominate the life of the modern men and women in all sections, groups and societies world over. This dichotomy works in the lives of proletariat and capitalist, servant and master, poor and rich, and above all woman and man. The title itself is ironical, putting the oppressed one before the oppressor. But Anita Desai has invested something very new and peculiar in this novel; that is, how this dichotomy works between female-female relationships. Thus, primarily the story of human hungers, *Fasting, Feasting*, merits appreciation from the feminist point of view. Critics like Asha Choubey and Pamela Oliver have made a profound attempt to expose the implicit injustice and strategies of female subjugation in the patriarchal society. The issue of gender-discrimination is raised and analyzed by critics like Amar Nath Prasad and Usha Rani. Thematic studies have also been carried out by critics like T. Ravichandran. However, the novel has been interpreted at psychological level too by such critics as Meenakshi Raman and Sushila Rathore. The studies in the realm of stylistic and syntactic structure have been conducted by critics like M. Q. Khan.

However, Anita Desai's novel, *Fasting, Feasting*, published in 1999, seems to have been influenced by the radical phase of feminist movement. Radical feminists essentially demand complete emancipation from the shackles of oppressive patriarchal stereotypes. The basic problem faced by such feminists is how to challenge and subvert the norms of patriarchy while, simultaneously, being parts of the same system itself. "To evade this dilemma, Helena Cixous posits the existence of an incipient 'feminine writing' (écriture feminine) which has its source in the mother, in the stage of the mother-child relation before the child acquires the male-centred verbal language" (Abrams 97). Anita Desai is, undoubtedly, one among such radical writers who tend to challenge the stereotypes of motherhood. Therefore, a few critics like Asha Choubey and Aparna Goswami and Bhasker Jyoti Goswami have focused their study on this aspect of *Fasting, Feasting*. These critics have tried, with genteel enthusiasm, to decipher the ground reality of mother-daughter relationships. Choubey arrives at the conclusion that when daughter does not receive the desired love and affection, and when

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there is a dearth of understanding between mother and daughter, it leads to alienation and depression in the psyche of the girl child. This renders the daughter vulnerable to the pressures of the world outside. On the other hand, Aparna Goswami and Bhaskar Jyoti Goswami, in their combined paper, approach mother-daughter relationship from a psychological point of view. They consider that a reluctant approach to motherhood, by mothers, is a way of asserting themselves. Thus these critics have something radically different to present; that is, maternal apathy, indifference and alienation are not negative but instead positive attempts on the part of mothers to get rid of their motherhood, in which they have been chained. But it seems as if these critics have ignored the fact that such attempts by the mother, however, bring drastic, and more often destructive, changes in the personality of the daughter. Therefore, the main objective of this study is to examine how the mother's negation of her motherhood poses threat to the growth and development of the child, especially of daughter, and simultaneously focusing on the oscillation occurring in the relationships of mother and daughter in Anita Desai's novel in question.

Anita Desai's novel, *Fasting, Feasting*, is not merely a book about woman and her diversified roles as mother, daughter and wife; but it also "recounts human relationships in the language not only of fasting and feasting but of greed, craving, taboo, denial and disgust" (Dasgupta viii). Delineating the human hungers, as its title suggests, the novel is about the starving daughters and prospering mothers who are no more concerned with their motherly duties as made necessary by patriarchy. Though remaining within the threshold of male dominated society, the mother here retains something of her own, a niche for her individual being, divorced from the duties of a traditional mother. In addition to this, "the novel gives an excruciating account of how society can seize control of individuals – especially women – through such practices as eating, and remove them from everything they intended to be" (Dasgupta viii). It shows that Desai's vision is quite different from that of Shashi Deshpande and Manju Kapur. Here the mother adapts the traditions and values of patriarchy for creating a haven for herself. Aparna and Bhaskar Jyoti Goswami comment, "Desai's female characters can often be seen as librated even from the emotional responsibility of motherhood. They are conceived of as primal creatures, busy in pursuing their own motivations, desires and thriving for the fulfillment of their selves" (192). She does not bother, in the way of a traditional woman, for children and family, turning her face from the responsibilities of a mother. By

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leaving her children devoid of maternal care and love, she keeps on enjoying her life with her male counterpart. But the question arises if woman, in the wake of feminist movement, abandons her domestic sphere completely, what would become of her children? How can freedom be earned at the cost of negating motherhood? The reputed American public thinker Camille Paglie remarks, “Woman’s current advance in society is not a voyage from myth to truth but from myth to new myth . . . An awful lot is being swept under the rug, the awe and terror that is our lot” (qtd. in Pandy 208). Thus it seems as if in the light of the new millennium, the caring eye of the mother has lost its eyesight, leaving the children in the eternal darkness of abandonment where insanity awaits them. Individual freedom won at the cost of assassinating one’s own children’s emotions is worthless. There must be a kind of harmony, some sort of balance between a woman’s two distinct roles- of a mother and of an individual. Otherwise what being sown are mere dry bones of neglect, rejection and hatred; it can be imagined what would sprout from them.

The novel, *Fasting, Feasting*, has been divided into two segments, dealing with two diverse cultures – Indian and American. The first part tells Uma’s story in relation to her mother with the backdrop of her relationships with her sister, Aruna, brother, Arun, and her father. Desai has portrayed these relationships so intricately that it seems almost impossible to understand mother-daughter relationship without approaching them simultaneously. Much like Jane Austen, Anita Desai primarily deals with two or three families as forming the plot of her present novel. Uma’s family consists of her parents and their two daughters, one being Uma herself. The parents have merged into each other so intensely that now it appears quite difficult to conceive them as separate beings. “MamandPapa. MamaPapa. PapaMama. It was hard to believe they had ever had separate existences, that they had been separate entities and not MamaPapa in one breath” (Desai 5). The novelist has not felt the need to give them separate names; instead, they are addressed as MamaPapa in the same breath.

In his review of the novel, Andrew Robinson comments, “In Papa and Mama, the Indian parents, she [Anita Desai] creates two monsters of almost Gothic proportions, locked into inseparable marital disharmony, determined to inflict on their two daughters and only son every ounce of the prejudices and disappointments of their own lives, as a respectable barrister and his wife in an undistinguished town (39). Uma’s father had studied under the

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streetlight and seems to be infatuated with education; whereas her mother is a housewife who has absorbed patriarchal values to such an extent that she cannot even like to think beyond patriarchal horizon. Herself a victim of gender discrimination, she remembers, “In my day, girls in the family were not given sweets, nuts, good things to eat. If something special had been bought in the market, like sweets or nuts, it was given to the boys in the family” (Desai 5). Thus conditioned by the gender biased attitude of the parents, Uma’s mother embodies all the feminine traits expected from a girl in a patriarchal society. Pramod K. Nayar aptly observes:

The woman is thus “naturalised” with the qualities that are granted her. She is never able to be other than this image given her. Male versions of femininity are deemed as the definitive versions – there is no female truth except what the *male construes it to be*. This is, unfortunately, deeply assimilated into/by the woman too. (88)

Uma’s mother is also a socially constructed self, a product of patriarchal ideology. Desai describes, “. . . her eyes gleamed with mischief as she tossed back her head and laughed apparently without any thought of propriety. She clasped the cards to her chest and fluttered her lashes coquettishly” (7). But Uma’s mother lives a double or split existence; she lives both as an individual and a traditional wife.

At the initial stage “there is seen a special bond between the mother and the two girls, all of them being the victims of Papa” (Choubey, Mothers 111). But later the mother becomes one with her husband and serving him remains the sole aim of her life. The mother is completely overtaken by patriarchy represented by the father. It is because:

. . . his thoughts were one with hers. Their opinion differed so rarely that if Mama refused to let Aruna wear a pearl necklace to the matinee at the Regal cinema or Papa decided Uma could not take music lessons after school, there was no point in appealing to the other parent for a different verdict: none was expected, or given. (Desai 14)

Therefore, the daughters of the family, both Uma and Aruna, receive only rejection from their parents. The mother either remains busy with her husband on the swing in the varanda or in going for kitty parties and playing cards with her female friends. The daughters are treated as nuisance by their mother. “She swatted at her daughters as if they were a pair of troublesome

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flies . . . her daughters trailing after her, and by the time she arrived at the varanda, her manner had become the familiar one of guarded, restraint, censure and a tired decorum” (Desai 7). In doing her duty to serve her husband, Uma’s mother does not pay any heed to her daughters and they are left neglected, bereft of any care and affection. “Mama would sit herself down on the varanda swing, alone, to wait for him, keeping a cursory eye on the little girls as they played in the dry patch of grass . . . She intervened irritably when they quarreled too loudly” (Desai 8).

Alva Myrdal and Viola Klein observe:

‘Children First’ is the motto writ large over all discussions of the merits and demerits of married women. . . . Our children are our stake in the future; hence their well-being is of vital concern to society as well as to us personally. And as we have brought them into this world, it is our responsibility to make them, as best we can, fit to live in it happily and successfully. (116)

But these caring words sound true only in regard to a son. In patriarchy, the upbringing of a daughter remains a half-hearted affair to the parents. Uma’s parents’ irresponsible behavior towards their daughters leaves the girls bewildered. “The girls had learnt not to expect divergences and disagreements, and these occurred so rarely that they might not have recognized them when they did” (Desai 14). One day Uma’s mother is found to be pregnant. As a result of an aspiring father, the pregnancy is not terminated and a son is born in the family. In patriarchal system, a mother is made to feel blessed by giving birth to a male heir. Hence the expressions of Uma’s mother also change, “They were acutely aware of the wonder of it. Mama’s face, still tense from the difficult delivery, began to relax and broaden into long-suffering pride” (Desai 16-17).

Alladi Uma comments, “A daughter is confident about a mother’s love. She knows she is not a second class member of the family; she is no supplement. She is a necessity in her mother’s life. At times her mother depends on her. It is an interdependence and a reciprocity we cannot miss” (73). But there is no such interdependence and reciprocity in Uma’s relationship with her mother. A hindrance in her daughter’s life, Uma’s mother leaves no room for her daughter to prosper. Asha Choubey observes, “Desai as a true humanist puts the

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blame not only on men who are suffering with the complex of male-superiority but also on women who oppress their own kind. It is not only the male-chauvinist that acts as the antagonist force but also apathetic female does more harm in terms of the loss of woman-soul” (Frailty 126). Uma is reduced to the status of a domestic servant. Her mother’s sole aim is to please her husband and she uses Uma to carry it out. Uma is always asked to tell the cook to make this or that for Papa or to take care of her younger brother, Arun. Her mother has risen in status after becoming the mother of a son:

More than ever now, she was Papa’s helpmeet, his consort. He had not only made her his wife, he had made her the mother of his son. What honour, what status. Mama’s chin lifted a little into the air, she looked around her to make sure everyone saw and noticed. She might have been wearing a medal. (Desai 31)

Therefore, all the love and care is showered on the son and the daughters never even receive their share of attention and, in addition, are treated merely as an obligation by the parents. Uma herself notices, “how Mama and Papa looked upon Arun with an identical expression: a kind of nervous, questioning, somewhat doubtful but determined pride. He was their son, surely an object of pride” (Desai 31).

Such a gender-based attitude on the part of parents seems somehow unnatural but what Amar Nath Prasad remarks is quite relevant, “Most probably, the reason of their frustration and step-motherly treatment can be sought in the psychology of the parents- such parents who are more interested in a boy child than in a girl child” (40). However like Virmati in *Difficult Daughters*, Uma too is burdened with the responsibility of her kid brother even before she can enjoy her own childhood. The eldest sister is made to act as a surrogate mother to her younger brother. The author candidly states, “When Mama came home, weak, exhausted and short-tempered, she tried to teach Uma the correct way of folding nappies, of preparing watered milk, of rocking the screaming infant to sleep when he was covered with prickly heat as with a burn” (Desai 18). Thus, Uma’s mother begins to shape her daughter in the traditions of patriarchal society where a girl is moulded in the role of a housewife and a domestic servant. Moreover herself not much educated, Uma’s mother pays no attention to her daughter’s education. Like Kasturi, Virmati’s mother in *Difficult Daughters*, she does not

value her daughter's academic career. Once she snaps, "We are not sending you back to school, Uma. You are staying at home to help with Arun" (Desai 18).

Like Virmati and Saru, Uma wants to be educated, but unlike them fails miserably in her attempts. Uma remains, like Virmati, engaged in household chores which consume most of her valuable time. No tuition classes are arranged by her parents. As a result, Uma fails in her exams miserably. The novelist states, ". . . in spite of her raging enthusiasm, she was an abject scholar. . . . There was not a thing Uma put her hand to that did not turn to failure" (21). The issue of education has usually remained a battleground for both mothers and daughters to fight. The influence of education generally results in developing questioning attitude in the daughter. But the mother never likes to be questioned by the creature of her own blood. Uma's mother is an insensitive, self-centered mother with myopic view and vision. She tries to convince Uma, "You know you failed your exams again. You're not being moved up. What's the use of going back to school? Stay at home and look after your baby brother" (Desai 22). Uma's mother fails to be a caring and trusted mother to her children. Aparna and Bhaskar Jyoti Goswami observe, "As far as Uma is concerned, she interferes unduly and negatively by stopping her education after two continuous failures and with cruel selfishness, makes her an ayah to her younger brother, convincing her that it will help her in gaining experience of household duties" (199).

Uma seems to be a mere shadow of her parents, not an individual self. "Reduced thus to a baby-sitter at her earlier days and an unpaid servant for her self-centred parents for the rest of her life, Uma finds no escape from her entrapment" (Ravichandran 83). However school is a kind of escape for Uma from her mother's dominance and where she can feel more safe, secure and a mistress of her own. Even weekends are difficult for her to pass at home. The novelist remarks:

There were the wretched weekends when she was plucked back into the trivialities of her home, which seemed a denial, a negation of life as it ought to be, somber and splendid, and then the endless summer vacation when the heat reduced even that pointless existence to further vacuity. (Desai 21)

Once Uma takes to the path of rebellion and escapes in the afternoon from the house to school to meet Mother Agnes, so that she can be admitted again in the school. But this attempt of Uma too results in failure. Uma's mother becomes infuriated at such an independent step of her daughter. She retorts, "See what these nuns do . . . What ideas they fill in the girls' heads! I always said don't send them to a convent school. Keep them at home, I said- but who listened? And now- !" (Desai 29). Such a reaction of her mother renders Uma submissive and docile. However, the plight of Uma raises a significant question in the reader's mind, that is, in patriarchy the same miserable fate awaits the daughter, no matter she is rebellious or submissive. Here Uma presents a direct contrast to Virmati and Saru. Both these girls suffer in their life because they rebel against patriarchy represented by their mothers. But Uma also is a victim of her mother's wrath despite being submissive. It suggests that tension in mother and daughter relationship arises not only because of daughter's rebellious nature but also due to mother's dominating attitude. Asha Choubey comments:

Mothers are such strong influences in the lives of their daughters that they have the power to make or mar their daughter's personality. In a patriarchal world, however mothers instead of protecting the interests of their daughters become instrumental in torturing them. (Mothers 111)

Like Virmati, Uma's school education is curtailed and she is further trained in the duties of a housewife. Uma's mother wants her daughter to accept marriage as her career instead of education. She asks:

'What is the use of going back to school if you keep failing, Uma? . . . You will be happier at home. You won't need to do any lessons. You are a big girl now. We are trying to arrange a marriage for you. Not now,' she added, seeing the panic on Uma's face. 'But soon. Till then, you can help me look after Arun. And learn to run the house.'

(Desai 22)

She has to serve her father bananas, oranges, apples and lemonade at the right time and with appropriate gestures on her mother's behalf. She is, thus, made to feel proud at trivialities. Her mother comments, "Girls have to learn these things too, you know . . . she showed Uma how to pour a little oil on her fingertips and then massage it into the baby's limbs" (Desai 28-

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29). Consequently, Uma loses interest in the world around her. This state of Uma reminds us of Laura, the daughter in Tennessee Williams' play *The Glass Menagerie*. Like Uma, Laura leads a fragile existence. So she cannot face the world of harsh reality and finds escape in her collection of glass animals as Uma usually finds escape in her Christmas cards and bangle collection.

Uma's only comfort lies in the company of her Mira-masi and her cousin, Ramu. But both of them are unwelcomed guests in MamaPapa's home and Uma's mother considers them as bad influences on her daughter. Mira-masi is a widow who has a fascination for pilgrimages and keeps on visiting shrines, temples and distant Ashrams throughout the year. "Ever since her widowhood, she had taken up religion as her vocation. Her day was ruled by rituals, from the moment she woke to make her salutations to the sun, through her ritual bath and morning prayers, to the preparation of her widow's single and vegetarian meal of the day, and through the evening ceremonies at the temples she visited" (Desai 39). Uma's relationship with Mira-masi is somewhat spiritual in essence. She listens from her ancient myths of Hinduism and tales of various gods and goddesses. Such knowledge of religion and spirituality proves a kind of moral support for Uma. She receives love and care from her Mira-masi which is always denied by her mother. This helps Uma to develop again a taste for life that has been lost somewhere. The influence of Mira-masi thus affects Uma's psyche deeply. "Then Uma, with her ears and even her fingertips tingling, felt that here was someone who could pierce through the dreary outer world to an inner world, tantalizing in its colour and romance. If only it could replace this, Uma thought hungrily" (Desai 40).

However, Uma's relationship with her cousin, Ramu, is totally different from the one with Mira-masi. To Uma, her Mira-masi represents the world of spirituality and divinity; whereas Ramu represents the material world with an urge for pleasure. Whenever he visits Uma's home, it fills her heart with joy. Once he takes Uma for dinner in some restaurant despite her parent's constant refusal. He makes Uma drink and dance; and she has one of the best times with him. Uma's mother cannot tolerate such an influence on her daughter. "'Quiet you hussy! Not another word from you, you idiot child!' Mama's face glints like a knife in the dark, growing narrower and fiercer as it comes closer. 'You, you disgrace to the family—nothing but disgrace, ever!'" (Desai 53). Such behaviour of Uma's mother lacks sensitivity,

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understanding and even interest in Uma. Simone de Beauvoir rightly comments on women like her:

She systematically takes a dislike to the friends among whom her daughter seeks help against family oppression and who ‘work on her feelings’; she criticizes them, forbids her daughter to see them too often or even to be with them at all, on the pretext that they ‘have had a bad influence’ on her. Any influence that is not hers is bad, but she feels a special animosity towards women of her own age – teachers, mothers of companions – with whom the little girl becomes affectionate; such feelings, she says, are ridiculous or morbid. (535)

Her mother does not approve Uma visiting even their neighbours like Mrs. O’Henry and Mrs. Joshi.

In patriarchy, instead of education, it is marriage which is offered to girls as a career. Since their childhood, girls are conditioned to consider marriage as their ultimate destiny. When nothing works for Uma, she is made to plunge into marriage. “It was as if their mothers had been tending them, in their flowerpots, for just this moment when their cheeks would fill out and their lips take on a glisten and all the giggles and whispers would arrive at that one decision – *marriage*” (Desai 67). Now Papa is so desperate that he himself sends letters to all their relatives asking for marriage proposals for Uma. He writes, “Uma is still young but may be considered of marriageable age and we see no reason to continue her studies beyond class eight” (Desai 75). Although Uma was withdrawn from school before she could reach class eight. Proposals arrive and Uma is shown the snaps of eligible bachelors as a sign of family’s progressive outlook. Three desperate attempts are made to get Uma married but unfortunately all of them end in fiasco. The first suitor likes Aruna rather than the elder daughter of the family. Second suitor’s family refuses to perform marriage after acquiring a pre-marital dowry from Uma’s family. In a conversation with Uma’s mother, Mrs. Joshi, their neighbour, comments:

‘Yes, that is why the Goyals are able to do such things, because of parents being in too much of a hurry. If parents will not take the time to make proper enquiries, what

terrible fates their daughters may have! Be grateful that Uma was not married into a family that could have burnt her to death in order to procure another dowry!’ (Desai 84)

Even after such warnings, no serious inquiries are made about the third suitor and a hasty marriage is offered. “Since it was clear Uma was not going to receive any other offer no matter what a good job the photographer had done with his unpromising material, Mama and Papa decided to proceed with the negotiations” (Desai 89). It seems as if Uma is a burden for her parents to be released as soon as possible. And finally when Uma gets married, her husband is found to be already married, having a wife and four children. She is brought back to her parental home where nobody is concerned about her humiliation and her ruin. Her parents merely curse the moment of marriage and moan over the dowry and the wedding expenses. After that Uma remains an outcast from the world of marriage, the world that matters above all in patriarchy. “Having cost her parents two dowries, without a marriage to show in return, Uma was considered ill-fated by all and no more attempts were made to marry her off” (Desai 98).

Uma’s mother thinks that it was her daughter’s bad looks and uneducated status that never enabled her to find a suitable husband. Uma recollects, “How Mama had always envied Lila Aunty for having a daughter like Anamika, a model of perfection like Anamika. No, that was not for her, she sighed” (Desai 77). Uma’s feelings about Anamika have a very strong influence on her relationship with her mother. Uma sometimes try to justify her mother’s rudeness towards herself by observing the beauty and intelligence of Anamika that she herself unfortunately lacks. Uma thinks that Anamika deserves Lila aunty’s love and care because she is a very intelligent and laborious student. But this is not true in a patriarchal society where every girl, educated or uneducated, is expected to be a good housewife and an obedient domestic servant. Uma’s cousin Anamika presents a sharp contrast to Uma in that she is more pretty and educated than her. “She was simply lovely as a flower is lovely, soft, petal-skinned, bumblebee-eyed, pink-lipped, always on the verge of bubbling dove-like laughter, loving smiles, and with a good nature like a radiance about her. Wherever she was, there was peace, contentment, well-being” (Desai 68). She wins a scholarship to Oxford. “To Oxford, where only the most favoured and privileged sons could ever hope to go! Naturally her parents would not countenance her actually going abroad to study – just when she was of

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an age to marry . . .” (Desai 69). They look upon the letter of acceptance as a trump card which is used to search a husband for her. Anamika never objects or questions her parents’ decision. She is married to a man much older than her and who is more conscious of his superiority. “Anamika had been beaten, Anamika was beaten regularly by her mother-in-law while her husband stood by and approved – or, at least, did not object” (Desai 71). She has a miscarriage as a result of regular thrashing. And then one day news comes that Anamika has committed suicide.

However, Mama’s relationship with her younger daughter, Aruna, is quite different from her relationship with Uma. Like Uma, a victim of her parents’ gender-based attitude Aruna adopts the idea of ‘femininity’ whole heartedly as a survival device. She considers her mother a model for herself and tends to follow on her footprints. Nancy Chodorow points out, “A girl tends to retain elements of her preoedipal primary love and primary identification. This has been compounded through the years by reinforcement from a more conscious gender-role identification with her mother” (136). Feeling neglected in the male dominated society, Aruna escapes into the feminine universe. She learns very early the coquettish behavior of her mother. “There was already something about the way she tossed her head when she saw a man looking at her, with a sidelong look of both scorn and laughter, and the way her foot tapped and her legs changed position, that might have alerted the family to what it could expect” (Desai 80-81). Aruna adopts quickly all the feminine traits required to become a good housewife. This is just a way for Aruna to assert her individuality. She is not submissive like her sister, Uma. Instead, Aruna has a rebellious nature and she can question her mother. “By the time Aruna was fourteen she was rebelling against the blue cotton tunic and the white hair ribbons” (Desai 81). There are a few advantages that Aruna can enjoy. First she is more pretty and cute than Uma; and second, she does not have to look after Arun. That responsibility is left only for Uma to bear. “When Uma was still watching to see that Arun did not crawl off the varanda and break his neck or put knitting needles or naphthalene balls in his mouth, Aruna was already climbing into bicycle rickshaws and going off to the cinema – with girl friends from school, she said” (81). Despite her mother’s careless attitude towards her children, Aruna becomes a full grown woman with all the attributes that a girl must possess to survive in patriarchy. She has, in a way, carved out a space for herself by her feminine qualities in the complex family web. “Here was Aruna visibly ripening on the

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branch, asking to be plucked: no one had to teach her how to make samosas or help her to dress for an occasion. Instinctively, she knew” (Desai 87).

Since childhood, Aruna presents a contrast to Uma both in matters of looks and education. Though conditioned by the same mother, Uma and Aruna have formed different personalities. One becomes the victim of that conditioning and can never prosper; and other takes that conditioning as a challenge and carves out a space for herself. Alladi Uma points out, “Even while a daughter may seem to be neglected by the mother, even while she questions the relationship, she cannot totally negate her mother or her influence” (74). If Uma has learnt her mother’s docility and submission, Aruna has opted freedom and zest for life from her mother. Aruna uses her attractiveness as a survival device. While Mama searches energetically for a husband for Uma, families are already making enquiries about Aruna. Moreover, when after marriage Aruna comes back to her mother’s home with her children, she exactly imitates her mother’s behavior. Most of the time Aruna remains out of the home busy in visiting her old friends and their families as her mother remained in kitty parties and card game. She is as careless and indifferent as her mother in regard to her children. However, Uma’s relationship with her sister, Aruna, does no good but intensifies the tensions between Uma and her mother. Uma usually notices her mother favouring Aruna’s smartness over her own submissiveness. This further makes their relationship problematic.

Now the question arises why these three daughters – Uma, Aruna and Anamika – have different fates despite being conditioned in the same patriarchal norms and values by their mothers. It is because these daughters respond to their mothers’ conditioning differently and consequently develop diverse attitudes and individualities. Uma adopts submissiveness at an early stage to derive some solace from the hazard of her neglected existence. The path of submission and docility appears to her as the only valid way out from the nudging and tirades of her mother. For Aruna her mother’s strictness is a kind of challenge which she accepts and counters in her own way. She develops a predilection for her femininity and makes the family notice her adroitness in by far adopting feminine traits. As far as Anamika is concerned, her distinctiveness lies in her intelligence and astuteness. She takes to education for creating a separate space for herself in her parents’ patriarchal home. She performs well in studies and earns a scholarship to Oxford. Thus, these girls have espoused three different modes of

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survival as a result of their distinct individualities. Apart from this fact, it is the role of the parents that has contributed in creating distinction in the life of the daughters. Uma is offered a typical arranged marriage by her parents in which she does not have any say. The parents solely take it as their right to decide for her and ultimately, Uma has to pay severely for her submissiveness. Although in Anamika's case it is different. Her education is used as a trap by her parents to ensnare their daughter in a mismatched marriage. It is Anamika's subservient nature and conformity to her image of the ideal daughter that renders her meek even in her marital home. Consequently, she suffers silently and meets her terrible end. However, Aruna is offered an arranged cum love marriage. "As was to be expected, she took her time, showed a reluctance to decide, played choosy, but soon enough made the wisest, most expedient choice – the handsomest, the richest, the most exciting of the suitors who presented themselves" (Desai 102). Aruna is given the chance to decide for herself by the parents and this results in a successful marriage. Thus, parents' unnecessary intervention in the daughter's life is not a healthy affair in that a single wrong decision of the parents can convert the daughter's life into a hell. Parental role in a girl's life is the crucial deciding factor of what kind of life she would lead.

Alva Mrydal and Viola Klein point out:

Although deficient understanding of the children's need at each age level may itself cause emotional and social and perhaps also intellectual underdevelopment, and although a feeling of 'rejection' occurs now and then for reasons which have to do with a mother's personality . . . the risk exists that ambitious mothers may more often cause their children to feel willfully neglected. (130)

The same happens with Uma who, a victim of her mother's indifference, can never develop a social self for herself. No understanding ever exists between Uma and her mother. Even the presence of her mother makes her feel a culprit. For her own comfort, Mama burdens Uma with the responsibility of Arun's upbringing. Uma never receives any encouragement from her mother to study and make a career for herself. Even she is made to quit her school by her mother. Education is required not merely to be eligible for job or career, but it also contributes to the mental development of the individual. As a consequence, Uma lacks independence and confidence even after being a grown up. Meenakshi Raman and Sushila

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Rathore observe, “Their apathetic and rude behavior has never allowed her to become a mature person. They are responsible in making her a diffident child having no inclination towards creating a separate existence of her own and whenever she has tried to do it they have tried their best to evade it” (137). When a job is offered by Dr Dutt to Uma, the very idea of it enrages the parents. It is her mother who raises an objection on behalf of Uma’s father. “Our daughter does not need to go out to work, Dr Dutt,” she said, “As long as we are here to provide for her, she will never need to go to work” (Desai 146).

Her mother never allows Uma to be independent. She is turned into a mere loyal servant to her whom she does not want to lose. When the offer of job is declined, Mama asks Uma, “And so my madcap wanted to run away and leave her Mama? What will my madcap do next?” (Desai 148). If a comparison is sought between Uma and Virmati, the protagonist of *Difficult Daughters*, one finds out that Virmati suffers from loneliness and seclusion after leaving her family and home, but Uma suffers even within her family. Even a few moments of private life are not allowed to her. She can neither visit her neighbours nor can sit alone in the home. “The biased and rigid attitude of parents, papa always scowling and mama scolding leave no room for Uma to fulfill any of her desires and dreams. Even a few moments of peace and tranquility in her room are denied to her” (Rani 177). Every time her parents keep her busy in one domestic task or another. She is not even permitted to make phone calls. Once she secretly makes a call to Dr Dutt but forgets to lock the phone after use and is caught. Her father retorts, “‘Costs money! Costs money!’ he kept shouting long after. ‘Never earned anything in her life, made me spend and spend, on the dowry and her wedding. Oh, yes, spend till I’m ruined, till I am a pauper – ’” (Desai 149). This shows the hypocrisy of parents. On the one hand, they do not allow Uma to do a job outside home, and on the other curse her for not earning anything. Her mother never supports Uma to look for a career even after splitting off her marriage. She never pays any heed to the fact what would become of Uma when they would no longer be in this world. Thus, such a behavior of her parents, especially of her mother, leaves Uma a baffled child, devoid of any emotional support. Asha Choubey rightly comments on Uma’s relationship with her mother, “This is one relationship wherein understanding and support are most expected but this is sadly one relationship where these ideas are lacking” (Mothers 113).

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This indifference at the hands of her parents makes Uma feel insignificant and she starts losing confidence. “Parental strictness is often experienced as rejection by children. From these deprivations result many neurotic personalities, insecure, restless, dissatisfied people, both young and old” (Mrydal and Klein 130). Uma’s humiliation and disgust with herself has affected her inner world to such an extent that she begins to have fainting fits. She does not have anybody to unburden her heart to. Such a pathetically isolated self, Uma has no source from where she can gain love and attention. In this context, Meenakshi Raman and Sushila Rathore point out, “All her quests and her frustrations are restricted to her thoughts without any outlet” (136). Thus these accumulated frustrations find an outlet through fits. The reader is left with a lump in his throat after viewing Uma’s condition. What type of parents these are who are so unkind even to their own daughter?

The second part of the novel deals with Mrs. Patton’s family and her relationship with her daughter, Melanie. The connecting link between these two families is Arun, brother of Uma, who is sent to study further in America. “The two grave psychological risks which young children normally run are those of ‘rejection’ and ‘over-protection’” (Mrydal and Klein 130). This observation seems quite appropriate in this context. If Uma in India and Melanie in America are victims of their mother’s rejection, Arun is the victim of his parents’ over-protective attitude. Melanie has lost appetite to eat anything else than nuts and candy:

She sits in the gloom of the unlit staircase, munching the nuts with a mulish obstinacy, regarding him with eyes that are slits of pink-rimmed green. Has she been crying? She looks sullen rather than tearful. It is her habitual expression. Arun reflects that he has not once seen it change. (Desai 168)

But her mother never bothers about her daughter’s losing appetite. A caged bird in her husband’s home, Mrs. Patton herself does not have any choice to eat. She has to eat, along with other family members, the meat that Mr. Patton cooks himself for dinner. No matter whether its India or America, in the patriarchal society a woman does not have any say even in matters of eating. Once Mrs. Patton confides in Arun, “I’ve always wanted to be one myself. I’ve always hated eating meat – oh, that red, raw stuff, the *smell* of it! I’ve always, always disliked it – but never could – never knew how – you know, my family wouldn’t have liked it. But I’ve always liked vegetables best” (Desai 183). Later in the company of Arun,

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Mrs. Patton has become obsessed with shopping. She is not least concerned about her daughter's health and never cares what Melanie eats and why. Arun does not see in her a real mother but just a plastic copy of the original. He states, "She smiles a bright plastic copy of a mother-smile that Arun remembers from another world and another time, the smile that is tight at the corners with pressure, the pressure to perform a role, to make him eat, make him grow, make him worth all the trouble and effort and expense" (Desai 198). Much like Uma's mother, Mrs. Patton has a very detached outlook towards her children. She is concerned only to fill the freezer with food items. "She is not involved in the lives of her own children. She is not aware of the fact that her teenage daughter, Melanie is practically starving and has developed a habit of vomiting after consuming her favourite peanuts and candies" (A. Goswami and B. J. Goswami 202-03). She is never shown to be talking with her daughter personally and in an intimate relationship. Melanie is left all by herself to manage. Once Melanie reveals her frustrations to her mother, "I hate scrambled eggs! Why don't you ask me what I want? Why can't you make me what I *want*? What do you think we all are – garbage bags you keep stuffing and stuffing?" (Desai 209-10).

Aparna and Bhaskar Jyoti Goswami observe, "Anita Desai, for the first time, brings it to the notice of readers that there are many more dimensions to a woman's personality than just being someone's mother, or for that matter, someone's wife, or mistress" (199). Mrs. Patton represents a modern version of motherhood and enjoys sunbathing without caring for anything else. Neglected by her mother, Melanie becomes a patient of depression. She eats only candies and keeps on vomiting all day. Desai aptly describes:

Then Arun does see a resemblance to something he knows: a resemblance to the contorted face of an enraged sister who, failing to express her outrage against neglect, against misunderstanding, against inattention to her unique and singular being and its hungers, merely spits and froths in ineffectual protest. How strange to encounter it here, Arun thinks, where so much is given, where there is both licence and plenty. (217)

Thus daughters neglected by their mothers often become hysterical. Like Uma, Melanie does not have any outlet to relieve her frustrations. Such isolated daughters have nothing in store but only bulimia, anorexia, depression, withdrawal, compulsive behavior and hysteria.

Anita Desai, through her present novel, tends to show that excessive concerns of mothers in case of Arun and complete disinterestedness in case of Uma and Melanie leave the children completely shattered. *Fasting, Feasting* is both a plea and warning to those mothers who venture into their own individual worlds by rejecting their children's right to be loved and cared. Such negation of motherhood would render the future generations crippled.

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Chapter – 5

Conclusion

A close study of Shashi Deshpande's *The Dark Holds No Terrors*, Manju Kapur's *Difficult Daughters* and Anita Desai's *Fasting, Feasting* reveals a deep insight into the plight of the woman in relation to her two major roles – mother and daughter. Interpreting daughter's place in her mother's life and mother's indelible influence on the daughter's psyche, the study has been carried out with due consideration to the fact that a need for renovation in mother-daughter ties may be underlined. The presentation of mothers and daughters in the selected novels of these renowned novelists is remarkably arresting and insightful. They have approached this relationship in a very sensitive and realistic manner. Experienced as both mothers and daughters, these writers have portrayed the engaging conflicts existing between mothers and daughters with their first-hand experience. But nowhere the subjectivity in their works has marred their visionary outlook and sensitive attitude towards both mothers and daughters. What comes out after studying intensively their novels in question is that the relationship of mother with her daughter, seemingly simple and loving, reverberates with many diversified conflicts, rising primarily from mother's domination and daughter's response to it.

Hitherto, this relationship has been considered as humming with love and care. The word 'mother' connotes love, affection, selfless devotion and all that is noble in human nature. The role of the mother has been eulogized even in ancient epics and scriptures. Mother is considered a source and fountain-head of incessant love. Motherly love has been represented in both religious and social documents in the limelight, as uncompromising and consistent. Through such representation of woman as mother, a very strong stereotype is born called motherhood. The ideology of motherhood is to show mothering as innate or natural to women by its ceaselessly glorified representations. The responsibility of mothering and its tenderness are considered as the principal defining attributes of a woman. Such types of stereotypical representations are strengthened by their recurrence in literature and carried out from generation to generation. But with the emergence of intellectual and philosophical revolutions, especially in the second half of the twentieth century, representation of

motherhood has also radically changed. Recent observations of feminist writers have questioned and challenged the socially constructed phenomenon called motherhood.

The myth of motherhood has been intensively explored and systematically dealt with by Shashi Deshpande, Manju Kapur and Anita Desai in their novels under study. These writers have approached the phenomenon of motherhood in a very objective and scientific way. They tend to show the ground reality lying behind the idea of motherhood by both demythifying and demystifying it. Deshpande in *The Dark Holds No Terrors* has presented Saru's mother as a sheer opposite of the image of a traditional mother. She is not an embodiment of devotion and sacrifice; instead, she tortures her daughter with a biased attitude. Saru, right from her childhood days, is treated as inferior to her kid brother, Dhruva. Her mother showers all her love and affection on her son, leaving her daughter starving even for a little share of attention. Similarly, in Kapur's novel, *Difficult Daughters*, Virmati's mother has been presented as an uncaring and insensible mother who never gives Virmati her share of motherly love. A child herself, Virmati is burdened by her mother with the responsibility of nurturing her younger siblings. Anita Desai too has portrayed Uma's mother in *Fasting, Feasting* with the same kind of negative colours. The mother remains busy in her own world with her husband, negating her duty to her children. Later on, even the liability of Arun's upbringing is left on the part of Uma herself. In the second part, Mrs. Patton too is no more concerned about her daughter, Melanie's life. Here the mother privileges her womanhood over her motherhood. Thus by representing such types of mother figures, these writers tend to show that there are various facets of a woman in her role of a mother.

In fact, it is the institution of patriarchy that has used mothers to perpetuate its traditions and values in the social realm. Thus, the unequal social relations between men and women are the products of patriarchal system. Such disparity caused by patriarchy gives rise to the concept of gender-discrimination. Girls are made to perceive themselves inferior to the boys since their childhood. This task of socializing daughters in the values of patriarchal social system is accorded to mothers. Such a strong influence of patriarchy on mother-daughter ties has been delineated by these writers with a cause and effect relationship. Woman is made to feel privileged in the patriarchal society only in her role of a mother. Thus she cherishes a sense of authority in the mother's role. The children become her asset and she exercises full

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control over them. Saru's mother takes it her inborn right to decide for her daughter. But when Saru ignores her mother's suggestions about her career and takes to medicine, this creates a divide in their relationship. Kasturi, Virmati's mother, too wants her daughter to get married according to her mother's wish. But Virmati's aspiration to be educated prevents her to follow her mother's dictates. This becomes the central conflict in their relation. Uma is also a victim of her mother's domination. Her mother always keeps her busy in one household job after another. She is made to quit her schooling and is offered a traditional arranged marriage by her mother. Thus it is the mother's domination and a sense of authority that renders mother-daughter relation strained. This can be termed as the first conflicting stage of mother-daughter bonds.

Another significant factor which causes conflict in the relationship of mother and daughter is the sociological and psychological repression of women in the patriarchal society. Women in general are conditioned by their own mothers in the patriarchal values. In this process of conditioning, they have to repress their basic nature and adopt a fake social identity for survival. The idea of motherhood is one such identity that is not innate but given to women by patriarchal ideological structure. Saru's mother herself is a repressed figure who experiences the feeling of unwantedness and rejection in her own childhood. Hence she has internalized these feelings of rejection and negligence as part of a girl's life. Later on, she attempts to repress her daughter's basic nature and tries to shape Saru exactly after herself. In the same fashion, Kasturi curtails Virmati's aspiration to study further and wants her daughter to be just like her. Uma's mother loves the daughter of her dreams – a beautiful, intelligent and traditional daughter – instead of an average looking, docile and submissive Uma. Therefore, she wants Uma to excel in household chores, without paying any heed to her daughter's education. Such indifferent attitude of her mother forces Uma to repress her urge to study and she remains a failure at each front of life. In the second part of the novel, Mrs. Patton conceives her daughter, Melanie, as a free and independent individual like herself; and therefore, never concerns herself with Melanie's eating habits. Therefore, such intense identification of the mother with her daughter results from the fact that they both have to undergo the same repressive experiences in the patriarchal society. Thus it is the mother who in the process of socialization, tries to shape the daughter after herself. This is the second conflicting stage in mother-daughter relationships.

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The belief of the Marxists that “Life is not determined by consciousness, but consciousness by life” (Chandra and Samy 119) seems very true in the present context. Each individual has a distinct attitude and inclination towards life that is primarily based on the kind of circumstances in which one lives. Therefore, circumstances constitute the self of the individual. This postulation is very significant in the understanding of mother-daughter conflicts. Initially belonging to the same gender, both mothers and daughters find their relation complementary and compensatory to each other. The daughter sees herself in her mother and thus identifies with her intensely. But when she enters in her adolescence and conceives a separate self of herself, the daughter feels suffocated in her relation with the mother and attempts to break free from her domination. Saru sees in her medical degree an escape from her mother’s domination. She begins to hate everything that belongs to her mother, in one way or the other. However, Virmati tends to find love in the company of the professor, Harish, and renounces her mother’s authority completely by becoming his second wife. In Uma’s case, she turns inward to reject the mother’s commands. She usually finds escape in her Christmas cards and bangle collection and in reading poetry. The daughter experiences powerlessness and may adopt several survival strategies to get rid of her mother’s authority. Most of the time, it is marriage that is offered to girls by their mothers as an escape route. As a result, the daughter either submits to the mother’s choice or rebels against it, searching her own individual identity. In such case, education seems to her the only refuge to assure some sort of independence. This is quite true in Saru’s case. For her, education is the only means to carve out a space for herself in her mother’s dejected home. Similarly, Virmati too finds solace in education to save herself from the ill fate of her mother, but unfortunately she meets the same. However, Uma submits to her mother’s choice and meekly accepts marriage as a redeeming therapy that can save her from her mother’s control. But all the three attempts to get her married end in fiasco and she cannot develop a separate self of herself. On the other hand, Melanie takes to candies and peanuts as a kind of reaction to her mother’s insensitive and uncaring attitude. However, such kind of an attempt of the daughter towards independence usually hurts the ego of the mother and she feels deserted. This is the third conflicting stage in mother-daughter relationships.

All these engaging conflicts in mother-daughter relationships have been realistically portrayed by the present eminent novelists. Nowhere have they attempted to idealize or

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eulogize the mother figure. Their representation of both mothers and daughters is objectively developed and convincingly depicted. But there lies a considerable complexity between seemingly simple surface narratives of mother-daughter relationship. These novelists have vividly unravelled them one by one with great dexterity. A stage comes in mother-daughter bonds where the daughter begins to detest her mother. She blames the mother for every single thing that has caused pain to her. But a very significant moment comes when the daughter herself attains motherhood. This phase of her life makes her experience the same kind of doubts, uncertainties and insecurities which were once felt for her by her own mother. Saru, when she sees in her own daughter, Renu, a resemblance to her own mother, wonders, “Will Renu turn mocking eyes on me one day? Will Abhi defy me? Will they betray me as I betrayed her?” (Deshpande 139). She attempts to identify herself with her mother not in the role of mother but as being a woman. In her attempt to divorce herself completely from her mother, and to be a sheer opposite of her mother, Saru ultimately and ironically ends up becoming a parable of Indian womanhood. Same is the case with Virmati’s daughter, Ida. After knowing her mother’s past, she comes to know that her mother too was a difficult daughter like her. This realization helps her to accept her mother’s situation and character and she declares: “This book weaves a connection between my mother and me, each word a brick in a mansion I made with my head and my heart. Now live in it, Mama, and leave me be. Do not haunt me anymore” (Kapur 280). However, no such realization is arrived at by the daughters in Desai’s novel. She tends to show the dangers of negligence, deprivation and indifference that have shrouded the mother-daughter relationships in the present time. Deprived of their mothers’ care and concerns, both Uma and Melanie become patients of depression. If Uma’s unarticulated frustrations find expression through fainting fits then Melanie vomits them out. In this way, all the significant ups and downs of mother-daughter relationships have been adequately presented by Deshpande, Kapur and Desai.

Though these novelists have dealt with the same theme, mother-daughter relationships, but they differ considerably in their vision. As far as Shashi Deshpande is concerned, she has presented what trials and tribulations a daughter has to face if she does not have a compatible relation with her mother. Saru remains emotionally and psychologically disturbed both in her adolescence and married life. Life almost becomes intolerable for her when her husband turns out to be a sadist. But after acknowledging her mother’s situation during her sojourn at her

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parental home, she feels confident now to face life anew. Thus for Deshpande, acceptance and understanding must reign supreme in mother-daughter relation. She also tends to view mother-daughter ties from a humanitarian standpoint, believing that one should rely on one's own self; there is no refuge from the burden of being alive. However, Manju Kapur views mother-daughter bond from that vantage point where the experiences of the mother meet with the experiences of the daughter and lead to a common understanding. Ida, daughter of Virmati, in her journey to her mother's past, measures her own state with the situation of her mother. She comes to know why Virmati, herself a difficult daughter, turns out to be a stern and strict mother, because in patriarchy, a mother has to become strict for the safety of her daughter. Ida wistfully remembers how her mother has tried to teach her the lesson to "Adjust, compromise, adapt" (Kapur 256). The daughter confronts the fact that it is not as simple to be a mother in the patriarchal society. Thus Kapur views this relationship in the broader context of woman's situation in the patriarchal society. Anita Desai's approach, however, to this relationship is somewhat more radical in comparison to Deshpande and Kapur. She views it in the modern context where the woman who is more conscious of her own individuality, has split herself from the duties of a mother. Now she does not perceive herself in her daughter; but instead, believes in cherishing her own individual freedom. By representing the miserable lot of Uma and Melanie, Desai pleads for the need of renovation in mother-daughter ties.

However, these writers in their present novels have not furnished any concrete solution. They merely tend to raise questions about the present tension-ridden state of mother-daughter relations. They ask the reader to meditate over this issue in the light of their observations. The task of finding any possible solution is completely left to the reader. What appears the fundamental problem here is the lack of communication. The mother should give her daughter ample opportunity to present her viewpoint instead of imposing her own decisions. The daughter too should provide an ear to her mother's observations and try to learn from the mother's experiences. Mutual trust should reign supreme in this complementary relation, leaving no space for doubt and misunderstanding. The daughter's individuality must be taken into consideration so that she can prove herself as equal to her male counterparts.

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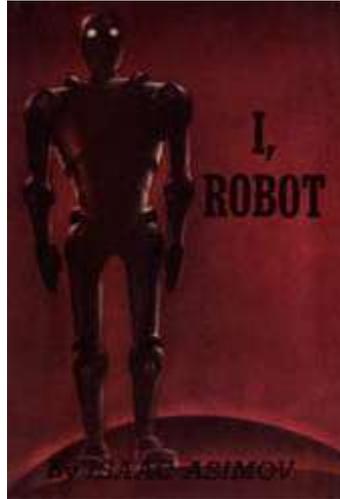
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Robotics in Issac Asimov's Short Story Collection *I, Robot*

V. Kani Selvi, M.A., M.Phil.



Science Fiction

Literature enables man to escape out of the make-believe existence of everyday life and to forget for a while the grim realities of life. It prepares man to face the odds of life cheerfully and with courage. With the rapid development of science and technology, science fiction has become popular in the modern ages. It deals with the conflicts that arise out of the impact of scientific discoveries on the

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future life of humanity. It can inoculate against ignorance, premature advancement of research, and the depersonalizing threat of technological change.

Thus, Science Fiction is the literature that celebrates not merely Science and Technology but also technology driven social change as a permanent revolution as the final and most inexorable foe of all fixed power relationships everywhere. The most powerful Science Fiction manages to move beyond prophecies of future technological change. Speculative technology, time travel, alien races, intelligent robots, gene-engineering, space travel, experimental medicine, psionic abilities, dimensional portals or scientific principles contribute to the plot or background.

Isaac Asimov



Issac Asimov, a Russian born American, is an eminent writer. He is considered as the father of modern Science Fiction. He is a 'Hardcore' writer in the sense that basically and professionally he is a scientist and in the treatment of materials he is deeply committed to the values of the disciplines of Science.

Asimov's writing career spanned more than forty five years. He has produced more than five hundred published books of nearly every type of fiction

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and non-fiction. He believed that his most enduring contributions would be his ‘Three Laws of Robotics’ and the Foundation series. Furthermore, the Oxford English Dictionary credits his Science Fiction for introducing the words *Positronic*, *Psychohistory* and *Robotics* into the English language. Asimov of sixties and seventies could be regarded as the Touch Stone of Science Fiction.

Asimov is certainly the leader of Science Fiction. Under his vision, Science Fiction was saved from being degenerated into a spy-sex story in hyperspace. As a free thinker, Asimov treats Science Fiction as a pool where ideas are expressed with unrestricted intellectual freedom. In the hands of Asimov, Science Fiction has acquired a very significant form in the extrapolation of human reality. In its use of narrative resources and elements, he is unique in employing techniques, idiosyncratic to the genre. He has created merry, positive and highly readable books and stories.

Two Facets of Science Fiction

Science Fiction has two facets one pointing to the world of fantasy and other to reality. The glory of man is that he is not bounded by reality. Man travels in fantastic world. Asimov’s Science Fiction portrays those fantastic worlds where man finds it difficult to be human and longs for regenerations and enlightenment.

I, Robot

Asimov embraced technological innovation and dominated the field of robotics in literature. In *I, Robot* the nature and principles of robots are examined in detail probably for the first time. The role of technology, robotics and the human theme of making the right decisions are key themes in Issac Asimov’s *I, Robot*. It presents these nine stories as a series of vignettes related by Dr. Susan Calvin, an elderly “Robopsychologist” who is being interviewed in conjunction with her impending retirement from the mega-corporation US Robot and Mechanical Men, Inc.

Characters in *I, Robot*

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I, Robot talks about how the world is when robots are invented. In the beginning, there is a little girl with a robot she loves. Her parents take the robot away from her, and she misses him. Later the robot saves her life, so her parents let her have the robot again. The next part of the book talks about the scientists and robots at U. S. Robots. The robots are constantly malfunctioning, and the scientists have to figure out the robots' problems.

The next part of the book talks about an election and how people think a candidate is a robot, and how he proves he isn't. The book ends with a scientist talking with the "World Coordinator", and how they figure out that robots are basically controlling how the human race is going to turn out. Thus, it is a robot anthology that shows us the relation between human beings and robots from the time when computers basically took over the control of economy, progress and future of mankind. The vision of robots in reality is far different from the vision of robots in Science Fiction.

Asimov's robot "Robbie" is a nursemaid to a young girl. "Speedy" is a miner sent to an outer space excavation. "Cutie" is a robot with a day job at a space station, but becomes fascinated with philosophical and religious issues, evolving into a skeptical thinker with a Cartesian orientation. "Dave" is an adult, "Head of Family" robot collapses under stress, analogous to a psychotic. "Herbie" is a telepath who is capable of turning the tables on them, and severely perturbing the life of human beings. Stephen Byerley is a robot undistinguishable from man, who becomes City Mayor in a career that will lead him to become President of the Federated Regions of Earth.

Career Choices for Robots – Three Laws of Robotics

As these examples make clear, robots had a wide range of career choices open to them in the Asimovian scheme of things. But one doesn't read Science Fiction in hopes of finding future science - no matter what you may have been told. If Asimov's predictions of technological evolution have gaping holes, his mind is analytic and rigorous in the highest degree as he constructs his plots. Three Laws of Robotics are part of the background color of *I, Robot*, but actually they play a central role in the nine stories.

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When a robot is malfunctioning, or some robotic matter needs to be investigated or remediate, the Three Laws come into play. They often push the story forward or resolve the main complications in the plot. The Three Laws are stretched to the breaking point, leaving one or more human protagonists to solve the resulting mystery. The most unique feature of his robots are the Three Laws of Robotics hardwired in the robots' positronic brains, which all robots must obey, and which ensure that robots don't turn against their creators.

Reconfiguration of Reality

The greatness of Asimov's books does not derive from their chemistry or physics or genetic engineering, but in the writer's visionary reconfiguration of our conceptions of the real. Reality and fantasy are intertwined. The world of fantasy is relived in the world of reality as it once before may be restoring the earth to its original state. Robots were a part of our fantasy world long before we had the technology to actually produce them.

Each story is easily digestible as it provides a variety of plots and characters. It explores different aspects of the philosophical ramifications of the rise of intelligent robots. The stories in *I, Robot* are connected thematically and chronologically by detailing the development of robots:

from the beginning, when the poor robots couldn't speak, to the end, when they stand between mankind and destruction.

(“The Evitable Conflict” 224)

It gives the clear sequence of the nine ages of robots which leads from the doll of the first to the god of the last story.

Contrary to Reality, But Making the Characters Real

The settings for Science Fiction are often contrary to known reality. The setting is in the future, so it is interesting for readers to see what the future is like. Asimov made the story so that readers feel the things going on in the book can happen anytime now,

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because of the modern setting. The stories take place during the period from 1998 to 2052. The plot is set in a robotic factory, the fictional corporation U. S. Robots and Mechanical Men, Inc.

The cast of characters in *I, Robot* is remarkable, with lots of protagonists, all of them having their own qualities. In the delineation of characters, Asimov endows them with the qualities to see things clearly and consistently and connectedly in a scientific manner. There are also a variety of robots with different personalities that Asimov created, such as Robbie, a caring robot, and Cutie, a robot who thinks humans are inferior. Asimov did a brilliant job creating the characters and making them extremely realistic.

With the three simple directives, Asimov changed our perception of robots forever when he formulated the laws governing their behavior. He concentrates on the reality of the situation to provide the obstacles. On the whole, *I, Robot* changes our vision of the future and the overall outlook on robots.

Futuristic Changes in Human Life

I, Robot depicts the changes in human life with the incoming of robots. Here are stories of robots gone mad, mind-reading robots, robots with a sense of humor, robot politicians and robots that secretly run the world. All the stories are narrated with Asimov's trademark, (i.e.) dramatic blend of science fact and science fiction. Asimov created a realistic view of possible future, one in which humans and robots are worked together to create a more harmonious environment. Robots could very well become a huge part of lives soon. Though *I, Robot* was written fifty years ago, it accurately foretells the future.

To conclude, *I, Robot* declares Asimov as a spokesman for Science Fiction culture through his craftsmanship of mind-blowing robots and immutable Three Laws of Robotics. He makes the readers visualize the future world filled with robots (reality) through his fantasy world.

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Role Play –

An Integrated Approach to Enhance Language Skills (LSRW) of the ESL Learners – A Collaborative Action Research Report

E. Krishna Chaitanya, M.A., M.Phil., PGCTE & PGDTE.

K. Venkata Ramana, M.A.

Abstract

In India, particularly in the state of Andhra Pradesh, the participation of students in English language classrooms is minimal. There are numerous reasons for this, like low confidence levels, improper exposure and practice of language skills and so on. To add to this situation, majority of the English language classrooms in India is teacher-centered and it affects the students' participation and thus their role and spirit are undermined. Under these circumstances, Collaborative Action Research (CAR) methodology is employed by the researchers with the objective to overcome the existing problems using role play as a tool. Role

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Role Play – An Integrated Approach to Enhance Language Skills (LSRW) of the ESL learners –
A Collaborative Action Research Report

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play is used effectively as a tool as it supports students' participation and enriches their social skills. CAR promotes collaborative discussions, self-reflective thinking and systematic phases of problem-solving. This paper makes an attempt to enhance students' participation and their ability to use English language in a variety of academic and professional situations besides integrating LSRW skills.

Key words: Collaborative Action Research, Role Play, Students' Participation, English Language Classroom.

Introduction

One of the significant observations made by several research studies on English language teaching and learning in India is lack of students' participation in classroom discussions due to low confidence levels and ineffective exposure to language skills and practice. Several attempts have been made to address such long standing problems in the context of second language teaching and learning. Students' inhibitions such as shy, fear, low confidence levels and language problems have never been addressed appropriately and adequately in schools, colleges and universities. In addition to these, the scenario of English language classrooms is largely teacher centered and consequently the role and spirit of students is undermined. Many training programmes and conferences have been conducted to address and overcome such critical issues of ELT in India. Such programmes have helped improve teaching and learning only in certain groups but the benefits have not reached the school system in general. Moreover, English language as reported by Chaitanya & Bhavani (2012), has been taught like a subject rather than as a means for the expression of one's inner self and thought process. Hence, there is a need to empower practicing teachers with the help of continuous professional developmental Language in India www.languageinindia.com

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programmes such as Collaborative Action Research (CAR) which promotes collaborative discussions, needs analysis, series of systematic problem solving phases and self-reflective thinking. Such things always become a platform for brain-storming sessions through research of various problems and their solutions in the process of effective teaching and learning.

One such attempt which was made by the researchers collaboratively is the use of role play through the methodology of CAR. The aim of this research is to increase student participation in and outside classrooms. It is a small scale research study conducted for three weeks in English language lab sessions. Since the attempt has attained the intended objectives of the research to a great extent, it is decided to share the researchers' experiences with a wider teaching community.

The above mentioned is the introduction where the problem of the research study is presented. The ensuing sections present information on objectives, sample, tools, methodology and procedure of the research. The present research paper, as stated above, is a small scale research study and is aimed at attaining the following objectives.

Objectives

- To encourage students' participation and to reduce their inhibitions
- To integrate listening, speaking, reading and writing skills
- To improve negotiating skills and to give form to their thoughts
- To enhance students' ability to communicate in real time/authentic situations.

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Sample of the Study

The subjects of the research are undergraduate students pursuing Civil Engineering course (I year B.Tech.). 30 students were selected as sample of the research. This is a heterogeneous group of students coming from various socio, economic and cultural backgrounds.

Research Tools

Research tools such as personal observation and informal student interviews were used to elicit the response of the students. These tools are used for data collection and the data gathered was analyzed using qualitative methods.

Methodology and Procedure of the Research

CAR methodology is employed by the researchers with an aim to overcome and find solutions to the existing problems. The study was conducted in 3 sessions of English Language & Communication Skills Lab (ELCS Lab) and each session is of 2 hour and 30 minute duration totaling to 7 hours and 30 minutes spread over a period of three weeks.

Collaborative Action Research (CAR)

Action research is the name given to an increasingly popular movement in educational research. It is a form of self-reflective enquiry which is being used in educational institutions' curriculum development and professional development of teachers. Action Research is a form of `research where teachers play a pivotal role of researchers besides being teachers in their classrooms. It promotes teachers to be constant and meticulous observers of their own classes.

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As a part of this research, they collaborate, discuss and research their own classrooms with an objective of finding out the problems and solutions pertaining to the teaching and learning process (McNiff, Jean 1998).

The idea of conducting and publishing this study has emerged out of personal observations made by the researchers (faculty). Then the members of faculty decided to collaborate and employ action research to find out appropriate solutions to the existing problems. It is a small scale and context specific research study conducted in 3 English language lab sessions. The subjects as mentioned above are I year students and the research process, data collection and analysis was continued for 3 lab sessions.

The present research article begins with the Role play and its significance in enriching student participation. Subsequently, a brief analysis of the role play adopted from the textbook (*Enjoying Every Day English*) compiled by A. Ramakrishna Rao (2008) is presented. It is followed by the actual procedure of the study and its findings. This study intends to empower participation of students in classroom discussions and to enrich their ability to use language effectively in real time situations.

Role Play and its Significance in Enriching Students' Participation

As stated above, Role play is one of the pivotal tools that help, encourage participation and reduce inhibitions. Role play has been successfully used in EFL/ESL classrooms across the world. In accordance with this, Richard Courtney (1974) says that mechanisms such as play acting and thought are interconnected; they help students to test out reality, to minimize personal anxieties and inhibitions, and to master their fields of action. Role play gives a valuable

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opportunity to the students to hone their English language skills (i.e., Listening, Speaking, Reading and Writing) in an integrated way. For instance, the process of role play begins with the instructions of teachers on role play and its relevance in language classrooms. It is followed by the briefing of the role play used for the session and the discussion with the students on assigning roles to them. This discussion provides scope for students to interact with their teachers and peer group which in turn contributes to their listening and speaking skills. This is followed by the teachers' advice to go through the relevant material on the intended role play, besides writing dialogues for the specific roles assigned to them. Such activities as a part of the role play promote their reading and writing skills. Thus, various phases involved in role play promote negotiating skills and communicative competence of the students.

This apart, it helps faculty to demonstrate the delivery of dialogues with requisite modulation of voice in harmony with appropriate body language. According to Brown (2001) as cited in Huang (2008), role-play modestly engages (a) offering a role to one or more members of a group and (b) giving a goal or purpose that participants must attain. Role play is a learner-centered activity as it develops students' enthusiasm to learn the subject matter and to discuss the contents therein. According to Poorman (2002), integrating experimental learning activities in the classroom increases interest in the subject matter and understanding of course content.

Brief Analysis of “The Connoisseur”

“The Connoisseur” a short narrative written by Nergis Dalal is autobiographical in nature. It reflects some of the typical situations in her life. The outline of the story from the blog

English opera is as follows:

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The author happened to meet Miss Krishna at an art exhibition. Miss Krishna was about sixty-five, a spry, thin spinster. She spent all her life looking after her ailing mother. She had a younger sister who got married and left home many years ago. The early life of Miss Krishna was one continuous struggle with poverty and lack of affection from her mother. She had been starved for the beautiful things.

Once the author invited Miss Krishna to stay with her while Miss Krishna's house was being painted. Miss Krishna entered with an array of black tin trunks which had caused the writer's curiosity to rise. The author found Miss. Krishna with n a large battered leather purse, the handles looped over her wrist securely. Miss Krishna showed her acquisitions to the author, and those were exquisite items, beautiful, polished and jeweled.

One morning the author received news that Miss Krishna had had a heart attack and was dead. Her sister had been informed to attend the funeral. Miss Krishna had left everything to the author by 'will' and to her sister as the next beneficiary. But the author did not agree to take the collection of Miss Krishna. She had taken only her own little clock which she lost three months ago.

From this lesson, one is generally expected to learn etiquette, social life and good language skills. In view of this, few discussions were held among faculty whether the lesson should be taught in a conventional way (i.e. just as a lesson) or in a student centric method (i.e., role play).

During several collaborative discussions held among faculty researchers, it was decided that the lesson should be taught in a practical way using role play. In order to deliver the contents

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of the lesson so as to reach all the students in the class, it was decided to deviate from the conventional method. The contents presented in the lesson encouraged the researchers to select role play as a tool. The reasons are obvious since the method is likely to encourage students to reflect and enact real-time situations and to learn various aspects of life and behavioural traits. Such attempts on the part of students encourage their participation and expose them to social life and etiquette.

The information presented above, deals with the significance of role play in enriching student participation and a brief analysis of the role play adopted for the study. The ensuing section details actual procedure of the research.

This small scale research was begun with an aim to increase participation of students and to enhance their communicative competence. The first lab session was started with discussion among faculty and students on the importance of role play and how it promotes student autonomy in language learning. The discussion went on fruitfully and majority of the students have expressed their willingness to be part of the proposed role play using the lesson ‘The Connoisseur’. This process was begun with identifying some significant scenes of the lesson.

Students are divided into six teams consisting of 5 members in a team. The heterogeneous teams are meticulously formed taking into consideration gender, social status, medium of instruction and so on. The motive behind the formation of such teams is to help introverts seek motivation from the extroverts, sociable students to lead the team, and all the members get the opportunity to interact with members of the opposite gender in a team.

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Based on the discussion among the learners and the faculty, the narrative was divided into the following five scenes to undertake role play.

Scenes

Scene 1 – Visit of Miss Krishna to the author’s house – introduction and interaction of Miss Krishna with the author – the backdrop of their first meeting

Scene 2 – Miss Krishna’s house moving – her annoying and troublesome stay with the author - – surprise and shock to the author – author’s furious response

Scene 3 – Miss Krishna returns to her hovel – Continuation of friendship with the author – Shopping of small and beautiful things – elegant collection of Miss Krishna with reminiscences

Scene 4 – Author’s visit to Lal’s house – Discussion of Tea cup set – author’s findings – Interaction with Miss Krishna about Lal’s Tea cup set – Responses of Miss Krishna

Scene 5 – Sudden demise of Miss Krishna – Funeral – ‘Will’ executed by Miss Krishna – Disclosure of Miss Krishna’s wonderful collection of articles – Author’s Table clock

The above mentioned are the significant scenes identified by the students and faculty. It was also decided to divide roles among the students and was followed by preparation of dialogues with the help of text book, peer group discussions and advice of faculty. The following is the procedure adopted for writing dialogues.

Dialogue writing

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The process of writing dialogues for the role play was begun with peer group discussions which helped students to develop their first draft. Under the guidance of the faculty, students further reviewed and revised their dialogues in the consequent drafts. Thus, with the collaborative efforts of students, they were able to produce final draft in a week's time.

During this course of time, students have experienced language learning in a more meaningful and encouraging way without their conscious efforts. This collaborative work has facilitated them in several ways as they get opportunities to listen to their faculty, peer group and outsiders on the role play. It has also actively involved them in speaking skills as they have to respond to their faculty, peer group and outsiders to express their views. In addition to these, they have read their prescribed role play and other general information available on role play on the internet. Thus, they have put in great efforts to improve their reading skills without being aware of it. Finally, they have intently focused on writing skills in the form of writing and revising their drafts several times. Thus, the role play has encouraged the students to come forward and participate actively in discussions, besides improving their social skills and etiquette. The whole process of doing role play facilitated students to enhance their LSRW skills. The efforts of the students have been fruitful as they were able to experience all those mentioned above.

Developing dialogues for the characters and scenes also helped students to empathize with the characters, to comprehend the situation and to undertake the role in total agreement with the narrative.

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The information presented above states the process of writing dialogues for the role play and it leads to the logical next step of practicing and enacting the role play. The ensuing section focuses on them.

Practice of role play

The process of writing dialogues was completed with the final approval of the faculty. It led to the next step of practicing their role play. The practice sessions were begun in the English Language Lab sessions for about a week's time. During these sessions, students had an opportunity to watch performances of other groups which helped them to know the merits and demerits of role play. This apart, majority of the students have gained confidence and shed their inhibitions to a great extent. After a reasonably good performance, suggestions were given to them to exchange their roles and practice, as it helps them to grasp the total scene of the role play. Then, students are given the suggestion to take up their own roles and practice again for several times. When students gain confidence to perform role play without any assistance they are encouraged to take up the role play before the class.

This practice helps students to cope with the dialogues, situation, and characters in the play and to empathize with the character which in turn helps them to undertake role play in the best manner possible. Thus, the practice sessions have been conducted fruitfully and it led to the final phase of performing the role play before the class.

Performance of Role Play

After a two week rigorous rehearsal sessions, majority of the students have expressed their willingness to act in the final performance. All the students have started off with sincere

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approach to give their best by giving life to their roles. They were quite enthusiastic to undertake role play. They gathered all the articles and costumes that aptly suit the respective scenes. The costumes, the preparation and arrangement of articles gave the set a sense of ambiance as described in the narrative.

All the six teams, comprising of five students in each, showed interest and initiation to take part. All the six teams had done thorough preparation and rehearsals which reflected in their great performance.

All the scenes were enacted the way they were planned. The delivery of dialogues reflected a feel for the character. They had also taken care of emotions and body language of the character. The performance and the enthusiasm of the students stimulated one and all in the class. It was a joyful and memorable language learning experience.

The actual performance of the role play which has emerged out of several rehearsals on the part of students was presented above. The following section deals with the findings of the research study which are drawn with the help of the tools of the research.

Findings

Research tools such as personal observation and informal student interviews were great sources of help for the researchers to elicit responses and to arrive at the findings of the research. The findings of the research were positive and encouraging. Some of the vital findings are mentioned below:

- The whole process has encouraged the students to a great extent.
- Majority of the students have expressed that they have reduced their inhibitions.

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- It was also evident from the interactions of the shy students that they have improved their negotiating skills.
- Role play has given them required impetus to communicate in a variety of authentic situations.
- As mentioned earlier, role play facilitated the integration of LSRW skills.
- The procedure of the research and activity have helped give sufficient exposure for listening skills as students have to interact with faculty and peer group regularly.
- This research study has also provided good number of opportunities for students to voice their views on various aspects during discussion, practice and execution of the role play.
- It also demanded students to read the original text of the role play besides other available resources on role play to enrich their abilities and contribution.
- Students have got a wonderful opportunity of writing dialogues for various roles besides editing and redrafting their dialogues. This process has gradually enriched their writing skills.
- Majority of the students have overcome the barriers of gender, and socio-economic backgrounds.
- Students have expressed their willingness to participate in such events to get good exposure for participating in public speaking activities.
- The activity has also exposed students to the necessary social skills and etiquette to be followed.

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- The whole process has greatly enriched the interaction between teachers and students.

In addition to the above findings, such activities always cheer up the classroom atmosphere; and in such settings, teaching of textual grammar has also become quite easy for teachers to teach and learners to receive.

Conclusion

This is a small scale research study which aimed at reducing various inhibitions which hamper student participation in classrooms. The study had taken role play as a tool and it employed Collaborative Action Research (CAR) as the methodology to conduct the research. The findings of the research show it attained the objectives of the research to a great extent. The whole experience of the researchers substantiates that activities of this kind do always maximize the role of learners, boost their morale and develop interaction levels between the teacher and the taught for the process of effective teaching and learning.

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Query Optimization: Solution for low recall problem in Hindi Language IR - Revisited with Experimental Results and Analysis

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Abstract

While information retrieval (IR) has been an active field of research for decades, for much of its history it has had a very strong bias towards English as the language of choice for research and evaluation purposes. The Internet is no longer monolingual, as the non-English content is growing rapidly. Hindi is the third most widely spoken language in the world. An estimated 500-600 million people speak this language. Information Retrieval in Hindi language is getting popularity and IR systems face low recall if existing systems are used as-is. Certain characteristics of Indian languages do not enable the existing algorithms to match relevant keywords in the documents for retrieval.

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Some of the major characteristics that affect Indian language IR are due to language morphology, compound word formations, word spelling variations, ambiguity, word synonym, foreign language influence, and lack of standards for spelling words.

Taking into consideration the aforesaid issues we introduced Hindi Query Optimization technique in our previous work [4]. In this paper we extend our work by presenting various experiments carried out by using query optimization technique to solve low recall problem in Hindi Language IR.

Keywords: Information retrieval, Hindi, Monolingual, Query optimization, Interface, Hindi WordNet.

1. Introduction

While information retrieval (IR) has been an active field of research for decades, for much of its history it has had a very strong bias towards English as the language of choice for research and evaluation purposes. Internet shows more inclination toward the use of plurality of languages, as the non-English content is growing rapidly. More people have begun to send and receive e-mails, searching for information, reading e-papers, blogging and launching web sites in their own languages. Hindi is the third most widely-spoken language in the world (after English and Mandarin): an estimated 500-600 million people speak this language. Two American IT companies, Microsoft and Google, have played a big role in making this possible.

Realizing the potential of Indian languages, Microsoft and Google have launched various products in the past two years. With Google Hindi and Urdu search engines, one can search all the Hindi and Urdu Web pages available on the Internet, including those that are not in Unicode font. Google also provides transliteration in Bengali, Gujarati, Hindi, Kannada, Malayalam, Marathi, Nepali, Punjabi, Tamil, Telugu and Urdu and offers searching in 13 languages, Hindi, Tamil, Kannada, Malayalam and Telugu, to name a few. [1].

India-centric localized search engines market is growing fast. In last year alone there have been more than 10-15 Indian local search engines launched. Here are some of the search

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engines who fall into the localized Indian search engine category. Guruji, Raftaar Hinkhoj, Hindi Search Engine, Yanthram, Justdial, Tolmolbol, burrp, Dwaar, onyomo, khoj, nirantar, bhramara, gladoo, lemmefind.in along with Ask Laila which have been launched a couple of months back. Also, we do have localized versions of those big giants Google, Yahoo and MSN. Each of these Indian search engines have come forward with some or the other USP (Unique Selling Proposition). However, it is too early to pass a judgment on any of them as these are in testing stages and every start-up is adding new features and making their services better.

Many information seekers use a search engine to begin their Web activity. In this case, users submit a query, typically a list of keywords, and receive a list of Web pages that may be relevant, typically pages that contain the keywords. Today though considerable amount of content is available in Indian languages, users are unable to search for such content.

Information Retrieval in Hindi language is getting popularity and IR systems face low recall if existing systems are used as is. Certain characteristics of Indian languages cause the existing algorithms to become unable to match relevant keywords in the documents for retrieval. Some of the major characteristics that affect Indian language IR are due to language *morphology*, *compound word formations*, *word spelling variations*, *Ambiguity*, *Word Synonym*, *foreign language influence*, *lack of standards for spelling words*. [2][3]

Taking into consideration the aforesaid issues we introduced Hindi Query Optimization technique [4]. Query optimization is one in its own kind. It is the first initiative taken in the field of monolingual Hindi IR. Almost all phonetic, synonym English equivalent Hindi keywords, phonetic variations of proper nouns and wrongly transliterated keywords converted to correct form are at their disposal and the optimized version of the query is suggested to the user so that effective process of Hindi IR can be carried out.

In this paper we discuss our experiments related to monolingual IR and web IR in the context of Hindi language. Queries received by users were organized into various domains namely “Agriculture”, “Science and Technology”, “Medical”, “General” and “Tourism”. Some additional experiments on effect of phonetics and transliteration on proper nouns (names of

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individuals and places) were also conducted .The primary objective of the experiments was to study the impact of rephrasing and optimization of query in improving the problem of recall for Hindi language using our interface. The process of data retrieval and precision statistics are discussed in detail in the subsequent sections through various tables. The limitations of the present working system have also been discussed later in this paper.

2. Research Methodology and Data Collection

The software was distributed to various people (with particular domain expertise e.g. Tourism, research scholars of Hindi and other departments, Medical students etc.) and to the novice Hindi users for general purpose Hindi search. The users were also encouraged to make use proper nouns like names of the famous people and places in their searches. Also the users were asked to make use of Hindi queries containing English keywords (written in Hindi). To observe precision of the results the interface has been provided with feedback feature for which existing users have been guided to check the relevance of first ten results and report the relevance as average, Good, Very good and Excellent for a query supplied.

All the queries supplied by the users have been collected in the query log as different groups. Queries from tourism domain are group one queries. Queries from Hindi experts are group two queries. Similarly the pattern follows. Fifteen minutes of training session was organized for each group which indicates the ease of the use/handling of the search interface.

A total of 1245 queries of different nature were collected along with the feedback for the results obtained. The log has been examined for the variations of the queries performed by the uses and it was found that on an average a small query has been variated for four to five times. The maximum variation of the query has been observed as 8-10 times for large queries containing 6-7 keywords words.

From the large number of queries we present randomly picked queries from each group, particularly the queries which contains for which feedback has been provided. Measuring the information retrieval effectiveness of Web search engines can be expensive if human relevance judgments are required to evaluate search results. Using implicit and explicit user feedback for search engine evaluation provides a cost and time effective manner of addressing this problem.

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Web search engines can use human evaluation of search results without the expense of human evaluators. An additional advantage of feedback approach is the availability of real time data regarding system performance. We use the explicit feedback to calculate performance metrics, such as precision. This information can lead to more successful relevance feedback techniques.

3. Organization of tables

Before explaining the process of retrieval and precision statistics through the use of tables it is obligatory to explain the role of various tables in handling different types of data. A brief explanation about the kind of data handled by a particular table is given as:

Table 1st: Contains queries related to Agriculture.

Table 2nd: Contains queries related to Science and Technology

Table 3rd: Contains queries related to Medical Domain

Table 4th: Contains queries related to General searches

Table 5th: Contains queries related to Tourism

Column wise representation/organization of the data in these tables is described as:

Column: 1st: Index

Column 2nd: Original query supplied by the user.

Column 3rd: Variants of the query generated through our interface.

Column 4th, 6th, 8th: Search engine results: Quantity of the documents

Column 5th, 7th, 9th: Precision for first 10 results.

Columns 4th, 6th, 8th of the tables given below contain quantity of results returned by the search engines. The quantity of results varies with time and hence does not remain constant as queries are tested live. The arrangement of the results does not follow any order ascending or descending. The first result reflects quantity of the documents returned by the original query and rest reflects the quantity of the documents returned by the variants of the query as received through the interface.

To check the relevance of the results only first ten results are considered as it is generally believed that the most relevant data is present / available in the first few results. The search

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engines used for live searches are Google, Yahoo and Guruji. Selection of these search engines is made because of their usage in India as per “Juxt consult online research survey” [5].

The details of the results are shown in the tables given below.

S. NO	Original Query	Query Variations Generated	Documents Returned and precision @10						
			Google	Per. @10	Yahoo	Per. @10	Guruji	Per. @10	
Table 1 Queries related to Agriculture Domain									
1	भारतीय कृषि संस्थान	1	भारतीय कृषि संस्थान	354,000	8	10,600	7	779	4
		1.1	भारतीय किसानि संस्थान	385,000	8	6,040	5	13	2
		1.2	इंडियन कृषि संस्था	80,800	7	13,700	6	75	3
		1.3	भारतीय खेती संस्था	265,000	7	7,920	4	272	4
		1.4	इंडियन एग्रीकल्चर इंस्टिट्यूट	754	9	20	8	1	1
2	चावल की पैदावार बढ़ाने की तरकीब	2	चावल की पैदावार बढ़ाने की तरकीब	394	6	14	4	6	3
		2.1	चावल की फसल बढ़ाने के उपाय	10,300	6	84	4	177	4
		2.2	चावल की फसल बढ़ाने का तरीका	16,500	5	66	3	7	2
3	हिंदुस्तान खेती क्षेत्र में बैंक	3	हिंदुस्तान खेती क्षेत्र में बैंक	37,200	5	9,550	4	9	3
		3.1	भारत कृषि क्षेत्र में बैंक	464,000	7	14,400	9	737	6
		3.2	भारत खेतीबाड़ी क्षेत्र में बैंक	1,840	7	41	1	20	1
		3.3	इंडिया एग्रीकल्चर फील्ड में बैंक	610	6	36	4	2	1
4	क्रॉप Language in India	4	क्रॉप इंश्योरेंस www.languageinindia.com	104	4	3	1R	0	n/a

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	इंश्योरेंस पॉलिसी		पॉलिसी						
		4.1	फसल बीमा योजना	84,900	9	5,260	6	283	5
		4.2	फसल इंश्योरेंस स्कीम	2,990	7	33	5	3	1
		4.3	फसल बीमा पॉलिसी	5,440	7	83	5	6	2
5	मवेशियों का चुनाव	5	मवेशियों का चुनाव	88,200	1	4,920	1	54	1
		5.1	जानवरों का चुनाव	907,000	2	7,840	2	363	2
		5.2	मवेशियों का चयन	21,900	2	4,740	2	14	1
		5.3	जानवरों का चयन	160,000	1	10,600	1	96	1
6	किसान क्रेडिट-कार्ड योजना	6	किसान क्रेडिट-कार्ड योजना	97	5	10	4	1	1
		6.1	किसान क्रेडिट-कार्ड योजना	209,000	6	4,230	8	188	6
		6.2	किसान क्रेडीट-कार्ड योजना	522	6	16	7	3	1
		6.3	कृषक क्रेडिट कार्ड योजना	9,080	7	138	7	6	2
7	कपास फसल बचाव	7	कपास फसल बचाव	216	3	11	4	0	n/a
		7.1	कपास फसल बचाव	8,540	6	7,910	8	17	5
		7.2	कपास फसल रक्षा	8,060	4	138	7	186	6
		7.3	कपास उपज रक्षा	6,930	4	7,660	4	177	4
8	किसान के	8	किसान के	468,000	8	9,160	6	446	5

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हित में सरकार		हित में सरकार						
	8.1	किसान के हित में प्रशासन	186,000	8	9,550	4	196	5
	8.2	किसान के कल्याण में सरकार	973,000	5	8,260	4	520	4
	8.3	किसान के हित में गवर्नमेंट	4,040	6	86	1	1	1

Table 2 Queries related to Science and Technology Domain

1	विज्ञान साहित्य का प्रकाशन	1	विज्ञान साहित्य का प्रकाशन	3,510	5	345	3	9	3
		1.1	विज्ञान साहित्य का प्रकाशन	762,000	7	29,600	5	10,77	5
		1.2	साइंस लिटरेचर का प्रकाशन	463	5	124	5	2	1
		1.3	साइंस लिटरेचर का पब्लिकेशन	69	5	6	4	0	n/a
2	प्लूटो ग्रह का पाँचवाँ चाँद	2	प्लूटो ग्रह का पाँचवाँ चाँद	151	9	178	1	0	n/a
		2.1	प्लूटो ग्रह का पंचम चंद्र	187	4	10,300	2	1	0
		2.2	प्लूटो ग्रह का पंचम चंद्रमा	204	2	10,700	1	2	1
3	सैटेलाइट मेजरमेंट तकनीक	3	सैटेलाइट मेजरमेंट तकनीक	6	5	3	1	0	n/a
		3.1	सैटेलाइट मेजरमेंट तकनीक	21	6	0	n/a	1	0

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		3.2	कृत्रिम उपग्रह मापन तकनीक	225	8	23	4	4	1
4	पृथ्वी पर सौर सुनामी	4	पृथ्वी पर सौर सुनामी	776	8	77	4	0	n/a
		4.1	धरती पर सौर सुनामी	2,640	8	214	4	7	4
		4.2	पृथ्वी पर सौर सुनामी	4,070	7	339	7	2	1
		4.3	धरती पर सौर सुनामी	533	7	59	6	0	n/a
5	युवा वैज्ञानिक पुरस्कार	5	युवा वैज्ञानिक पुरस्कार	111,000	8	18,900	8	311	6
		5.1	युवा विज्ञानी पुरस्कार	220,000	8	442	4	5	1
		5.2	यंग साइंटिस्ट अवार्ड	915	10	71	6	0	n/a
		5.3	यंग सायंटिस्ट अवार्ड	102	8	0	n/a	0	n/a
6	देखें विज्ञान विडियो	6	देखें विज्ञान विडियो	46,900	4	11,400	6	162	6
		6.1	देखें विज्ञान फिल्म	1,220,000	5	775,000	2	779	2
		6.2	देखें साइंस मूवी	40,600	3	482	4	260	2
		6.3	देखें विज्ञान फ़िल्म	35,800	8	11,600	5	568	6
7	ब्रह्मोस हाइपरसोनिक मिसाइल परीक्षण	7	ब्रह्मोस हाइपरसोनिक मिसाइल परीक्षण	1,630	9	18	9	0	n/a
		7.1	ब्रह्मोस हाइपरसोनिक मिसाइल टेस्ट	536	6	10	9	0	n/a
		7.2	ब्रह्मोस सुपर	11,200	9	154	8	1	0

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			सोनिक मिसाइल परीक्षण						
8	नासा अंतर्राष्ट्रीय अंतरिक्ष स्टेशन	8	नासा अंतर्राष्ट्रीय अंतरिक्ष स्टेशन	20,400	10	357	10	9	5
		8.1	नासा अंतर्राष्ट्रीय स्पेस स्टेशन	17,500	10	190	10	3	1
		8.2	नासा अंतर्राष्ट्रीय अन्तरिक्ष स्टेशन	439	9	89	8	0	n/a
		8.3	नासा इंटरनेशनल अंतरिक्ष स्टेशन	3,910	8	249	7	1	0
		8.4	नासा बहुराष्ट्रीय अंतरिक्ष स्टेशन	336	7	19	6	2	1

Table 3 Queries related to Medical Domain

1	इन्डियन इंस्टिट्यूट हेल्थ एजुकेशन ऐन्ड रिसर्च	1	इन्डियन इंस्टिट्यूट हेल्थ एजुकेशन ऐन्ड रिसर्च	1	1	0	n/a	0	n/a
		1.1	भारतीय संस्थान स्वास्थ्य शिक्षा और शोध	37,100	5	32,000	1	93	2
		1.2	इन्डियन इंस्टिट्यूट स्वास्थ्य शिक्षा और रिसर्च	708	3	30,500	3	1	1
		1.3	इन्डियन संस्थान	14	2	289	1	0	n/a

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			स्वास्थ्यशिक्षा और अनुसंधान						
2	हेल्थ एक्शन प्लान वर्ष 2010	2	हेल्थ एक्शन प्लान वर्ष 2010	937	5	35	7	0	n/a
		2.1	स्वास्थ्य कार्रवाई योजना साल 2010	364,000	2	7570	3	13	2
		2.2	स्वास्थ्य कार्रवाई योजना वर्ष 2010	3,430	1	86	2	0	n/a
3	डायबीटीज़ में डिप्रेशन	3	डायबीटीज़ में डिप्रेशन	500	3	13	3	0	n/a
		3.1	डायबीटीज़ में डिप्रेशन	1,090	6	26	4	3	1
		3.2	डायबिटीज़ में डिप्रेशन	18,900	6	38	5	1	0
		3.3	मधुमेह में डिप्रेशन	25,000	7	3,580	8	16	4
4	स्वास्थ्य संबंधी कार्यक्रम	4	स्वास्थ्य संबंधी कार्यक्रम	6,210	6	3,750	5	2,443	5
		4.1	स्वास्थ्य संबंधी कार्यक्रम	344,000	6	8,700	4	740	4
		4.2	सेहत संबंधी कार्यक्रम	56,700	5	1,400	4	133	4
		4.3	सेहत संबंधी प्रोग्राम	8,180	7	3,510	3	17	1
5	जवाहर लाल नेहरू कैंसर अस्पताल	5	जवाहर लाल नेहरू कैंसर अस्पताल	7	3	0	n/a	0	n/a
		5.1	नेहरू कैंसर हॉस्पिटल	80	10	3	8	0	n/a
		5.2	पंडित_जवाहरलाल_नेहरू कैंसर अस्पताल	1,050	1	19	0	0	n/a

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		5.3	नेहरू कैंसर अस्पताल	37,700	8	15,800	8	31	2
		5.4	नेहरू कैंसर चिकित्सालय	3,690	7	64	6	2	1
6	रक्त कैंसर के कारण	6	रक्त कैंसर के कारण	2,100	1	105	2	78	3
		6.1	रक्त कैंसर के कारण	213,000	9	8,140	10	99	4
		6.2	ब्लड कैंसर के कारण	1,030	1	53	3	6	3
		6.3	ब्लड कैंसर के कारण	102,000	9	4,910	10	67	5
7	स्वास्थ्य जानकारी नेटवर्क	7	स्वास्थ्य जानकारी नेटवर्क	470,000	3	6,860	2	293	2
		7.1	स्वास्थ्य सूचना नेटवर्क	1,950,000	5	5,860	3	272	1
		7.2	हेल्थ सूचना नेटवर्क	27,000	4	11,400	2	18	1
		7.3	स्वास्थ्य जानकारी संजाल	8,630	1	4,810	1	28	1
8	हृदय बीमारी इलाज	8	हृदय बीमारी इलाज	153,000	8	5,220	8	349	2
		8.1	दिल बीमारी इलाज	607,000	7	8,490	6	692	3
		8.2	हृदय रोग चिकित्सा	195,000	10	7,450	5	221	4
		8.3	हार्ट डिजीज ट्रीटमेंट	681	9	21	8	2	1
Table 4 Queries related to Tourism Domain									
1	टूरिज्म के	1	टूरिज्म के लिए	14,000	9	1,660	7	62	3

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	लिए हिमाचल		हिमाचल						
		1.1	पर्यटन के लिए हिमाचल	636,000	10	227,000	9	476	8
		1.2	टूरिज़म के लिए हिमाचल	126	5	6	4	2	1
		1.3	टूरिज़म के लिए हिमाचल	164	8	5	2	0	n/a
2	सैंट्रल टूरिज़म डिपार्टमेंट	2	सैंट्रल टूरिज़म डिपार्टमेंट	57	7	6	8	0	n/a
		2.1	केंद्रीय पर्यटन विभाग	702,000	10	13,700	7	205	5
		2.2	केंद्रीय टूरिज़म विभाग	28,700	9	375	7	9	2
3	पर्यटक सूचना केंद्र	3	पर्यटक सूचना केंद्र	2,020,000	9	9,120	8	27	3
		3.1	पर्यटक जानकारी केंद्र	919,000	8	10,110	6	97	4
		3.2	सैलानी सूचनाकेंद्र	162,000	8	381	4	6	4
		3.4	सैलानी सूचना सेंटर	14,000	7	143	7	1	0
4	घरेलू टूरिज़म इन्फ्रास्ट्रक्चर	4	घरेलू टूरिज़म इन्फ्रास्ट्रक्चर	21	6	3	1	0	n/a
		4.1	घरेलू टूरिज़म इन्फ्रास्ट्रक्चर	1,080	5	23	7	2	1
		4.2	घरेलू पर्यटन आधारभूत	4,750	7	405	4	4	3
		4.3	घरेलू पर्यटन अवसंरचना	709	7	137	5	3	1
5	टूरिज़म के अध्यक्ष	5	टूरिज़म के अध्यक्ष	1,410	6	3	5	1	1
		5.1	पर्यटन के अध्यक्ष	1,150,000	5	66,600	4	2,314	4
		5.2	टूरिज़म के	5,170	8	447	6	8	1

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			चेयरमैन						
		5.3	पर्यटन के चेयरमैन	109,000	4	44,700	5	106	4
6	डायरेक्टर टूरिज्म दिल्ली	6	डायरेक्टर टूरिज्म दिल्ली	287	6	6	4	3	1
		6.1	डायरेक्टर टूरिज्म नई_दिल्ली	1,660	7	155	5	9	3
		6.2	निर्देशक पर्यटन दिल्ली	287,000	6	10,400	8	78	4
		6.3	निर्देशक परिभ्रमण दिल्ली	9,000	2	113	6	11	5
7	नेशनल इंस्टीट्यूट टूरिज्म	7	नेशनल इंस्टीट्यूट टूरिज्म	2	2	0	n/a	0	n/a
		7.1	नेशनल इंस्टीट्यूट टूरिज्म	7	4	1	0	0	n/a
		7.2	राष्ट्रीय संस्था पर्यटन	362,000	7	28,000	6	289	6
			नेशनल इंस्टीट्यूट टूरिज्म	187	5	18	8	0	n/a
8	भारत टूरिज्म सेक्टर में रोजगार	8	भारत टूरिज्म सेक्टर में रोजगार	187	9	6,440	1	3	1
		8.1	भारत टूरिज्म सेक्टर में रोजगार	1,050	8	602	4	0	n/a
		8.2	भारत पर्यटन क्षेत्र में रोजगार	59,700	7	79,600	6	26	5
		8.3	भारत पर्यटन	592,000	7	98,500	5	436	5

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			क्षेत्र में रोजगार						
Table 5 General Search Queries									
1	मुफ्त शैक्षिक संसाधन	1	मुफ्त शैक्षिक संसाधन	4,230	4	71	4	1	0
		1.1	मुफ्त शैक्षिक संसाधन	31,700	5	565	8	9	5
		1.2	निशुल्क शैक्षिक संसाधन	3,450	4	73	7	1	0
		1.3	निशुल्क शैक्षिक साधन	4500	7	102	6	2	1
		1.4	निःशुल्क शैक्षिक संसाधन	2,580	7	84	6	3	2
2	केंद्रीय हिन्दी बोर्ड	2	केंद्रीय हिन्दी बोर्ड	403,000	4	7,430	3	414	3
		2.1	केन्द्रीय हिंदी परिषद्	18,000	4	8,630	5	24	3
		2.2	सेंट्रल हिंदी बोर्ड	94,900	3	10,200	6	33	4
3	अंतराष्ट्रीय नारी दिवस	3	अंतराष्ट्रीय नारी दिवस	102	2	4	1	0	n/a
		3.1	अंतराष्ट्रीय महिला दिवस	806,000	9	11,500	6	756	5
		3.2	इंटरनेशनल वूमन डे	1,480	2	21	1	1	0
		3.3	इंटरनेशनल स्त्री दिवस	916	2	33	2	1	0
4	कन्या गर्भ हत्या	4	कन्या गर्भ हत्या	37,200	9	9,830	6	73	4
		4.1	कन्या भ्रूण हत्या	220,000	10	15,400	10	355	4

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		4.2	लड़की पेट हत्या	519,000	5	7,770	9	181	3
5	वर्ल्ड ट्रेड सेन्टर आतंकवादी हलमा	5	वर्ल्ड ट्रेड सेन्टर आतंकवादी हलमा	0	n/a	0	n/a	0	n/a
		5.1	वर्ल्ड ट्रेड सेन्टर आतंकी हमला	8,820	10	92	10	12	3
		5.2	वर्ल्ड ट्रेड सेन्टर आतंकी अटैक	331	8	10	10	1	0
6	फैशन ऐंड स्टाइल	6	फैशन ऐंड स्टाइल	3850	8	51	6	36	6
		6.1	फैशन और स्टाइल	176,000	5	47	4	17	6
		6.2	फैशन ऐंड स्टाइल	191,000	10	245	7	591	3
		6.3	प्रचलन और शैली	36,600	6	22,330	5	138	2
7	कला और मनोरन्जन	7	कला और मनोरन्जन	3,060	3	37	2	3	1
		7.1	कला और मनोरंजन	7,550,000	9	72,110	7	2,364	7
		7.2	आर्ट्स और एंटरटेनमेंट	8,850	4	42	3	24	3
		7.3	आर्ट ऐंड एंटरटेनमेंट	6,130	6	53	5	11	2

4. Experimental Analysis

As Hindi literature on web is growing on an exponential rate the availability of the same to the end users becomes a prime concern. As already mentioned in our previous work [4] that growth and demand of Hindi users is increasing day by day and various private and government organizations are making their continuous efforts to provide Hindi information to users in India

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and abroad as well. In spite of all such efforts Information retrieval in Hindi language is still suffering due to various factors [2] [3]. All such factors ultimately boil down to a single major problem known as problem of low recall.

In the above tables one can easily observe that problem of low recall can be solved in an effective manner by making variation/s in the query. The variations in the query are dependent on many factors that influence the Hindi search on web. The factors like morphology, phonetics, synonyms and influence of English language on Hindi are major factors which are required to be addressed. An attempt has been made in this investigation to address these factors by including them in Hindi search. A detailed analysis, based on the importance of these factors, has been carried out in this paper. The design and development of the interface for query optimization already discussed in [4] addresses these factors very efficiently and improves the recall for Hindi data on web.

4.1 Observations

In the above table it can be clearly seen that variations of query are generated by making variations in the keywords without changing the meaning of the query and for each varied query a different set of results have been mined out. These variations have less to do with English language but have more impact on Hindi language due to the complexity of Language itself. The tables given above provide lot of information about basic query submitted by the user and the varied query generated by the interface. Because of large number of queries only a few of interest have been picked from tables from each domain to discuss and analyze. The queries picked from various domains are analyzed briefly in the proceeding section.

4.1.1 Agricultural Domain

The original query supplied by the user is भारतीय कृषि संस्थान (*Bhaartiya Krishi Sansthaan*) which means (Indian Agricultural Institutes) in English. The following variations are made to the query through the interface (Variatied synonym) भारतीय किसानी संस्थान (Variatied synonym and English equivalent) इंडियन कृषि संस्था (Variatied two synonyms) भारतीय खेती संस्था.

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(Variatied English equivalents) **इंडियन एग्रीकल्चर इंस्टिट्यूट**. For each variatied query a different set of results has been obtained where the meaning of the query remains same. In case of Google for the original query 354,000 results for 1st variation 385,000 results for 2nd 3rd and 4th 80,800, 265,000 and 764 results are obtained which are distinct. The pattern with different figures in quantity of results can be seen for other queries. As far as relevance is concerned it can be clearly seen in the table that for original query 8 out of 10 results are relevant for 1st variatied query 8 out of 10 results are relevant similarly for 2nd 3rd 4th variatied query 7/10, 7/10 and 9/10 results are relevant. Therefore it can be analyzed that by generating the variatieds of the query not only the quantity but quality of results is also affected.

In another query किसान क्रेडिट-कार्ड योजना phonetic variatieds are made to keywords क्रेडिट-कार्ड and योजना and its impact on recall can be seen. For original query only 97 results are obtained and the variatied query किसान क्रेडिट-कार्ड योजना gives 209,000 results similarly the other variatieds किसान क्रेडिट-कार्ड योजना and कृषक क्रेडिट कार्ड योजना gives 522 and 9080 results which are more than the results obtained against original query.

The figures become more interesting when queries on tested on Guruji Search engine for the above query. Original query किसान क्रेडिट-कार्ड योजना only **one** result variatied query किसान क्रेडिट-कार्ड योजना 188 results किसान क्रेडिट-कार्ड योजना 3 results and कृषक क्रेडिट कार्ड योजना 6 results.

The optimized query generated by the Interface for original query is किसान क्रेडिट-कार्ड योजना

4.1.2 Science and Technology Domain

The original query supplied by the user is सैटेलाइट मेजरमेंट तकनीक (*saatelaaiet mejermaint takneek*) which means (satellite measurement technique) in English. The following variatieds are made to the query through the interface (Variatied phonetic) सैटेलाइट मेजरमेंट तकनीक (Variatied synonym and Hindi equivalent) कृत्रिम उपग्रह मापन तकनीक. For each variatied query a different set of results has been obtained and the meaning of the query remains same. In case of Google for

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the original query 6 results for 1st variation 21 results and for 2nd variation 255 results are obtained which are distinct. The pattern with different figures in quantity of results can be seen for other queries. The optimized query generated by the Interface for original query is **कृत्रिम**

उपग्रह मेजरमेंट तकनीक

As far as relevance is concerned it can be clearly seen in the table that for original query 5 out of 6 results are relevant for 1st varied query 6 out of 10 results are relevant similarly for 2nd varied query 8/10 results are relevant.

The figures become more interesting when queries are tested on Guruji Search engine for the same query. Original query **सैटेलाइट मेजरमेंट तकनीक** NO result and varied queries **सेटेलाइट मेजरमेंट तकनीक** and **कृत्रिम उपग्रह मापन तकनीक** 1 and 4 results are obtained. This shows how recall improves by inclusion of query variations in Hindi search.

4.1.3 Medical Domain

The original query supplied by the user is **डायबीटीज़ में डिप्रेशन** (*daayabteez mein dipreshn*) which means (depression during diabetes) in English. The following variations are made to the query through the interface (Variatd phonetic) **डायबीटीज़ में डिप्रेशन** (Variatd phonetic) **डायबिटीज़ में डिप्रेशन** (Variatd synonym) **मधुमेह में डिप्रेशन**. For each varied query a different set of results has been obtained and the meaning of the query remains same. In case of Google for the original query 500 results for 1st variation 1090 results and for 2nd and 3rd variation 18,900 and 25,000 results are obtained which are distinct. The same pattern with different figures in quantity of results can be seen for other queries. The optimized query generated by the Interface for original query is **मधुमेह में डिप्रेशन**.

As far as relevance is concerned it can be clearly seen in the table that for original query 3 out of 10 results are relevant for 1st varied query 6 out of 10 results are relevant similarly for 2nd and 3rd varied queries 6/10 and 7/10 results are relevant. Therefore it can be analyzed that by generating the variations of the query not only the quantity but quality of results is also affected.

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Queries when tested on Guruji Search engine. Original query डायबीटीज़ में डिप्रेशन NO result and varied queries डायबीटीज़ में डिप्रेशन, डायबिटीज़ में डिप्रेशन and मधुमेह में डिप्रेशन 3, 1 and 16 results are obtained.

4.1.4 Tourism Domain

The original query supplied by the user is डायरेक्टर टूरिज्म दिल्ली (*daayrectr toorizm dilli*) which means (Director of tourism Delhi) in English. The following variations are made to the query through the interface (Variated phonetic) डायरेक्टर टूरिज्म नई_दिल्ली (Variated Hindi equivalent and synonym) निर्देशक पर्यटन दिल्ली (Variated Hindi equivalent and synonym) निर्देशक परिभ्रमण दिल्ली. For each varied query a different set of results has been obtained and the meaning of the query remains same. In case of Google for the original query 287 results for 1st variation 1,660 results and for 2nd and 3rd variation 287,000 and 9,000 results are obtained which are distinct. The pattern with different figures in quantity of results can be seen for other queries. The optimized query generated by the Interface for original query is निर्देशक पर्यटन दिल्ली.

As far as relevance is concerned it can be clearly seen in the table that for original query 6 out of 10 results are relevant for 1st varied query 7 out of 10 results are relevant similarly for 2nd and 3rd varied queries 6/10 and 2/10 results are relevant. Therefore it can be analyzed that by generating the variations of the query not only the quantity but quality of results is also affected.

By making variations of the queries depending upon various factors as discussed the problem of recall in Hindi IR can be solved up to a great extent. ***It should be noticed that data of similar nature can be mined out regardless the quantity and relevant results can be obtained effectively. Our focus is not only on the quantity of data retrieved but the NATURE of the data retrieved.*** In the above analysis of various domains it has been observed that not only recall has improved but the relevant data can also be mined out. Also we discussed in [3] that English language has its impact on Hindi IR and in the above tables we show that inclusion of these English equivalent Hindi keywords improve the recall and relevance up to a certain level.

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4.1.6 Proper Nouns (Names of Individuals and Places)

In addition to conducting tests on various queries from different domains a set of experiments have also been conducted to test the affect of phonetics on proper nouns, names of popular individuals e.g. Authors, Politicians, Scientists and names of the places. Through these tests it is observed that phonetics also affect the search results. We show this with examples tested on “Google”. The table below shows the results of the tests conducted on search queries.

S.No	Name of Person	Variation Name	Google Results	Name of the Place	Variation Name	Google Results
1	सुभाष चंद्र बोस	सुभाषचन्द्र बोस	212,000 and 7,130	राजस्थान	राजसथान	5,250,000 and 3,880
2	मुंशी प्रेमचंद	मुन्शी प्रेमचन्द	51,400 and 2,600	उत्तर प्रदेश	ऊ.प्र. (Short form) and उत्तर प्रदेश	7,620,000 , 162,000 and 9,480
3	जवाहर नेहरू	जवाहर नेहरू	30,500 and 217,000	अमेरिका	अम्नीका and अमरीका	11,800,000 , 5,600 and 1,090,000
4	उमर अब्दुल्ला	ओमर अब्दुल्ला	213,000 and 38,800	देहली	दिल्ली	56,200 and 15,000,000
5	मदर टेरेसा	मदर टरेसा	37,600 and 621	इंग्लैंड	इंग्लैड and इंगलैड	2,180,000 , 15,800, 4,040 and 1,950

Table 6 Effect of phonetics on proper nouns

It can be clearly seen that even search results for proper nouns in Hindi are affected by phonetics. To overcome this problem we have made an attempt to flood our database with proper nouns

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which includes names of famous people from different areas and names of the places with their phonetic variants. Through the interface these variants can be easily accessed and scope of search can be further improved.

5. Behavior and comparison of search engines for Hindi Search

In this section we focus on the behavior (Not Working) of search engines for Hindi search. In most cases, morphological variants of words have similar semantic interpretations and can be considered as equivalent for the purpose of IR applications. For this reason, a number of stemming algorithms, or stemmers, have been developed, which attempt to reduce a word to its stem or root form. Thus, the key terms of a query or document are represented by stems rather than by the original words. For IR purposes, it doesn't usually matter whether the stems generated are genuine words or not – thus, "computation" might be stemmed to "comput" – provided that (a) different words with the same 'base meaning' are conflated to the same form, and (b) words with distinct meanings are kept separate. An algorithm which attempts to convert a word to its linguistically correct root ("compute" in this case) is sometimes called a lemmatiser. Examples of products using stemming algorithms would be search engines such as Lycos and Google, and also thesauruses and other products using NLP for the purpose of IR [6].

In the Hindi search it is apparent that Google makes use of word stemming which serves as one of the reasons for retrieval is of documents in very large quantity. A table below shows the listing of keywords by Google for a Hindi keyword.

S.No	Hindi Keyword	Google Listing of keywords
1	योजना	योजना, योजनाओं and योजनाएं.
2	फसल	फसल, फसलों and फसलें
3	पक्षी	पक्षी and पक्षियों
4	समस्या	समस्या and समस्याएं
5	रोग	रोग, and रोगों

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Table 7 Listing of keywords in results by Google for a Hindi keyword

However in case of Yahoo and Guruji it is observed that no such use of stemming has been done. Therefore the quantity of documents returned by both search engines is less as compared to Google.

All three search engines do not handle Hindi phonetics. It has been observed that the Hindi phonetic equivalent keywords are treated as different keywords. For example (सेंटर and सेन्टर) (रोज़गार, रोजगार and रोजगार) are treated as different keywords. Also the synonyms and other parameters are not handled by the search engines. It has been observed that proper nouns can have their phonetic variants and for each phonetic equivalent proper noun the distinct results can be obtained but all search engines fail to handle this. Guruji underperforms as compared to Google and Yahoo as far as retrieval of quantity of results is concerned. But an improvement has been seen in its performance when query variations are used to obtain results. In all above tables it can be clearly seen that problem of recall has been well addressed and becomes more meaningful in case of Guruji search engine.

It should be noticed that the major reasons for spelling variations in language can be attributed to the phonetic nature of Indian languages and multiple dialects, transliteration of proper names, words borrowed from regional and foreign languages, and the phonetic variety in Indian language alphabet. Also no particular standard exists for writing the keyword to fetch Hindi web data. The native Hindi user may not be aware of the Phonetic and other issues in Hindi IR and may miss the relevant information of his/her use. As we mentioned in [4] that **wrongly transliterated** keywords when supplied to search engines fetch handful of results. Therefore we also take into consideration the wrongly transliterated keywords. For a wrongly transliterated keyword correct keywords can be fetched from the database and are provided to the end user for their use in search.

The interface addresses all these issues and provides a better platform for Hindi users to search Hindi information on web. **Almost all phonetic, synonym English equivalent Hindi keywords, phonetic variations of proper nouns and wrongly transliterated keywords converted to correct**

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form are at their disposal and the optimized version of the query is suggested to the user so that effective process of Hindi IR can be carried out.

In the above tables for a given query an optimized version of the queries has been generated by the interface. The optimized queries for the basic queries submitted by the user are presented in the table given below. Here in this table we can easily see how queries submitted by the users have been optimized by the interface for generating better results.

S.No	Original User Queries	Optimized Queries Generated by Interface
1	हिंदुस्तान खेती क्षेत्र में बैंक	भारत कृषि क्षेत्र में बैंक
2	चावल की पैदावार बढ़ाने की तरकीब	चावल की फसल बढ़ाने की उपाय
3	भारतीय कृषि संस्थान	भारतीय कृषि संस्थान
4	क्रॉप इंश्योरेंस पॉलिसी	फसल इंश्योरेंस योजना
5	मवेशियों का चुनाव	मवेशियों का चयन
6	किसान क्रेडिट-कार्ड योजना	किसान क्रेडिट-कार्ड योजना
7	कपास फसल बचाव	कपास फसल रक्षा
8	किसान के हित में सरकार	किसान के हित में गवर्नमेंट
9	विज्ञान साहित्य का प्रकाशन	विज्ञान साहित्य का प्रकाशन
10	प्लूटो ग्रह का पाँचवाँ चाँद	प्लूटो ग्रह का पाँचवाँ चंद्रमा
11	सैटेलाइट मेजरमेंट तकनीक	कृत्रिम उपग्रह मेजरमेंट तकनीक
12	पृथ्वी पर सौर सूनामी	पृथ्वी पर सौर सुनामी
13	युवा वैज्ञानिक पुरस्कार	युवा साइंटिस्ट अवार्ड
14	देखें विज्ञान विडियो	देखें विज्ञान विडियो
15	ब्रह्मोस हाइपरसोनिक मिसाइल परीक्षण	ब्रह्मोस हाइपर सोनिक मिसाइल परीक्षण

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16	नासा अंतर्राष्ट्रीय अंतरिक्ष स्टेशन	नासा अंतर्राष्ट्रीय स्पेस स्टेशन
17	इन्डियन इंस्टिट्यूट हेल्थ एजुकेशन ऐन्ड रिसर्च	भारतीय संस्थान हेल्थ एजुकेशन और रिसर्च
18	हेल्थ एक्शन प्लान वर्ष 2010	हेल्थ एक्शन योजना वर्ष 2010
19	डायबीटीज़ में डिप्रेशन	मधुमेह में डिप्रेशन
20	स्वास्थ्य संबंधी कार्यक्रम	हेल्थ संबंधी कार्यक्रम
21	जवाहर लाल नेहरू कैंसर अस्पताल	नेहरूकैंसर अस्पताल
22	रक्त कैंसर के कारण	रक्त कैंसर के कारण
23	स्वास्थ्य जानकारी नेटवर्क	हेल्थ सूचना नेटवर्क
24	हृदय बीमारी इलाज	हृदय बीमारी उपाय
25	मुफ्त शैक्षिक संसाधन	मुफ्त शैक्षिक संसाधन
26	केंद्रीय हिन्दी बोर्ड	सेंट्रल भारतीय बोर्ड
27	अंतर्राष्ट्रीय नारी दिवस	अंतर्राष्ट्रीय महिला दिवस
28	कन्या गर्भ हत्या	कन्या भ्रूण हत्या
29	वर्ल्ड ट्रेड सेन्टर आतंकवादी हलमा	वर्ल्ड ट्रेड सेंटर आतंकी हलमा
30	फैशन ऐंड स्टाइल	फैशन और स्टाइल
31	कला और मनोरंजन	कला और मनोरंजन
32	टूरिज्म के लिए हिमाचल	पर्यटन के लिए हिमाचल
33	सेंट्रल टूरिज्म डिपार्टमेंट	सेंट्रल पर्यटन विभाग
34	पर्यटक सूचना केंद्र	पर्यटक सूचना सेंटर
35	घरेलू टूरिज्म इन्फ्रास्ट्रक्चर	घरेलू टूरिज्म आधारभूत
36	टूरिज्म के अध्यक्ष	टूरिज्म के चेयरमैन

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37	डायरेक्टर टूरिजम दिल्ली	निर्देशकपर्यटन दिल्ली
38	नेशनल इंस्टीट्यूट टूरिजम	नेशनल इंस्टीट्यूट टूरिजम
39	भारत टूरिजम सेक्टर में रोजगार	भारत पर्यटन क्षेत्र में रोजगार

Table 8 Optimized queries generated by the interface

6. Limitations/ Drawbacks of the Interface

The interface supported by large scale database (including morphological, phonetic variants, synonyms, English equivalents of Hindi keywords, phonetic variants proper nouns and correct variants of wrongly transliterated keywords) designed for Hindi search has benefited the users to pursue Hindi search. It has been observed that problem of recall has been solved up to a great extent and relevant results can also be mined out by making query variations. Interface also generates optimized queries for search suggestions so that users can choose correct phonetics, synonyms and English equivalents of Hindi keywords etc.

Hindi language is a rich language with multiple synonyms of one word which leads to ambiguity. Interface works well for all parameters including synonyms but in certain cases due to ambiguous nature of Hindi language wrong optimized query is generated. The problems arise for those keywords whose synonyms are not closely related. In this section we show how this problem affects the process of generating optimized query. In the table below we present some queries for which wrong optimized queries can be generated by the interface.

S.No		Synonyms Variations	Optimized Queries
1	मुम्बई मधुशाला पाबंदी	:मधुशाला:मदिरालय:मधुशाला:मद्यशाला: शराब_घर:शराबघर:मयखाना:शराबखाना:पा नागार:शराबखाना:मयखाना:सुरागार:बार: आपान:	मुम्बई शराबखाना पाबंदी

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1.1	हरिवंशराय बच्चन कविता मधुशाला	शराबखाना	हरिवंशराय बच्चन कविता शराबखाना
2	विरासतपर अनैतिकअधिकार	अधिकारः:अधिकार:वश:काबू:काबू:हक:हक: कब्जा:कब्जा:आधिपत्य:अख्तियार:अख्तियार: यार:इख्तियार:इख्तियार:ज़ोर:दावा:संरक्षण: इमकान:	विरासत पर अनैतिक कब्जा
2.1	समानता का अधिकार	कब्जा	समानता काकब्जा
3	लोक मंगल एवं लोक कल्याण	मंगल:हित:कल्याण:फायदा:फायदा:भला:मं गल:भलाई:सलामती:भला:शुभ:हित:स्वस्ति :भद्र:मंगलवार:मंगल:भौमवार	लोक कल्याणएवं लोक हित
3.1	नायक मंगल पांडे	कल्याण	नायक कल्याण पांडे

Table 9 Drawback of Interface: wrong optimized queries

From the above table it is clear that in certain cases query optimization suffers due to ambiguity involved in the Hindi language because of the multiple synonyms for a particular word. The problem has a very adverse impact on query optimization as the meaning of optimized query gets changed completely and becomes completely irrelevant. This problem occurs for certain keywords and not all keywords. There are various other keywords listed below for which this problem in query optimization does not occur because of close relation between the synonyms.

S.No	Keywords	Closely related synonyms
1	योग्य	उपयुक्त:काबिल:समर्थ:हुनरमंद:उदात्त: सलीकामंद:

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2	अनाथ	:अनाथ:यतीम:लावारिस:बेकस:छेमंड:बैतला:मुरहा:निगोड़ा_नाथा:ओर्फन:ओर्फन_चिल्ड्रन:ओर्फन_चाइल्ड:ओरफन:
3	अपमान	:अपमान:अनादर:बेइज्जती:निरादर:तिरस्कार:असत्कार:असन्मान:हेठी:तौहीन:तोहीनी:जिल्लत:ज़िल्लत:फ़ज़ीहत:अवमान:अवमानना:अवमानन:मानध्वंस::गञ्जन:इन्सुल्ट:इंसुल्ट:and more
4	रक्तदान	:रक्तदान:रुधिरदान:रक्त_दान:रुधिर_दान:ब्लड_डोनेशन:
5	अनुपस्थित	:अनुपस्थित:गैरहाज़िर:गैरमौजूद:नदारद:नदारत:अविद्यमान:अप्रस्तुत:अप्राप्त:अवर्तमान:अवर्तमान:अविद्य:मिस्सिंग:अबसेंट:एबसेंट: and more

Table 10: Closely related synonyms

Closely related synonyms do not affect the query optimization but there are many such keywords with synonyms not related closely and create ambiguity in a sentence. The drawback is serious and it needs to be addressed. In this paper drawback of the interface has been addressed but not resolved and hence becomes one important issue to be resolved in the future research work.

7. Conclusion

In our work we addressed certain factors/parameters that are responsible for low recall in Hindi Language and found that the problem of recall can be solved by optimizing the Hindi query at interface level. The Query optimizing interface handles all these issues and thus solves the problem of low recall in Hindi search.

In our database Keywords are provided with their morphological, phonetic, synonym, English equivalent Hindi variants. We also include wrongly transliterated keywords and their correct forms. Database also includes keywords related to various domains and proper nouns (names of famous persons and places) with their phonetic equivalents.

The interface has been developed to provide wide range options to the users to choose correct keyword against the keyword supplied by him/her which saves time and effort and also gives them ability to search variety of information without changing the basic nature/meaning of their query. The optimized query is further suggested to the user to use as it contains optimized keywords. Query optimizing Interface helps users to mine the Hindi information from web and

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hence chances of retrieving relevant information are increased. From our experiments presented in this paper we show that query optimization solves the problem of low recall for Hindi IR up to a great extent. The present system suffers from serious drawbacks. The limitations of the system shall be taken care of in our future work.

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Conjunctive Coordinator, *ƏdugƏ* 'and' in Manipuri

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Abstract

The present paper is concerned with the Coordination in Manipuri from the point of view of syntactic constituents. Coordination refers to syntactic constructions in which two or more units (called conjuncts or coordinands) of the same type are combined into a larger unit and still have the same semantic relations with other surrounding elements. A coordinating construction is one in which all of the constituents are of the same syntactic category consisting of two or more coordinands or coordinated phrases or conjuncts. This paper analyses the coordinator *ƏdugƏ* 'and' in the structure of Verb coordinate construction, Adjective modifiers coordinate construction, Adverb modifiers coordinate construction and Postposition modifiers coordinate construction.

Monosyndetic coordination, being a subclass of Syndetic involves only a single Coordinator, i.e., when not more than two conjuncts or coordinands are present as stated by Martin Haspelmath (2004). In Manipuri, monosyndetic coordination occurs with lexical coordinators such as *ƏdugƏ* 'and'. Also bisyndetic coordination being another subclass of Syndetic involves two coordinators i.e. when two or more conjuncts or coordinands are present. But the coordinator *ƏdugƏ* 'and' does not occur in bisyndetic coordination and also it does not occur in Noun Phrase coordinate construction. In addition to this, Manipuri allows multiple coordinands i.e. more than two coordinands. In such constructions with multiple coordinands, monosyndetic coordination occurs with the coordinator *ƏdugƏ* 'and' with fewer coordinands. We then examine the coordinator *ƏdugƏ* in opposite. In this typology of clause combination, either the first or the last clause is in negative or in opposite meaning. In coordinate structures, Manipuri employs coordinators for a variety of functions.

The analysis of the conjunctive coordinator **ədugə** ‘and’ in this language further reveals the occurrence of the coordinands or conjuncts with the coordinator **ədugə** and’. Coordinate structures such as Verb phrases, Adjective phrases, Adverb phrases etc. occur with the coordinator **ədugə** and’.

1. Introduction

Manipuri, locally known as Meiteilon, is one of the major languages of the Tibeto-Burman sub-family (kuki-chin sub-group) of the Sino-Tibetan family spoken by the people as a first language almost in and around the valley region of the State, Manipur (a north eastern state of India). Manipuri has predominantly agglutinative structure. It is a verb final structure. The word order is primarily SOV. Manipuri employs coordinators **ədugə** ‘and’ for a variety of functions. Coordinate structures such as Verb coordinate construction, Adjective modifiers coordinate construction, Adverb modifiers coordinate construction and Postposition modifiers coordinate construction occur with the coordinator **ədugə** ‘and’. And without the coordinator **ədugə** ‘and’ two components are juxtaposed without any grammatical morpheme imposing so as to indicate the expression a close semantic connection. The components are, in case of a looser semantic relationship, separated by **ədugə** ‘and’. The contrast between juxtaposition and overt conjunction provides an example of iconicity in Language (Haiman 1983, 1985 edited by Haspelmath).

Manipuri conjunction **ədugə** ‘and’ shows similarities with other Tibeto Burman Languages. Hakha Lai (a TB language in Chin State, western Burma) makes use of **=?i** ‘and’ for the clausal coordinator and **=leé** ‘and’ for the NP coordinator (See David A. Peterson and Kenneth VanBik 2004). For sgaw Karen (a sino-Tibetan language spoken in Burma) a single conjunction, **do?** performs various functions (Carol, 1993). The present paper specifically attempts to explore the various functions of the coordinator **ədugə** ‘and’ which takes important roles in Manipuri syntactic structure.

2. Coordinator ədugə

The coordinator **ədugə** ‘and’ does not occur in noun coordinate construction with two conjuncts as in monosyndetic type of syndetic coordination; but it occurs in verb coordinate construction and modifier coordinate constructions. Some examples are given below.

1. tombə əməsuŋ caobə cət^hre
 tombə əməsuŋ caobə cət -k^hə -re
 Tomba and Chaoba go-DEF-PERF
 ‘Tomba and Chaoba have gone’.

***(b)**. tombə ədugə caobə cət^hre
 tombə ədugə caobə cət-k^hə -re
 Tomba and Chaoba go -DEF-PERF

***(c)**. məhak ədugə əi cət-kəni
 məhak ədugə əi cət-kəni
 he and I go -FUT

Sentences 1(b) and (c) are unacceptable construction as the coordinator **ədugə** ‘and’ conjoins NP conjuncts, **tomba** and **chaoba** in 1(b) and **məhak** ‘he’ and **əi** ‘I’ in 1(c). Hence, the lexical coordinator **ədugə** ‘and’ does not occur in monosyndetic coordination with two coordinands or conjuncts. However, in monosyndetic coordination with multiple coordinands or conjuncts, the coordinator **ədugə** ‘and’ can occur although the combining participants are nouns as in 2(a) and (b) below.

2(a). tombəgi məma, məpa, məcil-mənao, ədugə məri-məta loinə lakkəni
 tombə -gi mə-ma, mə-pa, məcil-mənao, ədugə məri-məta loinə lak -kəni
 Tomba-GEN 3pp-mother, 3pp-father brothers, and relations whole come-FUT
 ‘Tomba’s parents, brothers, sisters and all relatives will come’.

(b). tombə, məni, ram, sam, ədugə gopal loinə cət^həre
 tombə, məni, ram, sam, ədugə gopal loi-nə cət-k^hə -re
 Tomba, Mani, Ram, Shyam and Gopal all-ADV go -DEF-PERF
 ‘All Tomba, Mani, Ram, Shyam and Gopal have gone’.

The presence of the adverb **loinə** ‘all’ in sentences 2(a) and (b) reveals the capability of conjoining the multiple noun conjuncts with the coordinator **ədugə** ‘and’. In case of absence of the adverb **loinə** ‘all’, the coordinator **ədugə** ‘and’ is not permitted to conjoin the two or multiple noun conjuncts. Instead of the coordinator **ədugə** ‘and’, the coordinator **əməsuŋ** ‘and’ is suitable in such case. On the other hand, the adverb may be replaced by a suffix **-su** ‘also’ which is just added to the final conjunct as in the examples given below.

3. tombə, məni, ram, sam, ədugə gopalsu cət^həre
 tombə, məni, ram, sam, ədugə gopal-su cət-k^hə -re
 Tomba, Mani, Ram, Shyam and Gopal-also go -DEF-PERF
 ‘Tomba, Mani, Ram, Shyam and Gopal also have gone’.

The insertion of the suffix **-su** ‘also’ indicates that the final noun conjunct also follows the action performed by the other conjuncts.

3. ədugə in verb coordination

In a coordinate structure with two verb phrases conjoined by the coordinator **ədugə** ‘and’, the two coordinands or conjuncts occur as a structure of ‘**VP ədugə VP**’ (VP =Verb Phrase; **ədugə** =and). This coordinate structure is similar with that of Sgaw Karen (a Sino-Tibetan language spoken in Burma). They have the structure **VP dɔʔ VP** (VP =Verb Phrase; **dɔʔ** =and) (Carol and Benson, 2004). The conjoining nature of the coordinator **ədugə** ‘and’ in Manipuri reveals that the two verb phrases are separated by it as in 4(a) and (b) below.

4(a). məhak məmai tat^hoki ədugə təit^hoki
məhak mə -mai ta -t^hok-i ədugə təi -t^hok-i
he 3PP-face wash-out-ASP and wipe-out -ASP
‘He washed and wiped out his face’.

(b). məhak cətk^hre ədugə lotk^hre
məhak cət-k^hə -re ədugə lot -k^hə -re
he go -DEF-PERF and hide-DEF-PERF
‘He has absconded and hidden away’.

In 4(a), the coordinator **ədugə** ‘and’ along with the two verb phrase conjuncts - **tat^hoki** ‘washed out’ and **təit^hoki** ‘wiped out’ constitute a coordinate structure explaining the actions in detail. The function of the first conjunct is performed well, that is, *washed out his face* and in which the presence of the coordinator **ədugə** ‘and’ indicates in detail what happened after the first conjunct occurred. similarly in 4(b), the first conjunct **cətk^hre** ‘has gone’ is coordinated by the coordinator **ədugə** ‘and’ with the last conjunct - **lotk^hre** ‘has hidden’, that is, the coordinator **ədugə** ‘and’ reveals in detail that the action of what is done next after the first conjunct of ‘his going’. This is different from that of the coordinator **əməsuŋ** ‘and’. The coordinator **əməsuŋ** ‘and’ simply indicates the conjoining of the two conjuncts without explanation of the happenings. Again in 4(b), the coordinator **ədugə** ‘and’ might conjoin the underlying sequences of structures such as **məhak cətk^hre** ‘he has gone’, **məhak t^hibə jabə t^hirure** ‘he has been traced out possibly’ **məhak p^həndre** ‘he can not be traced out’, then finally confirmed as **məhak lotk^hre** ‘he has hidden away’.

Unlike the coordinator **əməsuŋ** ‘and’ in the combination of two identical verb phrases, the coordinator **ədugə** ‘and’ seeks the addition of adverbs. Speakers of this language always use adverb just before the final conjunct of the two identical verb phrases as illustrated below.

5(a). iskimossiŋnə sa carəmmi ədugə həujiksu cari
iskimos-siŋ-nə sa ca -rəm -i ədugə həujik-su ca -ri

Eskimos-PL-ERG animal eat-COMPL-ASP and now -also eat-PROG
'Eskimos had eaten meat and also are still eating'.

- (b). hindusiṅnə krisnə niṅləmmi ədugə həujiksu niṅli
hindu-siṅ-nə krisnə niṅ -ləm -i ədugə həujik-su niṅ -li
Hindu-PL-ERG Krishna pray-COMPL-ASP and now-also pray-PROG
'Hindus had prayed Lord Krishna and also are still praying'.

In concatenation, the coordinator **ədugə** 'and' is withdrawn. In such a situation that unlike the use of the coordinator **əməsuṅ** 'and' (where intonation occurs when the coordinator is withdrawn), there is no question of intonation even if **ədugə** 'and' is withdrawn. It might be due to the presence of adverb **həujiksu** 'also now'. The concatenate constructions of sentences 5(a) and (b) are illustrated as in 6(a) and (b).

- 6(a). iskimossiṅnə sa carəmmi həujiksu cari
iskimos-siṅ-nə sa ca -rəm -i həujik-su ca -ri
Eskimos-PL-ERG animal eat-COMPL-ASP now -also eat-PROG
'Eskimos had eaten meat and also are still eating'.

- (b). hindusiṅnə krisnə niṅləmmi həujiksu niṅli
hindu-siṅ-nə krisnə niṅ -ləm -i həujik-su niṅ -li
Hindu-PL-ERG Krishna pray-COMPL-ASP now -also pray-PROG
'Hindus had prayed Lord Krishna and also are still praying'.

Identical verb phrase combinations in Wh-question reduplicate the Wh-question words both in coordination and concatenation. Also an adverb of time is inserted just after the coordinator **ədugə** 'and'. For instance, it is nothing done in the use of the coordinator **əməsuṅ** 'and'. Sentences in 7(a) and (b) below show the combination of the final clause and non-final clause of identical verb with Wh-question, where that very Wh-question word occurs twice in coordinate structure as well as in concatenate structure.

- 7(a). məitəisiṅnə kəri təurəmmi ədugə həujiknə kəri təuri
məitəi-siṅ-nə kəri təu-rəm -i ədugə həujik-nə kəri təu-ri
Meitei-PL-ERG what do-COMPL-ASP and now -ADV what do -PROG
'What had Meiteis done and what are they doing now?'

- (b). məitəisiṅnə kəri təurəmmi həujiknə kəri təuri
məitəi-siṅ-nə kəri təu-rəm -i həujik-nə kəri təu-ri
Meitei-PL-ERG what do-COMPL-ASP now -ADV what do -PROG
'What had Meiteis done and what are they doing now?'

- 8(a). suktəsiṅnə kədaidə ləirəmmi ədugə həujiknə kədaidə ləiri
sukte-siṅ-nə kədai-də ləi -rəm -i ədugə həujik-nə kədai-də ləi

-ri

Sukte-PL-ERG where-LOC live-COMPL-ASP and now -ADV where-LOC live-PROG

‘Where had Sukte lived and where are they living now?’

- (b). suktesiqnə kədaidə ləirəmmi həujiknə kədaidə ləiri
sukte-siqnə kədai-də ləi-rəm -i həujik-nə kədai-də ləi -ri
Sukte-PL-ERG where-LOC live-COMPL-ASP now-ADV where-LOC live-PROG
‘Where had Sukte lived and where are they living now?’

Final clause and non-final clause are juxtaposed as a concatenate structure in 7(b) and 8(b) above. The coordinate structures appear in 7(a) and 8(a) above where the two clauses are separated by the coordinator **ədugə** ‘and’ with the reduplication of wh-question words.

Both coordination and concatenation may be possible for some verb phrase combinations with different inferences. For different communicative purposes both are used in different contexts. Consider the following examples.

- 9(a). gilastu tare ədugə kaire
gilas-tu ta -re ədugə kai -re
glass-DEM fall-PERF and break-PERF
‘The glass fell down and broke’.

- (b). gilastu tare kaire
gilas-tu ta -re kai -re
glass-DEM fall-PERF break-PERF
‘The glass fell down and broke’.

- 10(a). ca lolle ədugə t^həke
ca lol -le ədugə t^hək -e
tea prepare-PERF and drink-PERF
‘Tea is prepared and has been taken’.

- (b). ca lolle t^həke
ca lol -le t^hək -e
tea prepare-PERF drink-PERF
‘Tea is prepared and has been taken’.

The forms of coordination in 9(a) and 10(a) seem to be used more frequently so as to report separate events or to explain the happenings in detail. That in 9(a), ‘how the glass broke’ is explained in detail i.e. by falling down, the glass broke itself. But the use of the coordinator **ədugə** ‘and’ instead of **əməsuŋ** ‘and’ explains in detail about how the glass broke and consequently it broke by falling down. This coordinate structure has the effect of downplaying the relationship between the two subparts of the event and it might

be chosen for social interaction or politeness consideration. For instance, someone may know that it was your favorite glass and may not want to break it. Similarly in 10(a), by the use of the coordinator **ədugə** ‘and’ explains in detail the happenings of events i.e. the effect of downplaying the relationship between the two subparts of the event ‘tea is prepared’ and then it has been taken. However, the use of the coordinator **əməsuy** ‘and’ simply reports the sequence of events i.e. ‘preparation of tea’ and ‘taking the tea’.

More frequently speakers of this language, on the other hand, use the coordinator **ədugə** ‘and’ in disguise instead of using it overtly in 9(a) and 10(a) above. Illustrative examples with regard to the use of the coordinator **ədugə** ‘and’ disguisedly appear in sentences 11(a) and (b) below.

11(a). gilastu tarəgə kaire
 gilastu ta -re ədugə kai -re
 glass-DEM fall-PERF and break-PERF
 ‘The glass fell down and broke’.

(b). ca lolləgə t^həke
 ca lol -le ədugə t^hək -e
 tea prepare-PERF and drink-PERF
 ‘Tea is prepared and has been taken’.

In surface structure, the coordinator **ədugə** ‘and’ is not overt in both the above sentences. But the underlying structures of the sentences in 11(a) and (b) can be as **gilastu tare ədugə kaire** ‘The glass fell down and broke’ and **ca lolle ədugə t^həke** ‘Tea is prepared and has been taken’. Consider more examples below.

12(a). məhak cak tokləgə t^hok^həre
 məhak cak tok -le ədugə t^hok -k^hə -re
 he rice finish-PERF and go out-DEF-PERF
 ‘He has taken food and went out’.

(b). k^həlləgə ŋaŋŋu
 k^həl -u ədugə ŋaŋ -u
 think-COMD and speak-COMD
 ‘Think and speak’.

(c). məhaksu pau tabəgə laki
 məhak-su pau tai ədugə lak -i
 he -also news hear and come-ASP
 ‘He also heard the news and came here’.

The use of the coordinator **ədugə** ‘and’ in disguise can be analyzed. By deletion of the portion **-ədu-** from **ədugə**, the rest portions **-gə** is added to the end of the first conjunct of the coordinate structure. In this case, the position of the coordinator **ədugə** ‘and’ stands alike Haspelmath’s logically possible type of monosyndatic coordination, [A Co] [B] (Haspelmath, 2004:6). In this formula, ‘A’ and ‘B’ stand for two conjuncts/coordinands, and ‘Co’ stands for the coordinator. But the structure becomes tripartite when the coordinator **ədugə** ‘and’ is overt. The logical possibility of symmetrical tripartite structure embodied by Haspelmath is [A] [Co] [B].

In sentences 11(a), (b) and 12(a), the first conjuncts are **tare** ‘fell down’, **lolle** ‘prepared’ and **tokle** ‘finished’ respectively. The rest portion **-gə** after the deletion of the first syllable **-ədu-** from **ədugə** ‘and’ is directly added to these first conjuncts and they become as **taregə**, **lollegə** and **toklegə**. After prolonged use, speakers of this language tend to utter as **tarəgə**, **lolləgə** and **tokləgə**, and still it is found both in speaking and writing. The process involved here is that the mid front vowel ‘e’ in **tare** ‘fell down’, **lolle** ‘prepared’ and **tokle** ‘finished’ assimilates to ‘ə’ to get **tarəgə**, **lolləgə** and **tokləgə**.

In the coordination of imperative sentence as in 12(b), the command marker ‘u’ from the first conjunct is deleted and on it added the rest portion **-gə** after the deletion of **-ədu-** from the coordinator **ədugə** ‘and’. Similarly, the command marker ‘o’ of the first conjunct in sentences (13) below is deleted and followed by the portion **-gə**.

13(a). cətləgə purəko
 cət-lo ədugə pu-rək-o
 go-COMD and bring-INCT-COMD
 ‘Go and bring it’.

(b). pau tarəgə lako
 pau ta -ro ədugə lak -o
 news hear-COMD and come-COMD
 ‘Hear the news and come’.

The use of the coordinator **ədugə** ‘and’ in disguise on the surface structure is more frequently in use than that of the overtly use of the coordinator **ədugə** ‘and’. But the underlying structure of the two sentences in (13) are given in (14) below.

14(a). cətlo ədugə purəko
 cət-lo ədugə pu-rək-o
 go-COMD and bring-INCT-COMD
 ‘Go and bring it’.

(b). pau taro ədugə lako

pau ta -ro ədugə lak -o
 news hear-COMD and come-COMD
 ‘Hear the news and come’.

4. ədugə in adjective modifier coordinate constructions

The coordinator **ədugə** ‘and’ is used in adjective modifiers coordinate construction. In such coordinate construction, adjectives being the modifiers are conjoined by the coordinator **ədugə** ‘and’ giving more detailed explanation about the sequence of events occurred. The combination of modifiers **əwabə** ‘be sad’ and **nuḡaitəbə** ‘be unwell’ conjoined by the coordinator **ədugə** ‘and’ in the sentence (15) below explains about the two conjuncts in detail that after the first conjunct **əwabə** ‘be sad’ is separated by **ədugə** ‘and’, an another event **nuḡaitəbə** ‘be unwell’ is added to the meaning of the first conjunct. Not only the ‘sadness’ of the first conjunct but also another similar situation ‘unwell’ of the last conjunct is indicated by the coordinator **ədugə** ‘and’.

15. əi əwabə ədugə nuḡaitəbə wari taniḡde
 əi ə -wa -bə ədugə nuḡai -tə -bə wari ta -niḡ -de -i
 I ATT-be sad-NZR and be happy-NEG-NZR story hear-wish-NEG-ASP
 ‘I don’t want to hear sad and unhappy story’.

But without explaining and separating the two conjuncts are juxtaposed in concatenation structure. In concatenation the two sequences of the events are put together without any grammatical morpheme inserted in between them. In short, the coordinate structure becomes coordinative compound. Two juxtaposed conjuncts are often treated as coordinative compounds (Haspelmath, 2004).

- 16(a). əi əwabə nuḡaitəbə wari taniḡde
 əi ə -wa -bə nuḡai -tə -bə wari ta -niḡ -de -i
 I ATT-be sad-NZR be happy-NEG-NZR story hear-wish-NEG-ASP
 ‘I don’t want to hear sad and unhappy story’.

- (b). məsa pabə əwaḡbə nupidu lake
 mə -sa pa -bə ə -waḡ -bə nupi -du lak -e
 3PP-body be thin-NZR ATT-be tall-NZR woman-DET come-ASP
 ‘The thin and tall woman came’.

- (c). əp^həbə ərubə isiḡ t^həkpe p^həi
 ə -p^hə -bə ə -ru -bə isiḡ t^hək -pe p^hə -i
 ATT-be good-NZR ATT-be clean-NZR water drink-NZR be good-ASP
 ‘It is good to drink pure and clean water’.

5. ədugə in adverb modifier coordinate constructions

The use of the coordinator **ədugə** ‘and’ in the combination of adverbs, being the modifiers in coordinate structure shows similar with that of adjective modifiers do. Adverbs, being the modifiers are conjoined by the coordinator **ədugə** ‘and’ in coordinate structure as well as they can be juxtaposed with no overt conjunction. Examples are given below.

- 17(a). tombə iŋlis p^həjənə ədugə niŋthinə ŋaŋŋi
tombə iŋlis p^həjə -nə ədugə niŋthi -nə ŋaŋ -i
Tomba English be nice-ADV and be well-ADV speak-ASP
‘Tomba speaks English well and nicely’.

- (b). tombə iŋlis p^həjənə niŋthinə ŋaŋŋi
tombə iŋlis p^həjə -nə niŋthi -nə ŋaŋ -i
Tomba English be nice-ADV be well-ADV speak-ASP
‘Tomba speaks English well and nicely’.

The coordination form, as in 17(a) is more likely to be used for reporting separate events, or for giving an explanation in detail. In this form, the nature of speaking English is indicated how well as well as how nice separately. However, for a single-event inference, the concatenation structure, as in 17(b), is preferred. The concatenation carries meaning that is not fully predictable; the meaning is not a compositional sequence of the meanings of the individual verb phrases that it comprises (Carol and Benson Craig, 2004).

6. ədugə in postposition modifier coordinate constructions

In Manipuri, postpositions being the modifiers are conjoined by the coordinator **ədugə** ‘and’ in coordinate structure. But this coordinate structure can not transform into concatenate structure since they do not constitute a conceptual unit, and when they occur together, they require the conjunction. Illustrative examples are given in sentences below.

- 18(a). nəŋgi nakəndə ədugə məniŋdə leppə misiŋdu əi k^həŋŋi
nəŋ-gi nakən-də ədugə məniŋ-də lep -pə mi -siŋ -du əi k^həŋ -i
you-GEN beside-LOC and behind -LOC stand-NZR person-PL-DEM I know-ASP
‘I know the person standing beside and behind you’.

- *(b). nəŋgi nakəndə məniŋdə leppə misiŋdu əi k^həŋŋi
nəŋ-gi nakən-də məniŋ-də lep-pə mi-siŋ-du əi k^həŋ -i
you-GEN beside-LOC behind-LOC stand-NZR person-PL-DEM I know-ASP

- 19(a). ləmbigi məjaidə ədugə mətai-də k^həmbə gariŋ pulisnə puk^hro
ləmbi-gi məjai -də ədugə mətai-də k^həm-bə gari-siŋ pulis-na pu-

k^hə -re

road -GEN middle-LOC and edge -LOC park-NZR vehicle-PL police-ERG bring-DEF-PERF

'Police has collected the vehicles parking at the middle and edge of the road'.

*(b). ləmbigi məjaidə mətaidə k^həmbə garisiŋ pulisnə puk^hro

ləmbi-gi məjai-də mətai-də k^həm-bə gari -siŋ pulis -nə pu
-k^hə -re

road -GEN middle-LOC edge-LOC park-NZR vehicle-PL police-ERG bring-DEF-PERF

Sentences 18(b) and 19(b) are unacceptable. The combining two conjuncts can not be juxtaposed since they do not constitute a conceptual unit and hence they require the coordinator **ədugə** 'and' as in 18(a) and 19(a).

However, in a situation, concatenation is also possible. The two postpositions, being the modifiers are juxtaposed when the two postpositions have contrary meaning to one another. In this sense they are treated as a familiar combination and hence they always go together. Examples are given as follows.

20. t^həbək^{tu} maŋ tuŋ jeŋnə təu

t^həbək-tu maŋ tuŋ jeŋ -nə tə-u

work -DEM before after look-ADV do-COMD

'Do the work for better consequence'.

21. ləmbigi jet oi k^həŋnə cətlu

ləmbi-gi jet oi k^həŋ -nə cət-lu

road -GEN right left know-ADV go-COMD

'Go knowing the right and left of the road'.

22. məhak t^hək k^ha jeŋnə wa ŋaŋŋi

məhak t^hək k^ha jeŋ -nə wa ŋaŋ -i

he up down look-ADV word speak-ASP

'He speaks knowing up and down'.

7. ədugə in postposition

The conjunctive coordinator **ədugə** 'and' can conjoin the two opposite clauses. In this typology of clause combination, either the first or the last clause is in negative or in opposite meaning as in 23(a) and (b) below.

23(a). tombədi lake ədugə mənidi lakte

tombə -di lak -e ədugə mənə -di lak -te -i

Tomba-DEM come-ASP and Mani-DEM come -NEG-ASP

'Tomba came but Mani did not come'.

- (b). əinə səŋŋom t^həkⁱ ədugə mək^hoinə kop^hi t^həkⁱ
 əi-nə səŋŋom t^hək -i ədugə mək^hoi-nə kop^hi t^hək-i
 I -ERG milk drink-ASP and they -ERG coffee drink-ASP
 ‘I drink milk and they drink coffee’.

Sentence in 23(a) contains a final negative clause **mənidi lakte** ‘Mani did not come’ which is in contrast to the non-final clause **tombədi lake** ‘Tomba came’. In sentence 23(b), the two clauses are in opposite utterance. To some extent the coordinator **ədugə** ‘and’ occurs at the beginning of the sentence. But it has underlying link to the aforesaid clause. In such constriction, sentences are not put into one. They look separate sentences, but they carry the underlying sense of linking the sentence as in the following instances.

24. məhak toni ni. ədugə mijamnədi tom hainə kəui
 məhak toni-ni. ədugə mijam-nə -di tom hai-nə kəu-i
 he Toni-COP. but people-ERG-DEM Tom say-ADV call -ASP
 ‘He is Toni’. ‘But people call him as Tom’.

In this example, the coordinator **ədugə** ‘and’ occurs at the initial position of the second sentences. In the first sentence ‘He is Toni’, the name ‘Toni’ is reflected in the second sentence as ‘Tom’ that is known to the people. Hence, the coordinator **ədugə** ‘and’ conjoins the aforesaid sentence with the sentence where it occurs initially. However, only the sentence that the coordinator **ədugə** ‘and’ begins can not be considered as a complete sense without the former sentence mentioned as in the following example.

- *25. ədugə mijamnədi tom hainə kəui
 ədugə mijam-nə -di tom hai-nə kəu-i
 but people-ERG-DEM Tom say-ADV call -ASP

The conjunctive coordinator **ədugə** ‘and’ does not function in sentence (25) as a complete thought. Without the sentence mentioned already speakers of this language do not use such sentence. This sentence indicates that there is a hidden sentence before it, without which the sentence alone can not give a complete thought.

8. Conclusion:

In this paper, we analyze Manipuri coordinator **ədugə** ‘and’ used for a range of functions. The use of the coordinator **ədugə** in coordinate constructions contrasts with that of juxtaposition. The single conceptual unit is encoded with a grammatical construction. When the combining two conjuncts are a familiar and conceptual unit with the high frequency of usage, an overt conjunction is not used. To some extent, both coordination and juxtaposition are possible for some verb phrase combinations with different inferences. Bisyndetic coordination does not occur with the conjunctive coordinator **ədugə** ‘and’.

Abbreviations:

ACC	accusative
ADV	adverb
AO	action orientation towards the limit
ASP	aspect
ASS	associative
ATT	attributive
COMD	command
COMPL	completive
CONJ	conjunction
COP	copulative
DEF	definitive
DES	desire
DEM	demonstrative
FUT	futurity
LOC	locative
NEG	negative
ERG	ergative
NZR	nominalizer
PERF	perfective
PL	plural
GEN	genitive
PROG	progressive
INC	Inceptive

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The Tamarind Plucker

V. Shoba, M.A., M. Phil., Ph.D. Scholar



“Amma, Can I pluck tamarinds for you?”, came the most familiar voice when Papamma was enjoying the beauty of her garden with the watering-can in her hand. Immediately she turned back to see who it was. It was none but the tamarind plucker, Pichandi, who lives beside

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her house. People lovingly call him Pichai. He usually plucks tamarinds, coconuts, jackfruits for all the people in the village, Kalaipuram.

Kalaipuram is a village peopled with a wide range of backgrounds. The people are known for their routine fight and quarrel, which start early morning especially at the public tap, which is at the center of the village, where women come to fetch water. Pichai's wife is also one among the women quarreling for the tap water.

Pichai earns his living doing petty jobs, and sometimes he runs errands for the people living there. The money he earns never reaches his family. It ends up in the hands of the arrack shopkeeper in the outskirts of the village. He spends it for his drinks and blabbers the whole night calling the passersby for a duel. But the people in the village have to depend on him for plucking fruits because there is no one to do this job. He plucks tamarinds every season for all and particularly for Papamma.

Papamma loves to grow trees and cultivates flowers in her garden. One can see a bed of balsams stretching from her gate to her house with colourful flowers in red and white. In her garden, there are tamarinds, papayas, coconuts, pomegranates, guavas, jackfruits and mango trees. She loves gardening and loves her trees as her own children. Being gifted with four children - two daughters and two sons - she considers it a boon to have her garden as another.

It was a Saturday evening. The tamarind plucker opened the gate and stirred into the garden of Papamma repeating the same phrase: "Amma, can I pluck tamarinds for you?" He has used this phrase many a time. But this time, did it sound strange with hidden intent or mocking or simply the result of the overnight hangover?

"Amma, can I pluck tamarinds for you?," the same voice recurred to make it clear to her what he wants to rave about. Coming out of the fantasy she had been enjoying in the midst of her roses, marigolds, jasmines, hibiscus, and balsams, Papamma, herself demanded, "What do you want?"

"Amma, can I pluck tamarinds for you?," the tamarind plucker mumbled the same words.

“Of course, you can,” said Papamma. “And when are you going to start the work?” she continued.

“Amma, I can do it for you tomorrow... but... I ...b-u-t... I need hundred rupees today. Amma, will you kindly give me? S-u-r-e-l-y, surely I will come and do it for you...,” the tamarind plucker stammered. His speech seemed to cringe for money.

Papamma left her gardening tools there and stepped out of her garden slippers into her house. She came back with the money and handed it over to him without any hesitation.

He said, “Amma, think the work is done”. He left her hoping.

Days went by. His words remained only words, but no action. When Papamma called him for the work, he procrastinated. “Amma, don’t worry! I will come and pluck the tamarinds,” saying this he would put on a mysterious expression, which Papamma hated. Even this she could tolerate but the very sight of the fruit-borne tamarind trees caused in her a great deal of pain, which she could not express through words.

The tamarind trees were brimming with the ripened fruits. They often fell down from the trees swayed by the force of the wind and the breeze. As rain poured, the tamarinds were washed away and some were found buried in the soil. Some fruits were soaked by the water and the edible fruits, used for preparing curry by Papamma, were of no use. She agonized, only when the tamarind fruits are plucked and removed from the trees, can the magnificent tree bring forth new flowers and fruits. Till then the tree cannot bear any new fruit. Looking at the trees in such a helpless condition her heart ailed and sometimes her heart palpitated with warm breathing air. His act not only irritated her but also led her to cursing him within. She hated that she stooped too low to curse another human. She had the feeling of an albatross tied round her neck. Often she blabbered: “God will see to it.”

Papamma slowly became weak and ill always thinking of the tamarind tree. She stood at the gate to see if she could find the tamarind plucker passing by. She often saw the hallucination of the tamarind plucker when she saw the sight of any men moving on the street. She thought it was Pichai and called a man passing by on the road “come Pichai, pluck my tamarinds”. The

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man answered: “No Amma, I’am Govindan”. And added “You don’t know what happened to Pichai?, Amma!”, the man exclaimed.

Amma became curious. She asked “What? What happened to him? Where is he now?”

Govindan is the chief of the village. He is the first person to know whatever happens in the village and around. He used to sit in the temple and chat with the people who have nothing to do and who are retired. When Govindan says something it must be the correct information.

“Amma, Pichai drank a lot and fought with Karuppan yesterday. Karuppan pushed him down and twisted his leg and now Pichai is admitted in the Government hospital, at Ulvanchari.” And continued saying, “The doctor says he can never climb trees in his life.” Giving her the information, Govindan parted.

Papamma saw him leaving. The sun was setting. The sky was in golden orange and Papamma looked at the sky and then agonized. The night was long and dark, with humans and tamarinds dangling around.

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Treatment of Violence: A Study of Morrison's *The Bluest Eye* and *Beloved*

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A

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Treatment of Violence: A Study of Morrison's The Bluest Eye and Beloved

DECLARATION

This is to certify that the material embodied in the present work, “**Treatment of Violence : A Study of Morrison’s *The Bluest Eye and Beloved*,**” is based on my original research work. It has not been submitted in part or full, for any other degree or diploma of any other university.

My indebtedness to other works has been duly acknowledged in relevant places.

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Chapter-1

Introduction

Toni Morrison is one of the well-known Afro-American female writers. Along with the prestigious Pulitzer Prize, she also received Nobel Prize for literature in 1993. Her novels have received wide recognition not only from the common reader but from the critics and reviewers as well. A vast range of critical acumen has been spent on her fiction. Her novels have been subjected to multiple readings. In fact, there is no dearth of critical material on Toni Morrison. However, there are areas such as treatment of violence which, as it seems, call for a more thorough and incisive examination than has been done so far.

The Bluest Eye, her first novel, for example, has been read variously by different critics. Several trends immediately become perceptible as one reads the existing critical material. For example, Wilfred D. Samuels and Clenora Hudson Weems¹ in their essay, "The Damaging Look: The Search for Authentic Existence in *The Bluest Eye*," argue about the authentic existence. Their main point is that people can only live authentically, if they define themselves as they are. The paper also examines the cause of Pecola's tragedy with Sartrean perspective in mind. Their conclusion is that though the external forces are responsible in determining character, it is the individual who is largely responsible for his or her authentic or inauthentic existence.

Jennifer Lee Jordan Heinert² introduces another trend in the essay “Novel of ‘Education’: Bildungsroman and *The Bluest Eye*”. Here, the writer places the novel in the tradition of Bildungsroman writings with the conclusion that *The Bluest Eye* does not qualify for the claim of Bildungsroman novel, in fact, it is an anti-Bildungsroman writing. Here, the narratives of the various characters end not with fulfilment or self-actualisation as it happens in Bildungsroman writings. Here, the narratives of various characters such as Cholly, Soap Head Church, Geraldine and Pauline are interrupted by racism which denies any growth in them. Since all the major characters come from the marginalised stratum, so they are excluded from the conventions which define the traditional Bildungsroman writings. Even the narratives of Pecola and Claudia also end with madness and rejection.

In the essay, “Invisible Name and Complex Authority in *The Bluest Eye*: Morrison’s Covert Letter to Ralph Ellison,” John N. Duvall³ introduces yet another perspective or approach in his study of the novel. The writer argues that the Letter written by Soap Head Church to God can be read as Morrison’s Covert Letter to Ralph Ellison. Here, the links are first established between Morrison and Claudia and then Claudia is further equated with Soap Head Church. The main focus of the author is to prove that Cholly’s rape of his daughter is feminist revision of Jim Trueblood’s accidental rape of his own daughter in *Invisible Man*. The focus of the writer is to highlight that Morrison has done something which was left out by Ellison. Here, she listens and records the voice of silent victim. The essay also focuses on the issue of authorial identity and authentic existence.

Morrison's outlook is deemed as immature in the essay, "*The Bluest Eye: The Need for Racial Approbation*" by Doreatha Drummond Mbalia. Here, the central point of argument is that in early stage of her career Morrison considered "racism"⁴ as chief enemy of the Africans. But, this does not mean that she neglects the issue of class. However, her focus is on the "skin colour" (p.31), instead of "capitalism" (p.31). The primary focus of racism instead of classism is "dialectically related to inorganic structure" (p. 33), of the novel. Morrison has used various "artificial props" (p. 33), here to develop her theme, a fault which she overcame in her later writings.

Then, there are reviews which highlight the constructional and stylistic merits and demerits. For example, Haskel Frankel in "*The Bluest Eye*" argues that Morrison is "lost in her construction"⁵ but there are some entertaining and captivating scenes as well. In fact, the review treats merits and demerits "flaws and virtues"(p.4.) alike. Similarly, L.E. Sissman in the review of the novel calls it as "dossier"⁶ of various characters. Then, the review also points out how a few black characters lived in fantasies by imitating the white. The occasional lapses made by Morrison during narration, such as use of "false and bombastic line" (p.5) and playing with the orders of the name as, "the real name of Soaphead Church is given as both Elihue Micah Whitcomb and Micah Elihue Whitcomb" (p.5).

Though, a few Indian critics like Hari Prassna in his essay, "Racial Discourse in Toni Morrison's *The Bluest Eye*," has studied the novel from the standpoint of racial oppression, his focus is on psychological damage wrought upon the negroes by the dominant white standards. But, he also points out how

the black themselves are also responsible for their own suffering. Pecola is maltreated by her community as well as by her own parents. He concludes with the words that “Pecolas”⁷ of this world can survive only if the black community starts loving its own self.

In short, there is no scarcity of critical material on *The Bluest Eye*. But, amidst a vast range of interpretations what is conspicuous by its absence is the lack of an in depth study of the theme of violence in the novel. Critics have certainly touched upon this aspect, but in a rather passing manner. Their focus is largely on the psychological violence directed on the black by the dominant culture. Moreover, the novel has been read from feminist, Marxist, psychoanalytical standpoints. Now, all these readings surely touch the concept of violence, but in a limited way. Gender studies focus on the violence perpetrated on women. Marxist studies focus their attention on the class conflict. The psychoanalytical studies are devoted to the internal damage done by racial stereotypes. In other words, they do not deal with the theme of violence in totality with its various nuances and consequences in depth. The present study is an attempt to fill some of the gaps perceptible in the existing critical studies.

Like *The Bluest Eye*, *Beloved* is also subjected to multiple readings. Here also, various trends can easily be identified. For example, there are critics like Marilyn Sanders Mobley⁸ who in her essay, “A Different Remembering: Memory, History and Meaning in Toni Morrison’s *Beloved*,” and Bernard W. Bell⁹ who in his essay, “*Beloved*: A Womanist Neo-Slave Narrative; or Multivocal Remembrances of Things Past,” have argued that *Beloved* is the

extension of the slave narratives. The only difference being that the focus of Toni Morrison is on the psychological disintegration along with physical devastation wrought upon the slaves. In her essay, Mobley argues that the earlier narratives were linear and were replete with eye-witness accounts of external incidents of torture and agony. On the other hand, *Beloved* is non-linear in narration and also probes in the psyche of the ex-slaves. She also performs an inter-textual study of *Beloved* and the *Black Book* and The slaves' narratives by Douglass and Jacobs. Bell argues that if earlier narratives were univocal in voice, then *Beloved* is multivocal in voice. If earlier narratives were narrated from men's perspective, then *Beloved* presents a womanist perspective, with special concentration on the inner life of a slave woman.

Then, there are the critics like Wilfred D. Samuels and Clenora Hudson-Weems¹⁰, who, in their essay, "Ripping the Veil': Meaning through Rememory in *Beloved*" have touched on another dimension, that is the search for wholeness. Their line of argument is based upon Sethe's and Paul D's quest for wholeness and fulfilment which both of them achieve at the end. The writers have also touched on the aspects of myth, colours and numbers in the novel. They also talk about how this novel is also an improvement upon the slave narratives.

A few scholars like Susan Bowers¹¹ along with Josef Pesch¹² have made an apocalyptic and Post-apocalyptic reading of the novel. Bowers in her essay, "*Beloved* and the New Apocalypse," has argued that *Beloved* can be situated in apocalyptic tradition, not of American novel, but of Afro-American novel. Her major point is that apocalyptic novel has forward looking tendencies, but

Beloved is backward looking, though it contains the other features such as: four horsemen and an anti Christ figure which are the hallmark of apocalyptic literature. Josef Pesch in his essay, “*Beloved: Toni Morrison’s Post-Apocalyptic Novel*,” goes one step forward. He locates *Beloved* in post-apocalyptic tradition with the view that the novel can be categorised in post-apocalyptic tradition since the major apocalypses had already transpired 18 years before when 124 was approached by four horsemen, including the school teacher, a nephew, a slave catcher and a sheriff.

Yet another group of critics like Ashraf H.A. Rushdy¹³ in his essay, “Daughters Signifying History: the example of Toni Morrison’s *Beloved*,” and Linda Krumbolz in the essay, “The Ghosts of Slavery: Historical Recovery in Toni Morrison’s *Beloved*,” have argued how Toni Morrison tries to revive the past which is an essential part of the present. Rushdy focuses chiefly on the daughters; Beloved and Denver, to show how they represent two aspects of history: oppression and joy, forgetfulness and remembering, unforgiving and loving. His main aim is to prove that Toni Morrison wanted to give an artistic and proper burial to those who were unburied, or at least unceremoniously buried. Morrison, according to him, wanted to remember so that forgetting may become possible. He also stresses that this novel revives the African tradition of storytelling in which memory and articulation are pivotal for the sake of self-understanding and self-claiming. On the other hand, Lind Krumbolz directs her attention upon equating “personal trauma”¹⁴ with “national trauma” (p.80). Her point of consideration is also that past is inevitable, its beating back is almost impossible. The repression of personal trauma is as much debilitating as the

suppression of the national suffering. History can rescue the individual from present pain, agony, suffering and torture.

There are also certain critics who focus their studies on the stylistic and linguistic merits of the novel. For example, Roger Sale¹⁵ in his article, “Toni Morrison’s *Beloved*,” extols the verbal texture of the novel. For him, Morrison has the capacity to trap her readers in her linguistic maze in such a way that unless the readers reread the text, meaning is vague. Similarly, Harold Bloom in his “Introduction” to *Viva Bloom’s Notes: Toni Morrison’s Beloved* also writes that *Beloved* can be properly understood, if placed in the tradition of writers like Faulkner, Virginia Woolf and Cormac McCarthy because Morrison shares affinities with these writers. Ralph Ellison, Alice Walker and Toni Cade Bambara do not contribute much in understanding Morrison as writer. Zora Neale Hurston also differs from Morrison in her mode and vision. He further argues that *Sula* and *Song of Solomon* are Morrison’s masterpieces. On the other hand, *Beloved* and *Jazz* are the novels in which political propaganda gets better of arts. For him, *Beloved* is problematized by Morrison’s prophetic and political vision. He also highlights that the task of categorising *Beloved* in one category is difficult since his own acquaintances are divided. For some, the novel is a “masterwork”¹⁶ and for others it is “supermarket literature” (p.8).

The theme of motherhood is brought home by scholars such as: Elizabeth Fox Genovese¹⁷ and Stephanie A. Demetrakopoulos¹⁸. Fox in her essay, “Unspeakable things unspoken: Ghosts and Memory in *Beloved*,” grounds her argument on the point that the slavery as an institution imperilled both the sexuality and the motherhood. A mother was even denied the right to

nurture her own offspring. Relating her study of the *Beloved* to Jacob's *Incident in the Life of a Slave Girl*, she points out that *Beloved* is more explicit in its exposition of the havocs which slavery wreaked upon women. In Jacob's case reviving the past *in toto* was risky, but for Morrison it is a necessity. Whereas Stephanie in her essay, "Maternal bonds as Devourers of Women's Individuation in Toni Morrison's *Beloved*," points out that the mothering can also be hazardous for the growth of an individual. Her chief concern is to prove that Sethe in mothering her children forgets or annihilates her own sense of self. However, Pamela E. Barnett¹⁹ in her essay, "Figurations of Rape and the Supernatural in *Beloved*," drives readers' attention towards the issue of violence. Though her study circumscribes the broad issue of violence unto sexual harassment still her canvas is broadened by her discussion not only of the whites perpetrating sexual violence on the black, but also by her highlighting the way in which the black subjugate the members of their own community by dragging them in an incestuous and homosexual relationship. She also mentions the ramifications of the sexual violence.

What all these critics have done is that either they have neglected the theme of violence completely or if they have touched it, they have not dealt with it in its wide implications. Most of the critics have either spoken about physical violence or sexual violence perpetrated on the black by the white. A few of them have also taken into account the sexual harassment directed against the black by the black or physical violence heaped on the Africans by Africans. At a few places, the emotional violence inflicted on the black by the white has also been given its due. But still, there are aspects which have been ignored by the

critics either completely or in parts, such as verbal violence and the consequences of the phenomena of violence.

Before a detailed discussion of Morrison's novels: *The Bluest Eye* and *Beloved* is undertaken, it will be pertinent to understand the concept violence. In the words of Neelam Rathee, "The world today is undergoing a revolutionary transformation. The present millennium began with dangerous conflicts raging in various parts of the globe. We are confronted with problems not only related to global security but also human security."²⁰

Aditi Sharma also maintains, "Every now and then we read new pieces about riots across the world, nations having wars, several attacks across the nations, whether it is in the form of an attack on Indian parliament or an attack on World Trade Centre in U.S. . No country in this world ranging from the strongest to the weakest is left untouched from the ghastly impact of violence."²¹

It is a fact, not of today but of all times, not of India but of the whole world, that violence has been the chief point of discussion not only among political and religious representatives but among literary artists as well. In fact, violence is as ubiquitous as love and other emotions are.

Wikipedia, the free encyclopaedia, defines it as, "violence is a use of physical force to cause injury, damage or death. The word violence covers a broad spectrum. It can vary from a physical altercation between two being to war and genocide where million may die as a result."²²

Rajbir Singh explains violence as an escalated form of conflict.

According to him: "Conflict may be defined as escalated natural competition

between two or more parties about scarce resources, power and prestige, where as violence could be defined as form of severely escalated conflict. It occurs when two opposing parties have interest or goals that appear to be incompatible which can occur anytime.”²³

Anderson and Bushman have their own concept of violence. They differentiate it from aggression. For them, aggression is, “Behaviour intended to produce deliberate harm to another and violence having extreme harm as its intent. Violence can be defined as the physical attack on one person or group by another in the context of aggressive behaviour.”²⁴

Clements observes in this context, “Violent processes flow from the arbitrary exercise of coercive power, threat and force, insecurity (fear and anxiety), marginalization (control, isolation and enmity) and violence.”²⁵

Guneeta Chadha describes violence in relation to art. She writes: “If art is the creative force of the mind, violence is the destructive force of the mind.”²⁶

According to Ilfeld: “ violence as an act of intense, willful, physical harm committed by an individual or a group against himself or another individual or group.”²⁷

Megargee defines violence as: “ overtly threatened or overtly accomplished application of force which results in the injury or destruction of persons or property or reputation, or the illegal appropriation of property .”²⁸

Feshbach explains violence as: “the more severe forms of physical aggression.”²⁹

As Megargee rightly points out, “No definition of violence has ever proved completely successful. Although everyone ‘knows what violence is’ no

one has ever been able to define it adequately so that every possible instance of violent behavior is included within the definition while all the excluded behavior is clearly non-violent.”³⁰

However much wider and inclusive definition of the concept violence is provided by the World Health Organization, according to which violence is explained as, “The intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community that either result in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation.”³¹

What all these definitions tend to highlight is that the violence is distorted human behaviour. It is a response or retaliation to a person, a group or a situation. It is a desire to hurt, injure, harm or kill anyone. In other words, if any word, any gesture, any action is loaded with the intention of hurting or injuring the recipient, it is deemed as violent. It is misuse of power, a misappropriation of force, it is misapplication of strength in a negative way. It reveals malicious instincts of men. It establishes an affinity between man and animal. It exposes primitive and barbaric instincts of a human being. It is an assertion of power and desire to dominate in a brutal way since violence occurs when either of the two groups or persons refuses to comply with the ideas of the other.

Broadly speaking, there are many forms of violence, but most prominent and widely accepted are: physical, sexual, verbal and psychological. It is very difficult to draw lines between these forms. All of them tend to overlap and intersect each other. For example, physical violence can be considered as a

substitute for sexual violence. Similarly, sexual violence cannot take place without hurting the physical self. Then physical, sexual and verbal violence always affect the psyche in one way or the other. Yet, an effort can be made to distinguish them from one another.

Physical violence can be described as the use of power to hurt or damage someone's body, partially or *in toto*, like hitting someone with a stick, killing with a gun or beating with hands etc. Sexual violence is the use of one's force or position to gain sexual advantage or pleasure from unwilling or unconsenting others, like rape, forced prostitution or fellation and many more. Similarly, verbal violence is the use of language in sarcastic, satiric or abusive way that hurts the listener, for example, to abuse or to criticise someone. Psychological violence can be described as a way of hurting someone's emotions, feelings and sense of worth. It also refers to a state of fear of being victimized or hurt by others, for example, the fear for actual separation from one another by force, to disrespect or disobey someone or hoax or cheat someone etc.

Literature, as a mirror of human actions and emotions, has always reflected the wide range of human experiences, including violence along with love and other emotions. Somdatta Mandal makes a germane observation when he writes, "Apart from agreeing with W.B. Yeats that literature is created out of the quarrels with ourselves, we believe that literature is also created in times of upheaval when one is assaulted physically, emotionally and psychologically from all quarters."³²

Gulshan Rai Kataria also speaks the same when he comments: "literary activity always follows a period of crisis. Well that's what Matthew Arnold

said, that the political upheavals and cataclysmic events have always sent human imagination into a spin. Turbulence and catastrophes, personal or social, relating to the country or the community, make man look both within and around him at what man has made of man and his civilization.”³³

He further argues, “The epics of the *Ramayana*, the *Mahabharata*, the *Iliad* and the *Odyssey* of the ancient times have had wars and rampant violence as the stomach of their gripping narratives or the crux of their themes. The civil war in the U.S. , The French Revolution, the two world wars, the partition of the Indian sub-continent have been such powerful events as to shake the lives of many, shatter families and subvert faith in the goodness of man.”³⁴

A vast range of books have been written with the theme of violence as their background. The writers like Hemingway, Heller, Khushwant Singh, Richard Wright, Baldwin, Alice Walker and Toni Morrison have produced literature with violence as a theme.

In the fiction of Toni Morrison, one comes across variety of themes. In fact, she has a vast knowledge of human nature. Her writings present not only love in various forms, such as love between mother and children, husband and wife, between two friends, grandparents and grandchildren and love among neighbours, but violence in its various kinds as well, such as racial violence, gender violence, class violence, violence against elders and child abuse. Now, all these forms of violence are manifested vividly in her novels, *Beloved* and *The Bluest Eye*.

As far as physical violence is concerned, there are numerous examples, such as, Sethe’s act of infanticide. Actually, Sethe, along with her mother-in-

law and four children, was staying in 124. One day, she saw the school teacher approaching the yard of 124 with a Sheriff, a nephew and a slave catcher. Sethe knew very well that the ex-master would take her and her children with him and they would be condemned to live the life of slavery once more. The idea of going back agitated her. She had had the first-hand experience of being a slave on a plantation owned by the white master. She immediately became active, picked a handsaw and beheaded one of her daughters. She planned to do it with each of her children, but she was stopped before she could do it.

Similarly, in *The Bluest Eye*, there are many scenes where the characters hurt each other physically. For example, there is a scene describing the physical battle between Mr. and Mrs. Breedlove. On a morning, Mr. Breedlove was provoked by his wife. He pounced at her at once in response. There was exchange of blows betwixt them. At last, Mrs. Breedlove got a chance of attacking her husband with a stove lid top that hurled Cholly into the state of unconsciousness.

Likewise, sexual violence is also present in Morrison's novels in abundance. For instance, in *Beloved*, Ella, an ex-slave, was kept as prisoner in a room for several days and was sexually exploited by the father and the son. As a result, she also gave birth to a child whom she refused to nurture. Similarly, in *The Bluest Eye*, Henry, a new paying guest in MacTeer's house, misbehaved with Frieda. When Frieda was all alone in the house, Mr. Henry came to her, went down on his knees, touched her arms and then pinched her tiny breast.

No less perceptible is the verbal violence in Morrison's fiction. For instance, in *The Bluest Eye*, young boy sarcastically asked a question to Pecola

that she was not able to answer. In fact, she feels so bad and hurt that she could not utter a word. They teasingly say, “Black e mo. Black e mo. Yadaddrleepshelked.”³⁵

Similarly, in *Beloved*, Nelson Lord asked a question to Denver that almost marred her spirits and put an end to her visits outside 124. He inquired sarcastically whether her mother went to jail and was she along with her.

Apart from physical, sexual, verbal violence, Morrison also depicts psychological violence in her narrative world. For example, in *The Bluest Eye*, Pecola is injured psychologically by almost everyone she comes across. Her mother does not trust her, her father rapes her, her brother does not take her with him, her classmates make fun of her, a shopkeeper does not notice her, her best friends, Claudia and Frieda, also start avoiding her. One can easily imagine the plight of this poor girl who has no one in this entire world to play with except an imaginary friend. Likewise, in *Beloved*, Paul D’ hurts Sethe’s emotions. First, he comes back in her life, shares his grief with her and listens to her as well, chases the baby ghost out of 124, takes her and her daughter to a carnival and even asks her to be pregnant for him. When everything seems to be moving in the right direction, he jilts her comparing her with an animal with the words that she had two legs not four.

After understanding what violence is and what are its various kinds, it is essential to understand the forces that might have compelled Morrison to write on such a theme in such details and depths. What are the shaping influences that make her select such a theme? There appear to be three major factors

responsible for her choice of this subject- the family she was born in, the books she read and the race she belonged to.

As Carmen Gillispie points out, “Toni Morrison’s family had a profound influence on her development as a writer. Morrison spent a great deal of time with her extended family, particularly with her maternal grandparents.”³⁶

In fact, Morrison’s grandparents, paternal as well as maternal, left the South and came to stay in the North. Morrison’s maternal grandfather was deceived by the white people, which prompted him to take his family out of the Southern states which were more hostile towards the black. Ron David observes in this connection: “Her mother Ramah Willis Wofford, came from Albama, but after those white Southern gentlemen cheated Ramah’s father out of his property- all 88 acres- Mr. John Solomon Willis decided he’d had enough of the South, thank you, and walked his family North through Kentucky and on up in to Ohio.”³⁷

Not only her mother came from Albama but her father George Wofford also came from Georgia. Now, both Albama and Georgia were slave states, quite famous for lynching and other types of tortures inflicted on the slaves, such as the use of iron collars, iron bits and chain gangs. In fact, Morrison’s father witnessed three lynching in Georgia before he came to settle in the North. Carmen Gillespie opines in this connection: “The family’s move may also have been motivated by three lynching of African-American men that occurred in the town. Witnessing these injustices may have left a lifelong impression on George Wofford.”³⁸

Now, all these incidents might have influenced Morrison's temperament. Either on dinner table or during certain other family gatherings, Morrison's grandparents and her father certainly might have apprised her about all acts of cruelty and violence. After listening to such tales, Morrison certainly might have realised that life for her parents, more particularly her father and grandparents, was not an easy one. They had to swallow bitter pills for their survival. That's why, incidents like lynching and many more in which the white direct miseries on the black, become the stuff of her fiction, more particularly in *Beloved*.

Apart from the tales which she might have listened, she also had first-hand experience of the racial violence. Ron David³⁹ narrates an incident which occurred when Morrison was a child and which reveals the racial prejudice resulting in physical violence. He records that one day Morrison's father threw a white man down from stairs. Actually, he suspected that the white man was guilty of chasing Chloe and her elder sister. So, he first threw that man and asked questions afterwards. Being a participant in this entire drama, Toni Morrison, surely, might have learnt a lot. She, surely, might have noticed that no race was ready to receive ignominy at any cost.

Yet another incident of the racial violence, in which Morrison was herself a sufferer, occurred when she was a child. Morrison also had to face the law of racial segregation. Lisa R. Rhodes explains the entire incidents as: "While segregation laws were not as prevalent in the North, African-American still faced discrimination in housing, employment, and the use of public facilities. For example, Chloe, her siblings, and other blacks in Lorain, were not

allowed to swim in Lake Erie during the summer, while whites enjoyed the lake whenever they wanted to.”⁴⁰

Now, this incident, certainly may have forced Morrison to think as to what was wrong with her. Was she not human? Why was she denied certain privileges while others enjoyed them frequently? All these questions find concrete expression in *The Bluest Eye* where the central character, Pecola, faces the same problem of denial and invisibility.

Apart from the biographical influences, Morrison was, most probably, influenced by the books which she read. Lisa R. Rhodes⁴¹ explains that Morrison read the writers like Dostoyevsky, the author of *Crime and Punishment* and Tolstoy, the author of *War and Peace*. Apart from these, Morrison read Gustavo Flaubert, the author of *Madame Bovary* and Jane Austen, the author of *Pride and Prejudice*. All these books deal with violence in one form or the other. For example, *Crime and Punishment* is the story of murders and forced prostitution. Similarly, *War and Peace* as the title itself suggests, is the tale of duels and injuries received in war. Likewise, *Madame Bovary* is the painful narrative of a woman named Emma who is exploited by her lovers. *Pride and Prejudice* does not deal with violence in its physical or sexual forms. Still, one can agree that violence is also present there in a different way. Almost all the female characters live under a constant pressure exerted on them by patriarchy. They are endlessly traumatized by the idea of getting married soon. In other words, they suffer the pangs of anxiety till they are married. Now, the reading of the theme of violence in these various forms

certainly might have left a deep impression on Morrison's psyche. That's why, perhaps, she deals with this theme in depth.

Another influence on Morrison was her race. Every person belongs to a particular race. Every race has particular experiences which are peculiar to that particular race. These experiences become part of collective memory and sink deep into the unconscious of the members of that race. These experiences are passed on by one generation to another, both vocally and in written form. These experiences differentiate one race from the other.

Morrison belongs to Afro-American or the black race. The black in America have their own history. Since their arrival in America, they have witnessed violence in various forms. They were captured by force from the African coasts. Then, the condition, they faced on the slave ships, were also very excruciating. They were chained and beaten like animals. After arriving in America, they were sold to the highest bidders and were taken to the plantations where they worked from dawn to dusk.

Morrison, being a member of such a race, might have heard these horrific tales from her ancestors. Moreover, she also edited *The Black Book*, an account of the life as it was lived by the black for the last 300 years. These experiences surely must have inspired Morrison to depict the theme of violence in her fiction. *Beloved*, her fifth novel, is a graphical account of such an experience, peculiar to the black. Sumana Chakraborty aptly observes:

African American literature, or the literature produced by the black American descent differs from the Euro American literary tradition most significantly in

its thematic concerns. The peculiarities of the African American experience essentially contribute to a distinctive exploration of issues like identity and gender politics, effects of slavery and racism, and the celebration of the unique aspects of the African American cultural heritage in the works of these writers. However, along with these primary thematic concerns, an important subtext of nearly all the seminal African American literary texts has been the issue of violence because violence was the essential weapon that was used to forcibly create this unique American community.⁴²

To conclude, it can safely be asserted that the theme of violence is as important as the theme of love is in Morrison's novels. As has been mentioned earlier, Morrison did not have to excavate hard layers in order to find substance. The family, she was born in, the literature, she read and the race, she came from provided her ample content for her writings. However, one should remain conscious about the fact that the presentation of the theme of violence does not reduce her novels to mere series of sensational events. She deals with this theme in such a way that it becomes an integral part of her art, as will be evident from the discussion in the following chapters.

As has been mentioned earlier, this dissertation is a modest attempt aimed at filling up the gaps which have been left by the critics in existing critical material. The study consists of four chapters. The first chapter is devoted to the analysis of the existing critical material on the novels: *Beloved* and *The Bluest Eye* along with the theoretical framework of the concept of violence, the shaping influences which propelled her to deal with such a theme have also been mentioned. Second and third chapters are devoted to a detailed analysis of

the theme of violence as depicted in the novels: *The Bluest Eye* and *Beloved* respectively. The last chapter is the summing up of the entire argument which will be followed by a detailed bibliography.

Notes

¹Wilfred D. Samuels and Clenora Hudson Weems, "The Damaging Look: The search for Authentic Existence in *The Bluest Eye*," *Toni Morrison* (New York: Twayne Publishers, 1990).

²Jennifer Lee Jordan Heinart, "Novel of 'Education': Bildungsroman and *The Bluest Eye*," *Narrative Conventions and Race in the Novels of Toni Morrison* (New York: Routledge, 2009).

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Chapter-2

Treatment of Violence in *The Bluest Eye*

The Bluest Eye (1970) is Morrison's first novel. It announced her arrival in literary arena, though it did not receive a positive response at the hands of few critics. For some, it is an expression of undeveloped vision of the world. For others, its style is faulty. Whatever may be the views of the learned critics, the fact remains that the novel truthfully examines the life as it was actually lived by the Afro-Americans in the 1940s.

The first half of the twentieth century, which provides the novel its setting, was no less different from that of the nineteenth century when slaves were mercilessly beaten or exploited. Now, in the twentieth century, though constitution did not permit slave trade and slave beating, this does not mean that the life of negroes in the USA was not free from tortures and agonies. The white, the masters, still considered themselves as superiors and still continued the process of subjugating the black. The only difference between the preceding century and the contemporary one was that the means of hurting the Africans became more subtle and more psychological. *The Bluest Eye* truthfully examines the entire process of subjugation and suppression of the black at the hands of the white. Apart from exposing the plight of the Negroes in the USA, the novel also sets out to explore the way in which some Afro-Americans exploited the members of their own race under the impact of racial hegemony.

The novel also unfolds how a few individuals direct their anger and frustration at others who are below them in status and power because they cannot raise their voice against their exploiters who are in any case superior to them.

As far as the white inflicting violence on the black is concerned, there are numerous instances of it in the novel. The white, who in the 1940s, were in majority and formed the dominant culture, exploited the Afro-Americans with their words and deeds. The black who were excluded from the main stream felt almost castrated at the cruelty of the masters. They could not do anything but comply with the wishes of the white. For example, when Cholly is enjoying with Darlene in an open field, he is apprehended by two white men who first direct the flash light on Cholly's back and ask him to continue the act with the words, "I said, get on wid it. An' make it good, nigger, make it good." ¹

This incident damages Cholly's psyche completely. It leaves a lifelong scar on his mind. It makes him realize that he is powerless in the society dominated by the white. According to Wilfred D. Samuels and Clenora Hudson Weems: "Cholly, too, is bruised in a visual confrontation that involves the negating glance of 'the Other'." ²

Similarly, Pauline, Cholly's wife, experiences the racial violence while working for a white mistress as a maid. Drunken Cholly arrives there to demand money. At this, the enraged mistress threatens to call police. Later, she tells Pauline to forsake her husband. She denies Pauline her eleven dollars which she owes to her. She is adamant in her demand that until Pauline leaves her husband, she will not receive the money. As a result, Pauline has to leave the

job, heartbroken. In this way, the white mistress inflicts economic injury also on the black lady, Pauline Breedlove.

This entire process of subjugation of the black by the white leaves the black psychologically crippled. This makes them think whether they exist in this world as human beings or not. They are constantly reminded of their marginality. In order to sustain their domination, the white, after the demise of slavery, propagated their own stereotypes concerning beauty. One who qualifies the test as prescribed by the masters is deemed beautiful, and one who fails is considered ugly. In this way, the white hurt or harm their black objects in a subtle psychological way. Their myth regarding beauty includes “blue eyes, blonde hair and white skin.”³

Some black characters in the novel are constantly haunted by their own ugliness. They crave to be beautiful. They long for acceptance and acknowledgement by the white, but they fail because they are not biologically white. For example, Pecola Breedlove, the central character of the novel, prays frequently to God every night without failure for the blue eyes.

She thinks that if she had blue eyes, things would have been different. She would have been taken along by Sammy, her brother, loved and recognized by her peers and her parents would not have quarreled before her. She is considered ugly by everyone she encounters. The boys on the playground tease her by calling her black. Her teachers do not glance at her and ask only when everyone is required to speak. She sits all alone on a double desk in the class. The shopkeeper, Yacobowski, does not notice her as if she does not exist at all. Geraldine looks down on her and expels her from her house. Even, her mother

thinks her to be an ugly child at her birth. Now, all these incidents tend to plant the seeds of inferiority in Pecola's heart. After receiving such a treatment, she might have felt as if she was an outcast or a pariah. She might certainly have thought that it was her colour which was responsible for such a neglect. It is not that she is ugly, but the fact is that she comes from a section of society that is perceived to be inferior. Had she come from the dominant section of the society, that is the white, things would have taken a different turn altogether. Literally, she is not ugly, but the prevailing stereotypes regarding the colour of skin, eyes and hair never let her imagine herself as beautiful.

When Pecola's father, Cholly Breedlove, sets his own house on fire, she is taken in by MacTeers. There she gulps three quarts of milk from Shirley Temple mug only to gaze at the image of pretty, beautiful Shirley Temple whose image is carved inside the mug. Similarly, she ingests Mary Jane candies in the hope of becoming beautiful. Morrison remarks in this context: "she eats the candy, and its sweetness is good. To eat the candy is somehow to eat the eyes, eat Mary Jane. Love Mary Jane. Be Mary Jane"(p.38).

Wilfred D. Samuels and Clenora Hudson Weems also comment: "Set in a small Midwestern town in Lorain, Ohio, during the Depression, *The Bluest Eye*, tells the story of Pecola Breedlove, who, hating her black self, yearns for blue eyes she believes will make her white, extinguish her position as pariah, and give her the love and security that are desperately missing from her life." ⁴

In order to get the blue eyes, Pecola goes to Soaphead Church and is ready to perform the rituals prescribed by him. Haskel Frankel aptly observes; "In this scene, in which a young black on the verge of madness seeks beauty and

happiness in a wish for white girls' eyes, the author makes her most telling statement on the tragic effect of race prejudice on children.”⁵

Not only Pecola, but the entire Breedlove family considers itself to be ugly. Morrison categorically writes: “you looked at them and wondered why they were so ugly; you looked closely and could not find the source. Then you realized that it came from conviction, their conviction. It was as though some mysterious all-knowing master had given each one a cloak of ugliness to wear, and they had each accepted it without question” (p. 28).

The characters have internalized this myth of ugliness in such a way that they start hating themselves. They imitate the ways of the white community. For example, Geraldine, a coloured woman, teaches her son about the differences between the coloured and the niggers. For her, the coloured are akin to the white. Similarly, Pauline, Pecola's mother, dresses and combs herself like the white Hollywood actresses whom she has seen in magazines. L.E. Sissman astutely verbalizes this as: “here again we see, as the overriding motif of this book, the desirability of whiteness, or, as the next-best thing, the imitation of whiteness; as a corollary, blackness is perceived as ugliness....”⁶

As the white harm the black, so do the black in return. They perpetrate violence on the white, though in lesser degree. As has been mentioned earlier, the Africans are excluded from the wider culture. They do not own power. Hence, their reaction or retaliation is not very often explicit and open. That's why, not many negroes are depicted in the novel as reacting violently. In fact, many of them accept their fate silently. But, there are a few characters like Claudia and Frieda who exhibit a spirit to revolt. For example, when Frieda and

Pecola are behind the bushes, and Rose Mary, a white girl shouts for Mrs. MacTeer, complaining against the girls. At this, Claudia gets annoyed and scratches Rose Mary's nose. Similarly, Claudia exhibits her spirit of questioning against the standards set by the white when she is given the white baby dolls as Christmas present. In order to see where lies the beauty of the white baby dolls, she dismembers them. Likewise, Frieda conveys to Claudia that when Rose Mary told her that her father would be taken to jail, she beat her hard. In this way, the black also return violence back to the white, though in lesser proportion.

Yet another instance where one notices racial violence is an attack made by three prostitutes on a Jew. Actually, upstairs on the store front where Pecola lived, there lived three black prostitutes named: Mary, China and Polland. Once, they got hold of a Jew, dragged him upstairs, pounced on him all three at once and looted whatever they found and threw that man out of the window.

Other than the racial violence, the novel also contains instances of intra-racial violence where the members of one community inflict tortures on the members of their own community. In the novel, *The Bluest Eye*, readers find the black directing violence on other blacks. It seems astonishing that in a society where the negroes are already oppressed by the dominant culture, instead of helping each other, the Africans are seen damaging and hurting their own brethren.

As has been mentioned earlier, the black were precluded from the main stratum. They had no say in politics, religion and economy. They were helpless or powerless before the white who emasculated or castrated them

metaphorically. The black could do nothing before the masters. This makes Cholly reflect after being destroyed by two white men that he could not react against them since they were white, powerful and armed, on the other hand, he was black, ugly and poor. Now, the Africans carry such frustration and helplessness to home where they see the members of their family who remind them of their own blackness and of their own exclusion, helplessness and frustration which sprout in them a feeling of self-abhorrence. It is this self-loathing that finds its way out in the form of physical, sexual, verbal and emotional aggression.

Nellie Mackay rightly argues: “the book examines the experiences of a young black girl as she copes with the ideal of beauty and the reality of violence within the black community. Within the novel Morrison demonstrates that even with the best intentions, people hurt each other when they are chained to circumstances of poverty and low social status: “violence” says Morrison, “is a distortion of what, perhaps, we want to do.” The pain in this book is the consequence of the distortion that comes from the inability to express love in a positive way.”⁷

The novel is rich in the examples of physical violence within the black community. For instance, Cholly Breedlove and Pauline Breedlove are shown as quarrelling in a horrible way. Cholly came home too drunk to fight. So, the battle was postponed for the next morning. Mrs. Breedlove, in the morning, demanded from Cholly to fetch her some coal. Cholly was not interested in helping his wife. As a result, Mrs. Breedlove emptied a pot of cold water on her husband. Cholly stood at once and was on his wife in no time. Both of them fell

on the ground. Cholly put his leg on her breast. He also slapped her many a time on her face. She also, on her part, reciprocated in the best possible way. Very soon, she found an opportunity to slip away and gather a stove lid top which she hurled at Cholly in such a way that it almost knocked him down, but not before Cholly had received blows from his son, Sammy, as well.

Actually, Cholly has lived a life of deprivation and denials. At his birth, he was abandoned by his mother, his nurturer aunt, Jimmy, also died when he was very young, and then his father also disowned him. He has not seen a happy married life throughout his career. He has also lived an unrestrained life. His wife demands from him to be an indulging and a caring husband and father which he cannot be because he has not known anything like this in his life. Moreover, he is not very successful in his life. So, when he is provoked, all his frustration comes out in the form of violent actions.

Yet another instance of physical violence is seen when Pecola receives beating from her mother. Actually, Claudia and Frieda went to see Pecola at her mother's work place. There, Pauline invited both the girls inside the house and asked them to wait in the kitchen with Pecola till she returned with laundry. Pecola, by chance, tilted the pan full of boiled blue berries and the entire juice was spilled on the ground. Pecola's feet were scalded. Mrs. Breedlove, after noticing this, responded violently. She knocked Pecola down mercilessly and chased all three of them out. This is how Morrison describes the entire episode: "in one gallop she was on Pecola, and with the back of her hand knocked her to the floor. Pecola slid in the pie juice, one leg folding under her. Mrs. Breedlove

yanked her up by the arm, slapped her again, and in a voice thin with anger, abused Pecola directly and Frieda and me by implication” (p.84).

Actually, Pauline lived in a house which was full of chaos and disorder. Since her childhood, she had a predilection for arranging things in order. In the white’s household, she got an opportunity to perform this task. She could not do this at her own house because perhaps there she was reminded of her own ugliness. In the master’s house, she was referred as Polly, a nick name, she desired from her childhood. Moreover, they often say that Polly is the best servant, they have ever got. There she is in charge of the kitchen and does not leave till everything is arranged in order. Now, when this order is disrupted, she perhaps cannot tolerate this. Perhaps, she is worried about what the masters will think of her and there is danger of losing the job. That’s why, she transfers her entire love and affection onto the white girl and beats her own daughter severely.

Besides physical violence, the novel also contains instances of sexual violence in the black community in abundance. For example, Cholly rapes his own daughter. On a Saturday afternoon, Cholly returned home drunk and saw his daughter busy with the dishes. She was bending over the sink and with her toe was scratching her calf. When Cholly saw her, he was at once reminded of his wife’s gesture which was exactly the same when he first met her. At that point of time, Cholly was free, no mother, no father, no great aunt, no blue Jack and no one to answer to. Now, Cholly was again free. He was drunk, almost out of his senses. He was the man who no longer cared for his family, his house, his wife and his children. He was free to do anything then, he was free to do

anything now. Moreover, he also reflected on the present state of his daughter. He thought why she was so unhappy and he himself, so helpless. It was exactly the same experience that he had when he was caught by the two white men during his first sexual escapade with Darlene.

He could do nothing then, and he was helpless now. He wanted to love his daughter, but as Claudia, the narrator remarks, “his touch was fatal” (p.163). The rape of Pecola by her father certainly precipitated Pecola’s journey towards madness because this rape left her pregnant and as a result, she was disowned or excluded by the entire black community.

Likewise, Cholly’s sexual intercourse with his wife, can also be considered violent. As Pecola recalls at one place how Cholly acted in bed. Cholly made sounds as if someone held him tight. On the other hand, Mrs. Breedlove made no sound at all. Similarly, Mrs. Breedlove also recalls that her sexual relationship with her husband has become mechanical. There was no enthusiasm of the past. Cholly, as has been mentioned earlier, was a frustrated man. He was a failure in life. Perhaps, his wife had become merely a body for him, which he played with at his own will. And the result of all this was that he started considering his wife’s body as an object on which he unleashed his frustration and anger either through physical beating or through sexual exploitation.

Other than physical and sexual violence, the novel also reveals instances of verbal violence as inflicted on the black by the black. Here the Afro-Americans speak sometimes satirically or teasingly and sometimes in a condescending manner. Their utterances are so powerful and scathing that they

almost shock the listeners. For example, Maureen Peal shouts arrogantly at Pecola, Claudia and Frieda as, “I am cute! And you ugly! Black and ugly black mess. I am cute!” (p.56).

The words uttered by Maureen Peal were so powerful that they might have accelerated Pecola’s journey towards disintegration.

Geraldine is yet another character who speaks in such patronizing way that her words make Pecola realize her inferiority. In the words of Wilfred D. Samuels and Clenora Hudson Weems; “the most damaging intra racial confrontation related to colour, however, involves Pecola and an adult, Geraldine, whose life is defined by her efforts to escape the ‘Funk’.”⁸

Pecola was invited by Geraldine junior to his house. There he threw his cat on her. Later on, he noticed that the cat was not hurting Pecola, that’s why he spun the cat and threw it towards the window and the cat died. Mrs. Geraldine then came there and he held Pecola responsible for this. Geraldine, who hates niggers, shouts at Pecola as, “Get out,” she said, her voice quite. “You nasty little black bitch. Get out of my house” (p.72).

At this insult, Pecola felt so ashamed that “she held her head down” (p.72) and moved homewards. The black inflict violence on the members of their own race not only physically, sexually and verbally, but emotionally as well. They hurt the emotions of each other frequently. In this kind of violence, it is Pecola again who is victim of everyone she encounters. To quote Wilfred D. Samuels and Clenora Hudson Weems: “Pecola experiences the most damage from intra racial prejudice, however at the hands of her abusive, negligent parents.”⁹

One expects emotional comfort from one's parents, but when parents are bent on destroying their children, there can be no worse enemy. The same holds true in the case of Pecola. She is damaged more by her parents than by others. For instance, her mother prefers a white girl instead of her own daughter, takes her out of school, does not talk to her and even does not trust her. Similarly, her father does not take good care of her. In fact, he ends up raping her.

Like Pecola, Cholly Breedlove also suffers emotional violence at the hands of his parents. He is abandoned on a junk heap by his mother before he is four days old. His father also considers him a deputy of someone to whom he owes money. One can easily imagine how a child might have felt after such a rejection. Pauline Breedlove, likewise, is also the victim of the negligent treatment that she receives at home. She was the ninth child out of eleven children. There was no nickname, no anecdotes, no one took notice of her predilections. In this way, she suffered the pangs of loneliness.

The novel not only unfolds the violence perpetrated by men on humans but it also unravels the violence inflicted by man on the animals. Actually, a few individuals receive harsh treatment from their elders or superiors. They feel ignored, neglected and despised. They cannot retaliate against the perpetrators. Their frustration gets directed, hence, on the animals which their elders love so dearly. The victim, in such cases, considers his act of harming the animals as an act of vengeance and justice. In fact, they register their revolt against the authorities (parents, elders or superiors). One such instance is that of young Geraldine junior. On one occasion, he invited Pecola in his house and threw the cat on her. In fact, his mother prefers the blue eyed cat to him. He feels

neglected and isolated. Now, he cannot fight against his mother who not only prefers the cat but also forbids him to play with the niggers. As a response to such a treatment, he beats the cat frequently and on that occasion too, noticing that the cat is not hurting Pecola in any way, he grabs it with his hind legs and spins it round and round over his head. Pecola moves forward to make him halt, but as she goes for the hand which was spinning the cat, she along with him falls down. The cat is released in mid-motion and is flung against the window. Later, the cat falls down in the radiator and dies. In this way, by hurting the cat and inviting the nigger, Pecola, in his house, he gives vent to his frustration and acts against his mother's wish.

The theme of violence, as has been dealt with by Morrison, shows a pattern of cause and effect. Morrison deals not only with the phenomena of violence but also depicts how it affects various aspects of life. The major consequence of the violence, as has been presented in the novel, is disintegration of the families. The characters inflict pain and suffering on their own family members in such a way that they are no longer in a condition to live together. For example, Cholly Breedlove puts his own house on fire without thinking about the plight of family members afterwards. As an upshot, the family members get scattered. Mrs. Breedlove stays with the white for whom she works. Cholly is taken to jail. Sammy is taken in by a family and Pecola comes to live with MacTeers. To quote John Duvall: "life in the Breedlove household is anything but restrained. The ritualized violence of Cholly and Mrs. Breedlove relation emotionally scars their children, who repeatedly witness parental fights...." ¹⁰

The result of all this is that Sammy is told to have run away from his house twenty-seven times by the time he is fourteen years old and Pecola prays to God to make her disappear.

Another outcome of violence, as depicted in the novel, is loneliness. When the violence is unleashed on the characters, they are immediately thrown into the world of isolation. For example, when Cholly goes to meet his father, his father refuses to recognise him. In fact, he remains busy with his game of cards. Cholly was already alone in this world. His mother, his aunt and his mentor were no longer with him, and now his last hope was also completely destroyed when his father almost ignored him. At this, Cholly must have felt all alone in this world since he had no place to go from here. Likewise, Pecola's fate does not differ from that of her father. Disowned by her mother, abused by her classmates or peers, expelled by Geraldine, neglected by Yacobowski, misused by Soaphead Church, rejected by the entire community and shunned by her best friends, Claudia and Frieda, Pecola feels so lonely that she imagines herself talking to an imaginary friend and is ultimately driven into the world of madness.

Yet another effect of violence, as presented in the novel, is loss of identity. The white set such high standards of beauty that are impossible to attain for the black. The Americans and the Europeans are born with the white skin. In a country where the white are in majority and where to be white skinned is considered to be beautiful, it becomes almost next to impossible that the black will be considered someday beautiful. As D. D. Mbalia opines, "The African's self-image is destroyed at an early age as a result of a ruling class (i.e., the

Europeans capitalist classes) promotion of its own standards of beauty: long, stringy hair, preferably blonde; keen nose, thin lips; and light eyes, preferably blue. By analogy, if the physical features of the Europeans are accepted as the standards then the Africans must be ugly.”¹¹

There are many Afro-American characters in the novel who believe these standards to be absolute. They judge themselves in relation to these standards and as a result, they find themselves ugly. Hence, they lose their own identity. For example, Pecola wants to look like Shirley Temple, an icon of beauty. She fervently prays for the blue eyes which will make her not only beautiful but also acceptable in the racist society. W.D. Samuels and C.H. Weems maintain, “Pecola, a young girl, in quest of womanhood, suffers an identity crisis when she falls victim to the standard set by an American society that ascribe what is beautiful to a certain image of white women.”¹²

Similarly, Pauline also tries to behave like the white actresses. When she realizes that she nowhere fits on the scale of beauty, she, in order to gain acceptance, becomes an ideal servant. There she is not only respected but admired as well because that is how the black women are perceived by the white. In this way, she tries to become what she is actually not. To quote Jennifer L.J. Heinert: “Pauline, who has learned what she believes is the true definition of beauty from her education at the movies, realizes she will never fit that definition and therefor hides herself in the narrative of the ideal servant.”¹³

The violence inflicted on the characters also puts an end to their growth. J.L.J.Heinert,¹⁴ in her study of the novel as a Bildungsroman novel, writes that the novel more justly qualifies the test of anti-Bildungsroman novel. Since, all

the characteristics of Bildungsroman writing are defined by the dominant culture and hence, they can aptly fit only to the characters coming from the main strata. In *The Bluest Eye*, all the major characters come from marginalized section, that's why their growth is hampered by racism. Instead of ending with self fulfillment and completeness, their narratives end in disaster. For example, Cholly, when forced to copulate with a girl for the white men's pleasure, feels humiliated and castrated. His growth stops there and then. Earlier his life was characterized by zest and enjoyment. He used to learn things from his friends and admired a person named Blue Jack. But now, the exploitation which he has to undergo, undermines his growth. It bruises his psyche leaving him helpless and impotent. Similarly, Pecola, who exhibits the talent of decoding the world around her, fails miserably when she encounters racism. The neglect, she receives at the hands of various persons in her life, leaves her mad and isolated at the end.

The theme of violence has been delineated by Morrison in such a way that when the characters heap violence on the other characters, they tend to constitute a pattern of contrasts. For example, there are two groups of parents in the novel, the first consisting of Mrs. and Mr. Breedlove and the second of Mr. and Mrs. MacTeer. Mr. Breedlove rapes his own daughter more than once. Mrs. Breedlove beats her daughter and does not trust her. The violence which is directed by the parents on their daughter drives her a step closer towards insanity. They present themselves as unprotecting and uncaring parents. On the other hand, when Frieda, the youngest daughter of the MacTeers, is assaulted notoriously by Henry, Mrs. and Mr. MacTeer are infuriated. Mr. MacTeer hits

Henry with the cycle and even shoots at him. Mrs. MacTeer beats Henry with a

broom. In this way, they use violence not to harm their daughter, but to protect her and thus they emerge as protecting and caring parents.

Traits of the white characters are also unmasked through the theme of violence. The white are presented as authoritative and inhuman. For example, when the white men compel Cholly to continue the sexual act for their amusement, they reveal themselves as uncivilized and hedonist. Likewise, a white lady who forces Pauline to forsake her husband if she wants to continue working in her house, reveals herself as a stone hearted and unsympathetic kind of lady.

Morrison has also unfolded her outlook on the world around her by dealing with the theme of violence. In fact, she seems to be suggesting that the life does not offer flowers all the time. There are difficulties and obstacles on the path as well. Now, in America, the Afro-Americans are confronted with the question regarding their identity. The problem before them is how to define themselves. There are two possible solutions as presented in the novel. The first is that of surrendering oneself completely to the notions of the wider culture. People within this attitude start considering themselves either as misfits or begin to imitate the ways of the white. For instance, Pecola believes herself to be an ugly child who will only be happy if she is granted the blue eyes. Only then, she feels, she will become acceptable in the society. Pauline, Pecola's mother, also surrenders her true self and first tries to imitate the white Hollywood actresses and later becomes a servant in the house of the rich white. As a servant, she gains recognition and acceptance because she is still subordinate to the white. Geraldine, also, tries to define herself by going away from her African roots.

She believes that she is a coloured lady who may be less than the white, but certainly more than the niggers. These characters are always traumatized by the existing standards, according to which they are the outcasts.

Wilfred D. Samuels and Clenora Hudson Weems¹⁵ point out another group of characters who live happily as they are instead of trying to become what they are not. For example, Claudia, who is a young girl like Pecola, does not run after the white baby dolls and the blue eyes, she does not want to eat candies so that she might become sweet and pretty like the beautiful images which are printed on them. In fact, she dismembers the white baby dolls which she receives as gifts. She is happy with what she is and what she has. Likewise, three prostitutes, who live above Breedlove's apartment, do not hate themselves for being black. In fact, their hatred is directed outwards. As John Duvall shrewdly observes; "their conversation is a running critique of the sexual politics of middle class convention, even as they recognize their own follies and implication. And their identity clearly does not depend upon men whom these women hate."¹⁶

Similarly, the community of women who visited Aunt Jimmy when she was on her death bed, also spent their time cheerfully. Their life was also characterized by troubles and misfortunes. They also come from the black race, but they never grumble about it. In fact, when one of them, Aunt Jimmy, is about to die, they become agile. They bring food for her. One of them even reads Bible to her. In fact, they participate actively in the funeral rites of Aunt Jimmy. In a nutshell, these are the characters who plant their own "garden of Marigold."¹⁷

They judge themselves not by the standards set by others, but by their own selves. That's why, they are happy.

Last, but not the least, the way the writer has dealt with the theme of violence also has its own moral and aesthetic impact. It arouses feelings, such as: pity, sympathy, appreciation and disgust in the hearts of the reader. For instance, one sympathizes with Pecola when she suffers at the hands of everyone, she comes across. Pecola's mother, Mrs. Breedlove, also wins the sympathy of the readers when she is asked by a white mistress to forsake her husband. Likewise, one feels pity for Pecola's father, Cholly Breedlove, when he is forced to copulate in front of the white for their pleasure. Similarly, one appreciates Claudia when she tries to react against the oppressive system by rejecting its norms of beauty. Likewise, one feels disgust for the white characters more particularly for white men and a white mistress who exploit Cholly and Pauline without a solid reason. In this way, the theme of violence, as presented in the novel, enables the writer to produce cathartic effect for the reader.

It is evident from the above discussion that Morrison has dealt dexterously with the theme of violence. Here, one meets the white characters inflicting torture and pain on the black. Not only this, the Afro-Americans also are presented as equally responsible for the misfortunes of the members of their own race. Then, there are other characters who unleash their anger not on the cause of it, but on someone else (animals or any other subordinate). The novel also examines the upshots of the violence as it is inflicted on the characters resulting in their psychological disintegration.

Notes

¹Tonni Morrison, *The Bluest Eye* (rpt. 1979; London: Vintage Books, 1999), p.116. All subsequent textual references have been quoted from the same source and their page numbers have been mentioned immediately after them within the parentheses.

²Wilfred D. Samuels and Clenora Hudson Weems, “The Damaging Look: The search for Authentic Existence in *The Bluest Eye*,” *Toni Morrison* (New York: Twayne Publishers, 1990), p.27.

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Treatment of Violence: A Study of Morrison’s The Bluest Eye and Beloved

³Ibid., p.10.

⁴Ibid., p.11.

⁵Haskel Frankel, "The Bluest Eye," *Toni Morrison: Critical Perspectives Past and Present*, ed. Henry Louis Gates, Jr. and K.A. Appiah (New York: Amistad Press, 1993), p.3.

⁶L.E. Sissman, "The Bluest Eye," *Toni Morrison: Critical Perspectives Past and Present*, p.5.

⁷Nellie Mckay, "An Interview with Toni Morrison," *Toni Morrison: Critical Perspectives Past and Present*, p.397.

⁸Wilfred D. Samuels and Clenora Hudson Weems, p.12.

⁹Ibid., p.13.

¹⁰John N. Duvall, "Invisible Name and Complex Authority in *The Bluest Eye*: Morrison's Covert Letter to Ralph Elison," *The Identifying Fictions of Toni Morrison: Modernist Authenticity and Post modern Blackness* (New York: Pal Grave, 2000), p.44.

¹¹Doreatha Drummond Mbalia, "The Bluest Eye: The need for racial Approbation," *Toni Morrison's Developing Class Consciousness* (Solinsgrove: Susquehanna University Press, 1991), p.29.

¹²Wilfred D. Samuels and Clenora Hudson Weems, p.11.

¹³Jennifer Lee Jordan Heinart, "Novel of 'Education': Bildungsroman and *The Bluest Eye*," *Narrative Conventions and Race in the Novels of Toni Morrison* (New York: Routledge, 2009), p.22.

¹⁴Ibid.

¹⁵Wilfred D. Samuels and Clenora Hudson Weems.

¹⁶John N. Duvall, p.45.

¹⁷Wilfred D. Samuels and Clenora Hudson Weems, p.30.

Chapter-3

Treatment of Violence in *Beloved*

“Here,” she said, in this here place, we flesh; flesh that weeps laughs; flesh that dances on bare feet on grass. Love it. Love it hard. Yonder they do not love your flesh. They despise it. They do not love your eyes; they’d just as soon pick em out. No more do they love the skin on your back. Yonder they flay it. And O my people they do not love your hands. Those they only use, tie, bind, chop off and leave empty.

Toni Morrison¹

“Once, the time was,” he said, “that I cried all night. What’s the matter? What’s the matter? Matter enough. The next morning my child was to be sold, and she was sold; and I never ’pected to see her no more till the day of judgement. Now, no more that! No more that! No more that! With my hands against my breast I was going to my work, when the overseer used to whip me along. Now, no more that! No more that! No more that! ... We’s free now, bless the Lord! [Amen! Amen! said the audience.] They can’t sell my wife an’ child no more, bless the Lord! [Glory! Glory!] No more that! No more that! No more that, now!”¹

Lerone Bennett Jr.²

Valerie Smith aptly observes, “physical pain has no voice, but when it at last finds a voice, it begins to tell a story.”³

Beloved is such a story of pain, suffering and atrocities. It is the saga of the black men whose backs were lacerated by the white men. It is the tale of the black women who were manhandled by their white masters. It is the woeful narrative of the African mothers whose milk was pilfered from them. Margaret Atwood remarks in this context; “ This new novel is set after the end of the civil war, during the period of so called Reconstruction, when a great deal of random violence was let loose upon blacks, both the slaves freed by Emancipation and others who had been given or had bought their freedom earlier.”⁴

In the novel, *Beloved*, Morrison depicts the violence inflicted on the black by the white. But, there are also instances where torture and suffering are perpetrated on the white by the members of their own race. Then, there are scenes where the Negroes not only resist but retaliate in violent ways. Quite like the white, the black also do not spare their own black counterparts. They inflict atrocities on the members of their own community. But, the white behaving with violent disposition toward s the black is preponderant in the entire novel.

The white hurt or injure the black in many ways. The Africans are whipped, sexually assaulted and separated from the members of their own family quite frequently. In other words, physically, sexually and psychologically, the Negroes are harmed or smothered by the white masters. Physical violence is deployed as a strategy by the white to intimidate the Africans in America. The black were abducted by force from their own land by the Europeans. Their main target was to use them as cheap labour. Now, in order to instil their domination, they use physical force to ensure that there is no resistance or revolt. They believe in the dictum might is right. This makes the

school teacher convey to Sixo when the latter tries to outwit the former:

“Definitions belong to the definers-not the defined” (p.225).

Whenever any slave becomes recalcitrant, he is punished savagely. Any reaction or retaliation is deemed as blasphemy by the masters which results in the most severe punishment i.e. death. For example, Sixo is tied to a tree and shot and burnt later. Paul A is also hanged on a tree with his torso. Paul D is first iron collared and a bit is planted in his mouth. Sethe, similarly, is flogged ruthlessly when she grumbles against the stealing of her milk before Mrs. Garner. *Beloved* also divulges in her recollections of her past life that when she, along with her mother, was picking flowers, she was forcefully kidnapped and was brought to America in the most unhygienic of circumstances. The food and water which was provided to the Africans on the slave ships was adulterated. The list seems endless. The white left no stone unturned in beating, whipping and mutilating the skin of the black slaves.

Not just physical tortures were used as means of suppression, but sexual tortures were also quite frequent. The master took undue advantage of the female bodies who were working under them. In fact, the violence which was directed against the black women was greater than that directed against the black men. Elizabeth Fox Genovese astutely maintains; “Since the nineteenth century, it has been common to assert that slavery was necessarily worse for women than for men, since they were subjected to special brutality and indignity on account of their sex.”⁵

The pretext which was in the background of this sexual violence was the same. The Europeans wanted complete domination and control over their slaves.

For this, they even reduced not only the black men, but black women too to a thing or toy with which they played in accordance with their own will. And *Beloved* is replete with numerous instances of this kind. In the words of Pamela E. Bennett, “while Morrison depicts myriad abuses of slavery like brutal beatings and lynching, the depictions of and allusions to rape are of primary importance; each in some way helps explain the infanticide that marks the beginning of Sethe’s story as a free woman.”⁶

Sethe slew her own daughter because she knew pretty well that to be a woman in the times of slavery was a cardinal sin. She herself was subjected to this brutal assault. She was held down by two young boys, one held her down while the other thieved her milk. Ella, an ex-slave, was similarly kept in a room and was maltreated by the father and the son for several days. Baby Suggs, the mother-in-law of Sethe, had to barter herself in order to ensure that her third born might not be auctioned away from her. Not just that, even Sethe’s own mother, as Nan told her, was, along with her shipmates, constantly taken up by the crew.

Sethe also had to surrender her body to an engraver in order to engrave ‘Beloved’ on the tomb of her dear daughter. Then, there are surmises in the community after Beloved’s advent that she is the same woman who was rumoured to be imprisoned by a white man and who ran away when the white man was found dead. To believe that only the black women were sexually exploited will only be half-truth. Even the black men had his hard time when he was required to satisfy the unnatural whims of the masters. For example, Paul D, along with other members of the chain gang, is required to fellate the white

guard, and on mere watching this, he pukes out. Pamela E. Barnett notes many such examples in her study of the novel. She also remarks: “Morrison depicts rape as a process by which some white men keep some black women and even some black men in state of fear.”⁷

Besides physical and sexual violence, the white masters also inflicted emotional violence on their black objects. The known indigenous black in America were also mangled psychologically. The masters played with the emotions of their black slaves. First, the negroes were segregated from their lands, their tribes, their culture, their people and their language and then whatever community they entered in during middle passage was also mercilessly knifed. In the words of Margaret Atwood: “The slaves are motherless, fatherless, deprived of their mates, their children, their kin. It is a world in which people suddenly vanish and are never seen again, not through accident or covert operation or terrorism, but as a matter of everyday legal policy.”⁸

The novel provides numerous examples to prove this fact. For instance, Baby Suggs had eight children, but she was never given any chance to keep any one of them. The only one she kept the longest was her eighth child, Halle, who in 1855, when Sethe arrived in 124 at Blue Stone road, was either missing or dead. She remembers that her first two babies, who were girls, were sold away from her during their infancy. She got no time even to wave her hands at them. Morrison categorically writes : “Anybody Baby Suggs knew, let alone loved, who hadn’t run off or been hanged, got rented out, loaned out, bought up, brought back, stored up, mortgaged, won, stolen or seized” (pp.27-28).

Similarly, Paul D, Paul A and Paul F, who were three half-brothers, same mother but different fathers, were also insulated from one another whenever the occasion demanded. For instance, first this trio was procured by Mr. Garner and brought to Sweet Home. After the demise of Mr. Garner, lady Garner sells Paul F in order to clear the debts. Likewise, the school teacher's act of selling Paul D to another white owner, is an example of psychological damage inflicted on the black slaves. The novel reminds the reader of the famous words of Chinua Achebe⁹, spoken by Oberika that the white man had put a knife on the things which held them together and they have fallen apart.

The white community not only exploited the black, but the men of their own race as well. The condition of penurious white man was not better than that of the Africans. They were also subjected to a similar sort of injustice. Amy Denver of Boston can be cited as an illustration. Wilfred D. Samuels and Clenora Hudson- Weems¹⁰ draw reader's attention to this fact. For them, there are many similarities between Sethe and Amy. Both are fugitive slaves, motherless, uneducated, tired, un-neat, uncombed and barefoot. Amy's mother was a slave who worked on the plantation only to pay for her passage. Amy is rumoured to be the upshot of the copulation between the master and the slave mother. Amy, like Sethe, has faced physical beating as she confesses: "I had me some whippings, but I do not remember nothing like this. Mr. Buddy had a right evil and too whips you for looking at him straight. Sure would, I looked right at him one time and he hauled of and through the poker at me. Guess he knew what I was a thinking" (p.93).

Margaret Atwood makes a germane statement when she argues: “here’s Amy the young runaway indentured servant who helps Sethe in child birth during her flight to freedom, and incidentally reminds the reader that the nineteenth century, with its child labour wage slavery and widespread and accepted domestic violence, was not tough only for blacks, but for all but the most privileged whites as well.”¹¹

Apart from the white inflicting violence on the non-whites, the novel also contains instances where the non-Europeans perpetrated violence back on the Europeans. It is almost like a boomerang on themselves. Freedom, as has been commonly believed, is one of the most sumptuous, most delicious and most cherished dreams of an individual. An enslaved person cannot even dream freely because of overpowering system of oppression. The desire for this freedom makes these Africans agile and their alacrity in violent actions is directed against the hard exploiters. When the white remain intransigent as rocks, the black attack them, even though they have to face fiasco at the end. For instance, Paul D attacks Brandywine, his new expropriator. Similarly, Sixo, before dying, tries to inflict a lethal wound on the white master. Sethe also becomes jittery when she sees a white man approaching the yard of 124, and later, when Mr. Bodwin arrives to take Denver, Sethe is no longer able to control herself, and thinking Mr. Benefactor to be the slave catcher, rushes towards him with every intention of knocking him down.

It’s true that the masters or the white men unleash suffering and torture on not only the black, but on the white as well, but it is equally true that the black, the Africans, do not spare the members of their community quite like the

white Americans. In the African community, this violence manifests itself in different forms: physical, sexual, emotional and verbal.

The instances of physical violence within the black race are not many in the novel. The Africans, already slaughtered and pulverised by the white Americans, exhibit a strong bonding yet there are numerous occasions when anger and frustration or some other emotion gets better of their sense of unity. For example, Sethe's own mother slapped her own daughter when the latter inquired as to why she was not marked beneath her breast like her mother. In response, she only receives a slap. She is never able to make out the reason of that slap till she receives her personal mark on her back. The act of slapping was not preceded by a desire to hurt which is the criteria of judging any gesture to be violent yet it was enveloped in sheer anger and frustration which Sethe's mother harboured against her exploiters and which Sethe's mother could never give vent to because of her marginalised status. Now, it bursts out as she is reminded indirectly of the time of branding.

There are a few other occasions as well when the black community loses its control over itself and directs physical beating on its own members. For example, Sethe, watching the white slave master coming with the slave catcher, a nephew and a sheriff, rushes towards her daughter, picks a handsaw and pierces her throat. Susan Bowers remarks in this context: "This prefiguring of the novels climactic, redemptive moment is the most violent episode in the novel. Although violence is characteristic of apocalyptic literature, this violence is especially notable because it consists of the victim inflicting the violence on her own children out of utter helplessness."¹²

Not only the black contused each other physically but sexually as well. Pamela E. Barnett¹³ draws parallels between succubus and incubus on the one hand and *Beloved* on the other which can be cited to illustrate the sexual violence heaped on the black by the black themselves. According to orthodox belief, a succubus is the incarnation of female demon that gets up from the grave in the night and sucks the substance out of men. Likewise, incubus is the reincarnation of a dead man who in the night sucks the women of their substance.

Beloved in the novel is both, succubus and incubus. As a female demon reincarnate, she steals semen from Paul D, and becomes pregnant. Paul D here is almost crippled. He is reluctant to yield, but he can't help it. He reflects upon this situation later in the novel when he recalls that "coupling with her was not even fun. It was more like a brainless urge to stay alive" (p.311).

Linda Krumholz verbalises this view in different words. She opines: "she functions as the spur to Paul D's and Denver's repressed past, forcing Paul D to confront the shame and pain of the powerlessness of man in slavery."¹⁴ When she comes in his cabin and seduces him, he is confronted with the same emasculation which he had to undergo during the time of slavery. His heart, which is like a red tobacco tin in which are stored all the painful memories, is unlocked and he yells in pain, "Red heart. Red heart" (p. 138).

Beloved is also equated with vampire or incubus. Though, she is not the male spirit impregnating the slumbering women, "but the vampire figure in *Beloved* enacts as incestuous, homosexual desire," as has been established by P.E. Barnett.¹⁵

Beloved has come back for Sethe. She wants to take vengeance on her for her premature murder. She drains Sethe of her vitality. First, in the clearing, she plants a deadly kiss over Sethe's neck, then later She enacts as if she is a just born child. Sethe is ready to fulfil all her desires. Whatever Beloved wants is given to her such as the best chair, the best food and so on. And when Sethe runs out of things, Beloved invented desire. Later, one notices Beloved with protruding belly and Sethe becoming thinner and thinner. So thin that flesh betwixt her fingers and thumb dissolves. In this way, the advent of Beloved and her over-demanding attitude become detrimental to Sethe.

The black community harms its own people by impairing them psychologically and emotionally as well, and Margaret Atwood succinctly remarks: "Toni Morrison is careful not to make all the whites awful and all blacks wonderful."¹⁶

Indeed, the negroes are here not romanticised, they are human enough to let down each other. For example, Sethe, after butchering her daughter, is segregated by the entire black vicinity. Similarly, when Paul D is on the verge of settling down with Sethe, Stamp Paid shows him the newspaper clipping in which was printed the face of the murderer mother which hurts Paul D badly. When Sethe feels that everything was transpiring smoothly and Paul D will almost be a good company for her and will hold her if she falls down, the latter injures Sethe with the words, "you got two feet, Sethe, not four" (p. 194).

Last, but not the least, the verbal violence is yet another weapon with which the Africans cripple each other. Their words carry so much sarcasm that

they pierce the hearts of the listeners. For instance, Denver enquires from Paul D, “how long he was going to hang around” (p. 52).

The phrase hurt Paul D so much that he became angry. He dropped the cup from which he was gulping the coffee. Another instance, where verbal violence is noticed is a question asked by Nelson Lord when Denver was seven years old. He investigates, “Didn’t your mother get locked away for murder? Wasn’t you in there with her when she went?” (p. 123).

The question damages Denver’s verve in such a way that she relinquishes altogether the idea of continuing her education. In short, she prefers seclusion rather than integration with the community to avoid such inquiries. Apart from racial and intra racial violence, one also notices self-directed violence in the novel. In such cases, an individual, instead of perpetrating atrocities on others, directs them at his own self. Now, in *Beloved*, it is Beloved herself who enacts such an episode. Actually, what psychoanalyst affirms is that whatever is repressed tends to come out in various ways, and injury to self in sheer frustration is one among many of its manifestations. In the novel, Beloved, the reincarnation of Sethe’s dead daughter, is frustrated when Sethe dotes more on Paul D than on her. Beloved wants that Sethe must remain most of the time with her because she has come back for her. But, Sethe’s propensity is more for the last of the Sweet Home’s man, Paul D. At this, enraged Beloved pulls her tooth out and shows it to Denver and thinks, “This is it. Next would be her arm, her hand, a toe. Pieces of her would drop may be one at a time, may be all at once” (p.157).

Violence in the novel results in many consequences. Among them, the primary is disintegration of the families. The white pay no attention to this aspect. For them, money is more important than human relationships. They purchase and sell the black as if they are commodities. Its upshot is that the families are broken, brothers are sold away from the brothers as it happens with Paul D, Paul A and Paul F, out of whom it was Paul F who was sold away from his brothers. The children are separated from their mothers as it happened with Baby Suggs whose seven children were snatched away from her in their infancy. The wives are taken from their husbands for carnal pleasure as it happened with Stamp Paid whose wife was taken up by the master's son for his own enjoyment.

The destruction of self is yet another ramification of the violence. The characters, more particularly the Africans, in *Beloved* lose their self-identity. There is regression in them. They even become worse than beasts. For example, Halle goes frantic after watching his wife's milk being stolen. Sethe goes berserk and decimates her daughter in order to save her from the violence which she herself has experienced. Paul D also feels less than a chicken when he contemplates: "Mister was allowed to be and stay what he was. But I was not allowed to be and stay what I was" (p.86).

The characters after facing so much pummelling and mauling acquire a negative attitude towards life. For example, Paul D develops his own credo of loving small instead of loving thoroughly. Similarly, Ella believes that one should love nothing. Above all, the characters are not able to define themselves as mother, father, husband and brother. For instance, Stamp Paid and Halle

believe themselves to be emasculated as husbands when they witness their wives being robbed in front of them and they could not do anything. Sethe also, in order to prove herself as a caring mother and also to prove that her children belong only to her and no white men would even insulate them from her, smites one of them and plans to do the same with other children. In the entire novel, she keeps on defining herself or at least tries to define herself as mother. She is on the path of finding fulfilment or wholeness as has been declared by Bernard W. Bell. According to him: “On a sociopsychological level, *Beloved* is the story of Sethe Suggs quest for social freedom and psychological wholeness.”¹⁷

Alienation or loneliness is yet another consequence of the violence inflicted on the characters. For example, when Sethe murders her own daughter, she is ostracised by the vicinity of the black. She, along with her daughter, lives in sheer isolation. Similarly, when baby ghost becomes livid and violent, it manifests its rage by shattering the mirror and putting the handprints on the cake. The consequence of this is that Sethe’s two sons, Howard and Buglar, are so intimidated that they run away from 124 and Sethe and Denver are again left bereft of any human company till Paul D arrives after 18 years.

The characters are unveiled through the treatment of violence by the writer. For instance, the White, the Europeans who claim to be more educated, more civilized and more cultivated are portrayed as more barbaric, more uncivilised, and more beastly when they unleash so much of violence. For example, the school teacher who is supposed to be the representative of a cultivated and disciplined outlook on life, fails to stop his nephews when they

violate every lesson of the book called humanity and put Sethe down and steel her milk. One wonders what a school teacher!

Likewise, the strength, endurance and the indomitable spirit of the black are also unfolded by the treatment of violence. The black received merciless belting and beating. But, under all these vicious circumstances, they manifest immense courage, patience and stamina with almost an undying spirit. Paul D, for instance, had an iron bit in his mouth, Sethe was whipped mercilessly; but nowhere does one notice in the novel either of these characters ever cursing anyone for his/her fate. They tolerate stoically whatever comes their way. The violent treatment of the black at the hands of the white masters not only joins the black with one another, but also makes them one with one of the white who receives similar handling. The common experiences of the black make them react collectively against the masters. For example, Paul D escapes with 45 other members of the chain gang. Similarly, Sethe and company also decide to flee with all the other slaves at Sweet Home. They understand each other quite well because each of them had a similar sort of experience under excruciating circumstances. Likewise, the white such as Amy Denver, who herself is a fugitive slave, massages not only Sethe's legs but also aids her in delivering her fourth offspring. No other white might have done this. Only the white like Amy behaves in this manner because of the similitude of experience shared by them on different plantations.

Violence heaped on the characters also becomes instrumental in their growth. When a person receives too much of brutality, physical, sexual and psychological, one generally ceases to think. In fact, one can become almost

moribund. But, in the novel, Sethe and Baby Suggs are two characters who are exceptions to this general notion. Sethe has faced too many hardships in life. She is beaten, her milk is stolen, her back is scarred, she has to deliver on the boat, her husband is not with her yet she never loses her capacity to think. She resolves that she will save her offspring. She slays her daughter so that she might not be killed by the violence which she herself has experienced. With sheer confidence and sense of possession, she speaks to Paul D, “I took and put my babies where they’d be safe” (p.193).

Wilfred D Samuels and Clenora Hudson Weems remark quite pertinently: “clearly, her intention here is not denial but rationalisation; yet, it is rationalisation based on conviction.”¹⁸

Baby Suggs is another woman, in the novel, whose personality undergoes a metamorphosis. She, like Sethe, is subjected to physical, sexual and emotional atrocities. After receiving emancipation, instead of retiring into reclusion, she becomes a preacher who gathers the black in the clearing and urges them to love their flesh.

There are some other characters in the novel for whom confronting violence produces negative effects, since it destroys their capacity to feel. For example, Paul D is a man who has witnessed so much of devastation in his life that he no longer remains sensitive. It makes him tough. He has seen his own brother sold away, another hanged and killed, and a friend burnt and shot, another going mad, himself experienced a bit and iron collaring and filthy experience in wooden grave and chain gang. And to crown it all, during his strolling, he has seen more dead than alive Negroes. All this render him

incapable of responding to a particular situation in an exuberant way. Susan Bowers wisely maintains: “What had led to his own inability to feel was the systematic destruction of his manhood.”¹⁹

The violence is handled by the writer in such a way that the novel shows how violence begets violence. For instance, Sethe receives violence which she further redirects on her daughter who haunts 124 as a ghost and inflicts violence on the inhabitants of 124, and later, by arriving as a voluptuous young maiden, she exploits not only Paul D but Sethe as well.

The theme of violence, as dealt with by Morrison, also leads the reader to experience a kind of cathartic effect. The reading of the novel arouses various emotions in the hearts of its reader. To quote Susan Bowers: “Apocalyptic literature is very like Greek tragedy in arousing emotion and creating the condition for catharsis.”²⁰

The violence which the rulers inflict on the ruled creates the disgust for the masters. On the other hand, it arouses pity, sympathy and appreciation for the sufferers. The way they endure suffering also motivates the reader to confront the battles of life more courageously. For example, one feels sympathy for Sethe when she is beaten and her milk is stolen. Likewise, one also sympathises with Paul D whose brothers are snatched away from him and who is treated worse than the beasts. One also appreciates the way in which the slaves try to resist collectively against the cruelties of the masters. Similarly, one also feels repulsion for the white such as the school teacher and the plantation-owner who was the master of Amy.

Above all, with the help of the theme of violence, Morrison is able to unveil her outlook on life. What Morrison seems to be suggesting is that life is not the bed of roses. One has to confront many difficulties. Each individual reacts to the hostile environment in his or her own way. In the novel as well, one notices different types of individuals responding in different ways to the oppressive circumstances. First, there are Paul D and Sethe who unflinchingly face all atrocities. For example, Paul D lost his brothers and his friends, and was himself treated as even worse than an animal. Similarly, Sethe lost her three children and her husband and lives in sheer segregation for 18 long years until Paul D and Beloved arrive in 124. But these characters are never noticed grumbling or beating their heads. They tolerate every misfortune with immense tenacity.

Then, there are men and women who also try to change the situation by acting accordingly. For example, Sethe, who is a veteran as far as the excruciating experiences of slavery are concerned, tries to alter the fate not only of her children but hers as well. When she learns that in future her children might be separated from her, she resolves to send them to a safe place. First, she sends her three children through underground rail road and later she herself escapes from Sweet Home and successfully makes it to Baby Suggs in 124. After her advent, when few days later she is traced by school teacher and his gang, Sethe again comes into action. Instead of letting the masters capture her and her progeny, she decides to end the life of her children so that they might be saved from hellish circumstances in slavery. Her plan is to slit all her children, but she is only able to do it with one of them.

Similarly, Paul D who was sold to Brandy Wine and later on was kept with forty five other men in dismal wooden graves also resolves to change his fate. He along with other counterparts runs constantly for 86 days till they all are unchained with the help of Cherokee men. The third broad category of the people in the novel is of those who seek escape from the situation. Here, the cases of Howard and Buglar can be cited for illustration. When Baby ghost starts making its presence felt through cracks in the mirror and hand prints on the cake, these two boys are so intimidated that they take to their heels, never to return. Similarly, there are people who go mad. For example, Halle, after watching his wife's milk being stolen, goes out of his wits.

Another kind of person depicted in the novel who respond to violence in their own way, is of those who become negative, such as Ella. Ella has faced so much of violence in her life that now she believes that one should not love anything. She was an ex-slave who was kept and misused by a father and a son for several days. She also gave birth to a baby whom she would not nurture. Moreover, she also remembers the beating to which she was subjected. The result of so much torture is that she ultimately becomes negative in her attitude. Similarly, Stamp Paid also becomes somewhat cynical. His wife is snatched away from him by the master for his son. When she is thrown out of the master's bed, instead of accepting her, Stamp Paid purchases his freedom, changes his name and walks out from slavery. Later, he thinks that by helping the ex-slaves from this side to the other side of the river, he is paying penance for a wrong that he committed.

In the final analysis, one can safely affirm that *Beloved* is a novel in which the theme of violence is portrayed in all its colours. It is not that only the white, the Europeans; the masters are portrayed as inflicting violence on the black. Even, the Negroes in their own turn redirect violence back on the masters. The scale of the novel is comprehensive enough to present the white as inflicting injustice on the members of their own community, as it deals, at the same time, with the black who also heap violence on the members of their own race. Self-directed violence is another form which gets manifested in the novel. Apart from these, the novel also vividly explicates the consequences of violence. Wilfred D Samuels and Clenora Hudson Wheems rightly maintain: “*Beloved* records the cruelty, violence and degradation whether the physical or psychological fragmentation of the black family that often victimised slaves irrespective of age or gender.”²²

NOTES

¹ Toni Morrison, *Beloved* (1997; rpt. London: Vintage, 2005), p. 103. All subsequent textual references have been quoted from the same source and their page numbers have been mentioned within parentheses immediately after the quotation.

² Lerone Bennet Jr., "The Jubilee War: Witnesses and Warriors," *A History of Black America*, 5th ed. (Chicago: Johnson Publishing Company, 1982), p.198.

³ Valerie Smith, "Circling the Subject: History and Narrative in *Beloved*," *Critical Perspective Past and Present*, ed. Henry Louis Gates, Jr., and K.A. Appiah (Newyork: Penguin Books, 1993), p.342.

⁴ Margaret Atwood, "Haunted by Their Nightmares," *Viva Modern Critical Interpretations: Toni Morrison's Beloved*, ed. Harold Bloom (New Delhi: Viva Books Private Limited, 2007), p.5.

⁵ Elizabeth Fox-Genovese, "Unspeakable Things Unspoken: Ghosts and Memories in *Beloved*," *Viva Modern Critical Interpretations: Toni Morrison's Beloved*, p.98.

⁶ Pamela E. Barnett, "Figurations of Rape and the Supernatural in *Beloved*," *Viva Modern Critical Interpretations: Toni Morrison's Beloved*, p.193.

⁷ *Ibid.*, p.204.

⁸ Margaret Atwood, p.7.

⁹ Chinua Achebe, *Things Fall Apart* (New York: Anchor Books, 1994).

¹⁰ Wilfred D. Samuels and Clenora Hudson-Weems, “‘Ripping The Veil’: Meaning through Rememory in *Beloved*,” *Toni Morrison* (New York: Twayne Publishers, 1990).

¹¹ Margaret Atwood, p.7.

¹² Susan Bowers, “*Beloved* and the New Apocalypse,” *Viva Modern Critical Interpretations: Toni Morrison’s Beloved*, p.17.

¹³ Pamela E. Barnett.

¹⁴ Linda Krumboltz, “The Ghost of Slavery: Historical Recovery in Toni Morrison’s *Beloved*,” *Viva Modern Critical Interpretations: Toni Morrison’s Beloved*, p.86.

¹⁵ Pamela E. Barnett, p.199.

¹⁶ Margaret Atwood, p.8.

¹⁷ Bernard W. Bell, “*Beloved: A Womanist Neo-Slave Narrative; or Multivocal Remembrances of Things Past*,” *Viva Modern Critical Interpretations: Toni Morrison’s Beloved*, p.59.

¹⁸ Wilfred D. Samuels and Clenora Hudson-Weems, p.108.

¹⁹ Susan Bowers, p.34.

²⁰ *Ibid.*, p.40.

²¹ Wilfred D. Samuels and Clenora Hudson-Weems, p.96.

Chapter-4

Conclusion

Morrison started her literary career in 1970 with the publication of *The Bluest Eye*. Seventeen years later, in 1987, she published *Beloved*. There appeared a sea change during these seventeen years in her conception regarding the plight of the Negroes in America. Earlier, she believed that race and colour were the main cause of the sufferings of Afro-Americans. But, later when she came out with *Beloved*, she seems to be suggesting that along with race, class was another reason of the miseries of the black. What remained unchanged during these years, is her presentation of the phenomenon of violence. In her first novel, *The Bluest Eye*, and in the fifth novel, *Beloved*, violence is portrayed as a theme which gives unity to what is generally believed to be an inorganic structure. Both the novels are graphic accounts of the atrocities heaped on the black by the white in the nineteenth and the twentieth centuries.

The Bluest Eye captures the spirit of the 1940's, when Morrison was a child and when to be a black was deemed as ugly and inferior. Through the character of Pecola, Morrison has highlighted the plight of a black girl in the society dominated by the white. Similarly, *Beloved* captures the spirit of preceding century, when slavery was in practice and the black were mercilessly beaten. Through the character of Sethe, the writer has presented the suffering and misfortunes undergone by a slave woman in slavery and in freedom.

Morrison was not the first Afro-American writer who has dealt with the issue of violence. Before her, the writers like Richard Wright and Baldwin had depicted the theme of violence in their novels. The main difference between Morrison and her predecessors is that their focus was largely on the white inflicting pain and sufferings on the poor black. On the other hand, Morrison not only demonstrates the way in which the white emasculated the black but also she examines how the Africans castrated the members of their own race. In fact, she deals with the entire issue of violence with its wider implications in an objective manner. For example, in *The Bluest Eye*, Pecola, a young black girl, is harmed by both: her black acquaintance and the white masters. Likewise, in *Beloved*, Sethe, an ex-slave, is equally let down by both the communities: the black and the white.

Yet another difference in Morrison and her precursors in delineating the theme of violence is that her forefathers had presented the suffering of the black through the eyes of men. How a black man tries to cope with the violence unleashed on him and his family was their chief concern. For instance, Wright in *Native Son* unfolds the misfortunes encountered by a man named Bigger. Likewise, Ellison in *Invisible Man* unearths the problems and difficulties confronted by a young unnamed black narrator. While Morrison being a woman views the world around her with the eyes of a woman. For example, *The Bluest Eye* is a record of the difficulties encountered by young girls like: Pecola, Claudia and Frieda and adults like Pauline and Geraldine. In the same manner, *Beloved* is a graphic account of hardships faced by women like Sethe, Denver, Beloved, Baby Suggs, Ella, Sethe's mother, Nan and thirty miles woman.

Violence, as has been presented by Morrison, achieves artistic credo of its own. It leads to many outcomes and consequences. In fact, it presents a series of cause and effect that creates a nice chain of interrelated incidents. For example, it presents how the families are disintegrated when violence is unleashed on its members. In *The Bluest Eye*, one comes across the Breedlove family that is disintegrated because of the violence that Cholly, the head of the family, directs on his own family members. When he sets his own house on fire, all the members of his family are scattered in different directions. Similarly, in *Beloved*, one comes across not one but many families that get disintegrated because of the cruel treatment of the white. The members of black families were auctioned away from each other for lucrative gains. For example, seven children of Baby Suggs were taken away from her. Paul A, D and F were also purchased by Mr Garner from somewhere and Mrs. Garner, at the demise of her husband, sold Paul F to clear her debts.

The difference between both the novels is that of focus. In *The Bluest Eye*, the focus is on individual disintegration characterised by Breedlove's family, while in *Beloved*, the focus shifts on the collective disintegration characterised by the slave community. The reason behind this is that in *Beloved*, Morrison deals with slavery as an institution which was the offshoot of capitalism. Almost the entire society of the black in America was affected by this institution. While in *The Bluest Eye*, Morrison depicts the time between the two world wars, when slavery was the thing of the past. Many characters in *The Bluest Eye* suffer not because of their poverty, but because of colour. Even, Cholly who is shown as the cause of the disintegration of Breedlove's family suffers from frustration and helplessness because of being black. These

circumstances were common to almost every black family. However, the failure did not result in the scattering of the family members in all cases. For example, there is MacTeer's family which also consists of the persons who are poor and black. There, the father does not burn his house, does not rape his daughter, does not beat his wife. On the other hand, the father proves himself as protecting and caring one. He looks after his family rather than destroying it. This clearly proves that Morrison's emphasis in this novel is on individual disintegration rather than collective disintegration.

Violence results in disintegration which further leads to loneliness. The characters perpetrate violence on each other in such a way that as a result, the recipients are left isolated. For example, in *The Bluest Eye*, Pecola feels isolated when she is neglected by everyone, she comes across. Cholly also feels somewhat lonely when his father disowns him. In *Beloved*, Sethe loses her mother when she was quite young. She also might have felt lonely when she is brought at the Sweet Home plantation without a father, brother, mother and friends. Though, for some time, she enjoys the company of husband, children, friends and the kind master and mistress. But, very soon, she is hurled into isolation. When she runs away from the plantation, she is traced by the school teacher, as a result she murders her daughter, is ostracised by the entire neighbourhood, her mother-in-law dies in grief, her husband fails to return and her only surviving daughter turns out to be a sensitive kind of girl. So, for eighteen years, she lives her life all alone.

This loneliness is portrayed producing negative results in *The Bluest Eye* and positive results in *Beloved*. For example, Cholly feels frustrated and

castrated when he is lonely. Pecola, because of sheer negligence, goes mad. On the contrary, in *Beloved*, Sethe who has spent eighteen years sans husband, sans community, only with a daughter who is too weak to go out, but Sethe is as obstinate as she was eighteen years before. Loneliness has not weakened her conviction in anyway regarding her act of infanticide. With sheer confidence, she speaks to Paul D that whatever she did was right.

Loneliness, which is the result of violence directed on the characters, is also presented as forced or self-imposed. For instance, in *The Bluest Eye*, a few characters are shown helpless. They are not given any choice. They have to accept whatever comes their way. For example, Pecola cannot help feeling segregated when she is rejected by her parents and her society. She has to live isolated whether she wishes or not. While in *Beloved*, the characters have a little bit of choice. No doubt, the masters did not seek their permission before offering them to the highest bidders. But still, there is some hope; if not in slavery then outside it. For example, Denver who stopped her outward escapades only because she was afraid of the questions that she might be asked regarding her mother's visit to jail along with her. Had Denver wished, she could have neglected such petty things, after all her mother was also going out for job. Denver remains all alone only when she is perturbed about such trivial happenings. By the time, she makes up her mind to go out and work, she finds people to talk and community to ask for.

Morrison, by dealing with the theme of violence, has unfolded her outlook on the world around her. She seems to be suggesting that violence is a perennial phenomenon active in one form or the other. Violence can be

perceived as larger metaphor for the obstacles and hardships that one has to face in one's life. Now, different persons respond to difficulties in different ways. Morrison presents a wide range of characters who try to cope with the oppressive forces in their own way.

There are individuals who surrender without putting any effort on their part. For example, Cholly and Pecola in *The Bluest Eye* surrender easily. Cholly, when asked to copulate by the white, complies unquestioningly with the wishes of the masters. Likewise, Pecola constantly craves for the blue eyes that she can never acquire. As a result, she goes out of her wits. Geraldine and Pauline also, on their part, imitate the ways of the white community. In *Beloved* as well, one meets Ella who also accepts her lot silently and later develops a negative attitude towards life.

However, there are characters who try to alter their fate by acting in accordance with their wishes. Though, they may sometimes face fiasco. They do not emerge as triumphant in the literal sense of the word. Still, their efforts win the reader's approval. For example, in *The Bluest Eye*, Claudia, a young black girl, refuses to accept the idea regarding beauty circulated by the dominant culture. She dismembers the white baby dolls and even beats Rose Merry, a white neighbourhood girl. All this proves that Claudia is a revolutionary girl. In *Beloved*, Sethe is also made of similar stuff. She decides to run away from the plantation instead of letting the school teacher lay his hands on her children. Her act of infanticide is yet another instance of her questioning nature.

A few individuals also respond to the hostile circumstances in lively and whole hearted manner. They console themselves with their own make-believe

hypothesis. In *The Bluest Eye*, three prostitutes are an example of such a kind. Though, they are black, they never consider themselves as inferior and outcast. They laugh whole heartedly, eat whole heartedly and concoct stories to Pecola.

In fact, their hatred is directed outward, that is why they live happily. Sixo, a Sweet Home man, in *Beloved*, is also of similar nature. When he dies, he is laughing and singing whole heartedly. The reason for this is that his thirty miles woman has already escaped with the seed of his baby inside her womb. Though, he is dying, his son, as he thinks, will be safe. However, certain other characters who run away from the scene without putting any battle, fail to win Morrison's attention. In fact, Morrison does not delineate such characters in detail. For instance, in *The Bluest Eye*, Sammy is not portrayed vividly. By the time he is fourteen, he has run away from his house twenty seven times. By the time the novel comes to an end, he is again told to have run away. In *Beloved*, Howard and Buglar are two such characters. They are so intimidated by Sethe's act of infanticide that they run away from their house as soon as they are capable of running.

Morrison's narrative world is so rich with the phenomenon of violence that one may criticise Morrison on several counts. The first charge that can be levelled against her is that she has presented a world of horror and terror. She creates a world where the moral values have gone upside down. It is a world forsaken by God. In this world, a father rapes his daughter, a mother kills her daughter and human beings are mercilessly beaten. At the surface level, the charge seems valid. But, after a thorough analysis, one concludes that there is a silver lining in the dark clouds. The positive side of the life is however not

absent altogether. For example, if there are parents like Mr. and Mrs. Breedlove who destroy their children, then there are the parents like Mr. and Mrs. MacTeer who protect their children. Likewise, if there are cruel masters like the school teacher and Brandy Wine who inflict miseries on the black, then there are Mr. Bodwin and Mr. Garner who consider the black as humans. Moreover, the reading of these novels produces feelings such as sympathy and appreciation for the victims.

The second charge that can be brought against Morrison is that of presenting a melodrama instead of a refined work of art. No doubt, blood freezing and hair rising incidents are the stuff on which the edifice of Morrison's novels is built, still, one can argue in defence of Toni Morrison. In melodrama, there is a note of exaggeration; the sensational incidents are created in abundance. In Morrison's fictional world, there is reality. She presents the actual life as it was lived by the black in the U.S.A. She graphically delineates the violence as it was inflicted on the black by the white in the nineteenth and the twentieth centuries.

Morrison can also be taken to task for being topical and limited in her approach. She shows how the black were subjected to physical, sexual and psychological agonies in America in the nineteenth and the twentieth centuries.

A great work of art has timeless appeal. Its subject matter is that of universal significance. Violence, as it is unleashed on the Afro-Americans by the Americans and vice-versa, limits the relevance and appeal of her novels to a certain kind of audience of a certain place. Here again, violence as a phenomena has always been the stuff of the great classics. The world, since time

immemorial, has been broadly divided into two parts: the powerful and the powerless. The powerful has always tried to exercise their power to sustain their domination. The powerless, on the other hand, have always resisted or at least tried to resist the oppressive system. The one, who is powerful, ultimately wins the battle. Now, this entire system of suppression and reaction has acquired the form of the coloniser versus the colonised, the ruler versus the ruled, men versus women and the white versus the black. In this way, the novels of Morrison have a universal and everlasting appeal.

Last, but not the least, Morrison can also be accused of creating novels of actions and incidents rather than novels of character. There are numerous scenes in her novels which seem to lend some weight to this charge. Yet one can argue that Morrison has not altogether neglected the characters in enthusiasm for portraying scenes with violence in the background. The characters have been portrayed with the psychological depth and the minute understanding of human nature. For example, in *Pecola*, one comes across a personality that is damaged altogether by her surroundings. By portraying Sethe, she seems to be dealing with a question as to how a woman can behave if her back is lacerated, milk is stolen, children are gone, husband is absent and society has declared her an outcast.

In a nutshell, by dealing with the theme of violence, Morrison achieves extraordinary outcomes. Primarily, due to this, her writings achieve a universal appeal. Secondly, she has presented the actual life of the black race in America. Then, she has produced a literature that can be put in contrast to the vast literature written on the theme of love. Moreover, she has made her readers

familiar with their own negative instincts that are generally buried beneath the veneer of civilization. She has tried her level best to deal with almost every form of violence such as: physical, sexual, verbal and emotional. To put it differently, she has presented violence in terms of gender, class, race, family and individuals.

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Treatment of Violence: A Study of Morrison's The Bluest Eye and Beloved

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Gender, Number and Case in Uchai

Tamojoy Brahma, M.A., M.Phil.

Abstract

Uchai is a small ethnic group of Tripura speaking a dialectical variant of Kokborok, the language of the Tippera. The paper discusses the major features of gender, number and case system in Uchai. While Section 1 serves as a brief introduction to the paper, Section 2 discusses the various ways of expressing gender differentiation in Uchai. Section 3 presents the morpheme indicating plurality in Uchai. Section 4 deals with different cases and their morphemes found in Uchai. Finally, Section 5, while concluding the paper, focuses on the salient features of gender, number and case system in Uchai, presenting a comparative study with Kokborok.

[**Keywords:** Uchai, gender, number, case, Kokborok]

Introduction

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Gender, Number and Case in Uchai

The major tribal community of Tripura is variously called Tipra, Twipra and Tippera (Tipperah) with reference to the region wherein they have been settled for several centuries. The community speaks Kokborok. Kokborok, one of the Baric languages, has a number of dialects and one such dialectical variant is Uchai. The Uchai, spelt 'Osuié' by Thomas H. Lewin (1869), is a small ethnic group living chiefly in the southern parts of Tripura and has a population of only 2,015 souls in the Census of 2001. Ethnically, however, Uchai is closer to Bru than to Tippera; their tradition makes Bru and Uchai brothers. Linguistically, Uchai belongs to the Bodo group of the Tibeto-Burman sub-family of Sino-Tibetan languages; they now speak a dialectical variant of Kokborok, the language of the Tippera (Brahma, 2011).

The paper is primarily based on the data collected through fieldwork conducted in the Uchai villages of Tripura. The fieldwork consisted mainly of interviews with the native speakers of Uchai language. The persons of different age groups, professions, and sexes have been used as informants and the data have been cross-checked with other speakers of the same variety. Apart from the field study, a few published dictionaries on Kokborok and Bru have also been consulted upon. Moreover, mention must be made of Karapurkar's *Kokborok Grammar* (1976) and Jacquesson's *A Kokborok Grammar – Agartala dialect* (2008) which have been used to cross check the data collected on Kokborok for this paper.

The goal of this study is to analysis the gender, number and case system in Uchai. At the same time, the paper hopes to provide the basic differences between Uchai and standard Kokborok. The study will be useful to the Uchai scholars, general linguists, and to the native speakers of Uchai themselves. The present paper may be looked upon as a keystone for future studies on the Uchai language spoken chiefly in the state of Tripura.

1. Gender

Gender in Uchai is not grammatically marked as it does not affect the grammatical pattern of the language. Gender distinction in Uchai is determined on the natural recognition of sexes. Therefore, Uchai has only natural genders. On the basis

of semantico-morphological criteria, nouns in Uchai are primarily classified into two classes, viz., animate and inanimate. Animate nouns, both human and non-human nouns, are differentiated for masculine and feminine genders; while all the inanimate nouns are considered neuter in Uchai. Neuter gender is not marked by any marker in Uchai. However, the various ways of expressing gender differentiation in Uchai are as follows:

2.1 In Uchai, the basic kinship terms have two distinct forms for each sex as in many other Tibeto-Burman languages. Thus, the gender distinction among the kinship terms in Uchai is made lexically. Here are a few examples:

/mšaiu/	‘daughter’	/mšačla/	‘son’
/amoŋ/	‘mother’	/pha/	‘father’
/hi?/	‘wife’	/sai/	‘husband’
/mšubroi/	‘granddaughter’	/mšukla/	‘grandson’
/čoi/	‘grandmother’	/ču/	‘grandfather’
/abi/	‘elder sister’	/ata/	‘elder brother’
/kraiYu/	‘mother-in-law’	/kra/	‘father-in-law’
/atoi/	‘younger aunt’	/mama/	‘younger uncle’
/hana/	‘younger sister’	/phiyoŋ/	‘younger brother’
/bačoi/	‘elder sister-in-law’	/kmoi/	‘elder brother-in-law’

2.2 The human nouns other than the kinship terms and the animate nouns specify the difference in sex by adding a gender marker that indicates maleness or femaleness usually after the noun. The morphemes generally used to indicate masculinity and femininity are /čla/ and /broi/ respectively. Here are few examples:

	<u>Male</u>	<u>Female</u>
man	/čla/	/broi/

Human Nouns:

Hindu	/hindu čla/	/hindu broi/
Muslim	/muslim čla/	/muslim broi/

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Christian /khrisčan cla/ /khrisčan broi/

Animals:

deer /mšoi čla/ /mšoi broi/
horse /korai čla/ /korai broi/
elephant /maiĵuŋ čla/ /maiĵuŋ broi/
monkey /mukhra čla/ /mukhra broi/
lion /khranšij čla/ /khranšij broi/

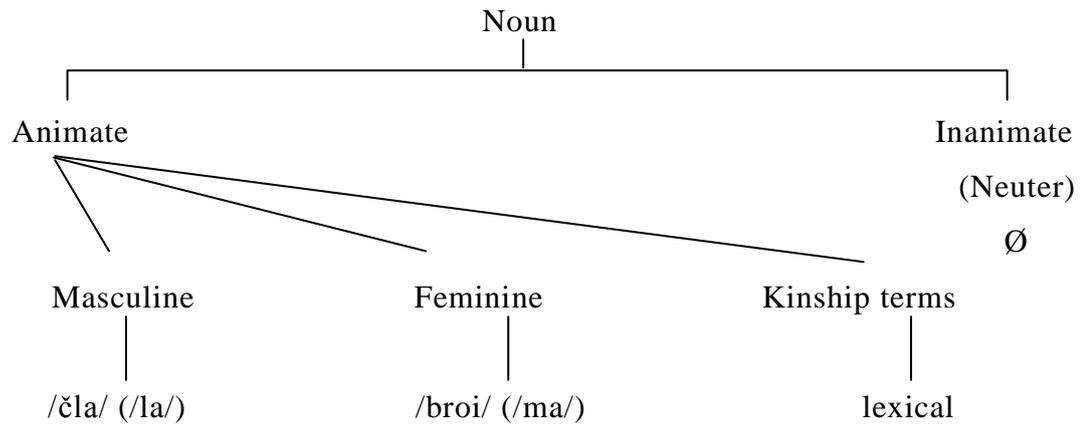
Birds:

owl /taukhu čla/ /taukhu broi/
crow /taukha čla/ /taukha broi/
duck /taukhō čla/ /taukhō broi/
pigeon /pharu čla/ /pharu broi/
sparrow /čuriha čla/ /čuriha broi/

2.3 However, there is an exception to this general rule in a few words. In Uchai, the morphemes /la/ and /ma/ are sometimes used to indicate maleness and femaleness respectively. Here are a few examples:

/tau la/ ‘cock’	/tau ma/ ‘hen’
/šoi la/ ‘dog’	/šoi ma/ ‘bitch’
/mšu maĵla/ ‘ox’	/mšu ma/ ‘cow’
/blai čla/ ‘male cat’	/blai ma/ ‘female cat’
/wau? malla/ ‘male hog’	/wau? ma/ ‘female hog’

Uchai gender system may be represented as in the diagram given below:



2. Number

In Uchai, two number distinction, viz., singular and plural can be found. Like gender, number is also not a grammatical category in Uchai as it does not affect the other constituents of the sentence. The verbs have no plural form, neither derivative nor grammatical.

3.1 While the singular noun is always unmarked, the plural in Uchai is usually formed at the morphological level by suffixation of plural morpheme /rau/ to the singular form. The plural morpheme /rau/ is used with animate nouns, both human and non-human, as well as with inanimate nouns. Here are few examples:

/mšačlarau/	‘boys’
/blairau/	‘cats’
/čuriharau/	‘sparrows’
/phaikhorau/	‘spoons’
/athukroirau/	‘stars’

3.2 However, when reference is made to an indefinite, large number of people or things and uncountable nouns, plurality is expressed by adding after the noun a collective adjective /gbangma/, which is a free form meaning ‘many,’ ‘much,’ or ‘a lot of.’

/manoi gbangma/	‘many things’
/thoi gbangma/	‘much blood’
/watoi gbangma/	‘lot of rain’

3.3 The morpheme indicating plurality occurs after the morpheme indicating masculinity or femininity, if the relevant gender morpheme is present. For instance,

/taularau/	‘cocks’	/taumarau/	‘hens’
/toukhõčlarau/	‘drakes’	/toukhõbroirau/	‘ducks’
/koraičlarau/	‘horses’	/koraibroirau/	‘mares’
/šoilarau/	‘dogs’	/šoimarau/	‘bitches’
/khraŋsiŋčlarau/	‘lion’	/khraŋsiŋbroirau/	‘lioness’

4. Case

Case is an inflectional category of noun. The case in Uchai shows the semantic relationship between the nouns to which they are added with the verb and also between two nouns. The case in Uchai is realised by adding suffixes to the nouns and pronouns or to the number affixes to denote case relations. However, when the case affixes are used after the stem, it does not affect the phonetic shape of the stem. Uchai has nine distinct cases: Nominative, Accusative, Dative, Genitive, Ablative, Locative, Instrumental, Associative, and Intrusive.

4.1 Nominative

The nominative case is the case of the surface subject of the verb. The most widely accepted function of the nominative case is to mark the subject of the sentence. It has no overt marker or case-suffix and thus, has the zero format and is equal to the stem.

/aŋ a čawoi/

I eat fish.

/abo člamsa klaiye thaŋmi/

The boy fell down.

/amoŋ mai šoŋwoi/

My mother cooks rice.

4.2 Accusative

The accusative case is the case of the direct object of the verb. The accusative case suffix is realised as /no/.

/abo člamsano reŋgale/

Call the boy.

/abo broimsano ho?di/

Send the girl.

/saŋaram sandyatino hanyau?woi/

Sajaram loves Sandhyati.

4.3 Dative

The dative case is the case of the indirect object of the verb and it is usually associated with ‘the act of giving.’ The direct object does not add the case suffix when the indirect object in the same sentence has the case suffix. It is expressed as /no/ suffixed to the noun or pronoun.

/nni kolom aŋno ridi/

Give me your pen.

/abo daktarbai čuŋno mthi riyau?mi/

The doctor gave us medicine.

/noren ŋau?stam yapha?mi hirabotino/

Naren presented a ring to Hirabati.

4.4 Genitive

The genitive case indicates that the noun to which it is suffixed is the possessor of something. So, it reflects a possessor-possessed relationship. The noun in genitive is always in collocation with other nouns. The genitive case suffix is realised as /ni/.

/garini čaka/

Wheel of a car.

/ramni iskul le hakča wose/

Ram's school is far away.

/bloᅇni taurau sriᅇ khe toᅇha/

Jungle's birds remained silent.

4.5 Ablative

The ablative case specifies the point in space to where the subject is transferred at the culmination of the action identified by the verb. Therefore, the ablative is the case of separation from the source in performing the action mentioned by the verb. This case suffix is realised as /ni/.

/bo nou?ni bakho? ye phaiha/

He came out of the house.

/čung kuwani toi khauwoi/

We fetch water from well.

/abo mša bloᅇni pherau ye phai toᅇha/

The tiger came returning from jungle.

4.6 Locative

The locative case indicates the location of a person, thing or animal in space or time, or of an event or action identified by the verb. It is expressed by adding the marker /wo/ to the noun.

/aŋ hatiwo thaŋnai/

I will go to market.

/taurau nou?khawo be toŋwoi/

Birds fly in the sky.

/bo post ophiswo thaŋwoi/

He went to the post office.

4.7 Instrumental

The instrumental case indicates the instrument used in carrying out an action identified by the verb. Hence, this case relates the instrument to the verb in the sentence and it is realised as /bai/ suffixed to the nouns.

/bo teksibai phai msei/

He came by a taxi.

/aŋ kolombai se soiwoi/

I write with a pen.

/bo čabibai abo tala no phiyaudi/

Open the lock with a key.

4.8 Associative

The associative case expresses the accompaniment of a person or an animal with the subject in doing the action of the verb. It is realised as /bai/ suffixed to the noun.

/bo čla abai mai čaha/

He eats rice with fish.

/aŋ apabai pa thaŋha/

I went with my father.

/nayami sambaraibai phainai/

Nayami will come with Sambarai.

4.9 Intrusive

The intrusive case specifies an intermediary object through which the action is executed. It is expressed by suffixing /doi/ to the noun.

/bo mkhodoi nu?ha/

He saw through the hole.

/abo lama hathairaudioi se laiwoi/

The road passes through the hills.

/sita tailādoi toi sa?khlai woi/

Sita threw water through the window.

From the above discussion, it becomes clear that Uchai has nine cases; and five different markers are employed to denote the case relations.

5. Conclusion – A Comparison between Uchai and Kokborok

Gender in Uchai is not grammatically marked but determined on the natural recognition of sexes. Animate nouns, both human and non-human nouns are differentiated for masculine and feminine genders, while all the inanimate nouns are considered neuter in Uchai. Those animate beings which make no distinction for male and female fall under the common gender. While the gender distinction for basic kinship terms are made lexically, the other animate nouns, both human and non-human nouns, are differentiated by adding a gender marker /čla/ and /broi/ indicating masculinity and femininity respectively. In few exceptional cases, the morphemes /la/ and /ma/ are used to specify maleness and femaleness respectively.

As in Uchai, Kokborok also has only natural gender; and the gender markers are suffixed to the noun root. Again, the gender distinction for basic kinship terms in Kokborok is also made lexically. However, to indicate masculinity, the morpheme /ʃəla/ is suffixed to animate nouns, both human and non-human. But Kokborok has three morphemes to specify

femininity — /juk/ used with human nouns, /ma/ with animals and /bur}y/ with birds (except for /t.ɹgma/ ‘hen’) as observed by Karapurkar (1976).

Like gender, number is also not a grammatical category in Uchai. While the singular noun is always unmarked, the plural in Uchai is formed by adding the suffix /rau/ to the singular form both with animate human and non-human nouns, as well as inanimate nouns. However, in case of indefinite, uncountable nouns plurality is expressed by adding after the noun a collective adjective /gbangma/, meaning ‘many,’ ‘much,’ or ‘a lot of.’ It is also to be noted that the plural morpheme always occurs after the gender marker, if any.

The Kokborok number system is similar to that as found in Uchai. The differences, however, arise in case of the plural morphemes used in Kokborok. Plurality in Kokborok is expressed by suffixing a collective adjective to the noun meaning ‘many’ or ‘much’. The plural morpheme added to the human noun is /s.ɹŋ/, while /r.ɹk/ or /kəbaŋ/ are used after non-human animate and inanimate nouns. The plural morphemes used in Kokborok not only express plurality but also might mean ‘remainder in a group’ (Karapurkar, 1976).

The case in Uchai can be considered as an inflectional category, especially of nouns and also pronouns. The case identifies the role of nouns and pronouns in relation to other parts of the sentence. It is used in the analysis of word classes or their associated phrases to identify the syntactic relationship between words in a sentence through such contrasts as nominative, accusative, etc. (Crystal, 1980). Uchai has nine distinct cases, viz., nominative, accusative, dative, genitive, ablative, locative, instrumental, associative, and intrusive. However, five different markers are employed to denote the case relations.

The Kokborok case system is similar to that of Uchai. The cases in Kokborok as in Uchai are differentiated on the basis of the semantic relationship which the noun to which they are added has with the verb and not on the basis of the form of the case-suffixes (Karapurkar, 1976). Though the case markers of accusative and dative, genitive and ablative, instrumental and associative are similar both in Uchai and

Kokborok, yet they are classified as six distinct cases on the basis of meaning. The following table will elucidate the point:

Case	Marker	
	Uchai	Kokborok
Nominative	/∅/	/∅/
Accusative	/no/	/n.ɹ/
Dative		
Genitive	/ni/	/ni/
Ablative		
Locative	/wo/	/ɹ/
Instrumental	/bai/	/bai/
Associative		
Intrusive	/doi/	/tui/

The case forms in Uchai as well as in Kokborok are obtained by adding the case suffixes to the base, which is equal to the nominative case form, in the singular, and to the base containing the plural formant, in the plural. The case suffixes are post posed to the base; so, all the case markers in Uchai and also in Kokborok are postpositional. Uchai, along with Kokborok, as an SOV language, maintains the characteristics that Greenberg (1963) has attributed to such language — languages with normal SOV order are post-positional.

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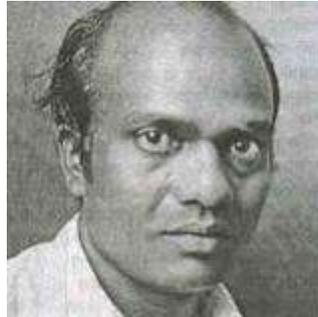
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Questioning the Motherhood in *Mother*: Dalit Identity against the Emotions of a Dalit Woman

Vaishali Shivkumar, M.A., M.Phil., B.Ed.



Baburao Bagul (1930-2008)

Abstract

The Constitution and laws in India prohibit untouchability. But Dalits still have no better alternative than to perform the traditional occupations, considered to be menial and lowly, in many places. Migration and the obscurity of urban environment have in some

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cases resulted in upward occupational mobility among Dalits. Dalits are still marginalized and despite many movements and ongoing struggles, their position in overall society has not changed much.

The present paper tries to depict this reality portrayed by Baburao Bagul, a pioneer of Marathi Dalit Literature, in his short story *Mother*. Particularly, the writer of this article wishes to focus on the character of the Dalit women who are ill-treated not by the society at large but also by their own family.

Horrible Treatment Meted Out to the Dalits

I was born in a Brahmin family and I was raised as a Brahmin. I always had a question in mind why my mother used to keep separate glasses for the people who were coming to our apartment to clean the area and remove the rubbish, which was definitely scattered and thrown around by the people living in the apartment itself. The lady, who used to come to my place during those hot summer days, would ask for drinking water. She was a lady of my mother's age and my mother used to respect her as she believed from the very beginning that 'these' people are actually worth respect and value. But as a child, I could never imagine the social discrimination those people were subjected to at that time. I am talking about Gujarat, a state well-known for its hospitality and frank nature. As I grew up, I slowly began to notice this horrible situation. The problem of the treatment of the Dalits would continue to agitate the minds of every person with ethical and moral values. Moreover, the problem of Dalit women is more horrifying as they are from the marginalized among marginalized persons.

The Lot of Women

Women, from the very beginning, were left at the margin. They had to pass a very hard life in their houses without opening their mouths to argue or to revolt. They tried their level best to fight this situation and they came out of it – at least on paper – we have good records of women revolting and struggling hard - to get things done on their own terms - with the society at large. But the Dalit women are kept under the marginalized ranks since they are the ones with no chances of getting out of that situation at all. Majority of the women of the older generation is illiterate and suppressed because of their family conditions. They seem to be completely unaware of why they suffer from these problems. Here, in this paper, I wish to talk about such a woman who sacrificed her whole life for her only child – a son, who in the end, revolted against her screaming that she was a

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‘slut’, a ‘whore’. After losing her husband, she dedicated her life just to provide bread and butter to the son, so he can be nourished well as he would be the only support for her later in life when she was old and needy. The short story, *Mother*, is thus a description of the ideology of a woman of a slum area and the society she lived in.

***Mother* by Baburao Bagul**

Mother by Baburao Bagul is the depiction of the fierce battle for life in an urban slum. The story revolves around a young, lower-caste Dalit widow and her son Pandu, who face harsh realities of life day after day. Their life is turned into turmoil because their relationship is spoiled when the upper caste people exploit the innocence of the child by poisoning his mind against his own mother. Their struggle to survive is so intense that there is no time for better understanding between the mother and the child. The story shows the pain and loss the mother experiences throughout her life – first her husband, then her unfulfilled wishes tearing her up for a long time and at last the pangs of despair given to her by her son.

The Constitution and laws in India prohibit untouchability. But the Dalits still have no better alternative than to perform the traditional occupations, considered to be menial and lowly, in many places. These are also the source of income for the illiterate among them. Migration and the anonymity of urban environment have in some cases resulted in upward occupational mobility among Dalits. The majority of them still continue to perform their traditional practices. Still the practice of untouchability is prevalent in most of the rural areas where the Dalit faces discrimination at the hands of dominant castes.

The present paper tries to depict this reality portrayed by Baburao Bagul, a pioneer of Marathi Dalit Literature, in his short story *Mother*.

Translations of Dalit Works

With the growing translation of works by Dalit writers from various regional languages to English, Dalit literature is poised to acquire a National and International presence. The Dalit literature, though written in different languages, in different geographical backgrounds, portrays common themes: the suffering, discrimination, exploitation and injustice:

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Poems, short stories, novels and autobiographies written by Dalit writers provided useful insights on the question of Dalit identity. Now the subaltern communities found a new name by coming together with the perspective 'Dalit is dignified' thereby rejecting the sub-human status imposed on them by the Hindu social order.¹

The Motive of Dalit Literature

The motive of Dalit literature is the liberation of Dalits, and portrayal of their struggles against casteist traditions. These writers make use of the language of the so-called outcastes and under-privileged in Indian society. Shame, anger, sorrow and indomitable hope are part of Dalit literature. Because of the age-old oppression, the expressions of the Dalit writers have become sharp and focused.

Baburao Bagul

Baburao Bagul was one of those Indian writers who are known as Dalit writers, as he tries to point out in his novels and short stories the divisive nature of the Hindu society. A pioneer of Marathi Dalit literature, he was influenced by the works of Karl Marx, Jyotiba Phule and Dr. Babasaheb Ambedkar. Baburao Bagul generally depicts men and women who are uneducated and lacking in any kind of sophistication. He portrays the stark reality of life and brings out the woes and miseries and economic inequality, which are the basis of his experience. His writings deal with the individuals who are the victims of the social system in which casteism is a dominant factor.

The Depiction of Urban Slum

Mother by Baburao Bagul is the depiction of life in an urban slum. The story revolves around a young, lower-caste Dalit widow and her son Pandu, who face many harsh realities of life. The story tells the suffering of a mother.

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The story starts with the children in a school where the teacher is teaching a poem which is about a mother. The children are carried away by the soothing and melodious voice of the teacher, which reminds them of the warmth of their mother's lap, her love and care. The poem transports them to a land where only love and joy exist. Pandu starts thinking of his mother as 'Vatsalya Sindhu', which was a river of motherly love and benediction. He realizes her greatness, the love and the care she gives him and the sacrifices she made for him. But he is soon transported back from his dreamland when one of his class mates begins to call Pandu bad names, abusing his mother. The Dalit children are always the target of the mischief for the upper caste children. Dalit children sometimes have to face discrimination and even untouchability in school. Pandu is told that his mother is having a relation with the overseer and she sleeps with him. Everyone around him calls his mother a slut. His young mind starts thinking that he has to face humiliation because of the acts of his mother and he is enraged:

Pandu's face burned with shame and anger. He felt a demonic, murderous rage rising within him. He could have killed them, murder them all in cold blood. It was good to think them lying together in a pool of blood. It was short-lived joy, however. He remembered that he was an orphan, now that his father was dead, and his mother an unprotected widow. He was afraid that Dagdu, their neighbour, would pick fight with his mother, try to strip her sari....Rage gave way to infinite helplessness and he felt spent. (Ramakrishna 2005: 217)

His father was dead and his mother an unprotected widow, so his neighbour Dagdu would always try to molest and rape his mother. After coming back home Pandu realizes that he had not had his meals and on finding out nothing to eat he starts crying. When

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nobody turns up, he realizes that his mother is quite changed these days as she doesn't come home early and has stopped caressing him. Even after returning home she spends most of her time in caressing herself, pampering her own beauty, her clothes, and the new silver chain around her neck. As Pandu remembers her actions, he is fearful and suspects her, believing the overseer maybe her lover. Still, he doesn't cry because if he starts crying, the neighbouring women would come and start abusing his mother.

The Widow

Being a poor helpless and above all an untouchable widow, is a curse. People start abusing and pointing fingers at her for every single act. A woman has her own share of universal suffering as all other women, and the fact of being a Dalit woman adds more social, religious and cultural exploitation to the list.

Pandu's neighbour Dagdu comes to his place and starts abusing his mother calling her a whore, describing his desire for her:

The whore of a slut! You're shameless enough to make the rounds of the shops with that pimp, with your child sitting alone at home! If that was what you needed you only had to tell me-I'd have obliged. And here I've been burning with desire for you, all these years....But now....³(*Mother*)

Pandu is scared, but when Dagdu, jealous and lustful, insults his mother, Pandu loses his childlike feelings and the murderous fire continue haunting him and he feels like hurling a heavy rock at Dagdu. He is full of anger and hatred but he thinks disdainfully that whatever Dagdu has told is right.

The child begins to suspect her more, and along with fear, contempt and anger, slowly take form in his mind against his mother. The burden of all such thoughts is so heavy and depressing that Pandu could not suppress his tears and starts crying, screaming and throwing himself on the ground. The neighbouring women, who come to show him sympathy, start abusing his mother, turning his suspicions into reality. When Pandu's mother comes home and sees her neighbours at her doorstep with her son, she is sure that they must have turned even her son against her. At that moment she recalls her cruel, drunken, and deceitful husband whose image she sees on Pandu's face. This cruel image intensifies her anger just when she is now feeling secure in her newfound love.

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With the newfound knowledge about his mother from his neighbours Pandu starts observing changes in his mother: her tightly worn expensive sari, the careless confidence, the defiance in her walk, her lips redder. He is now convinced of her guilt.

The suspicion in Pandu's eyes, constantly remind her of her TB-ridden, suspicious, nagging husband, because of whom she had undergone extreme physical and mental torture. She feels she could even wish to murder her son too when she recognizes in his eyes the same dark suspicion she has seen earlier in the eyes of his father. The memory of the days, when her husband was alive, makes her restless. She remembers the days when she used to work at the construction site, hauling bricks and cement. She was beautiful and so her husband kept on thinking that she might have sold her beauty. He kept on scrutinizing her body. Without any reason he would look for clues to prove that she was committing adultery. He even wished her to lose a lot of blood, become lame or deformed, ugly and, therefore, despite his ebbing strength he would hit her, aiming at her face, her nose, head, and eyes. He even threatened to kill her when she was asleep. He blamed her for all his misfortune and held her responsible for his estrangement from his brother for he had looked at her with lust in his eyes. He was so merciless that one day when she suddenly woke up she found him heating up the iron in fire to brand her body with the hot iron. He didn't accept her proposal to return to their village. After his death men were drawn to her but she refused to accept their proposals. They tried to rape her, and then other women waged a war against her.

But, when she realizes that Pandu is vulnerable and is totally dependent on her, she asks him about his health. But Pandu, unable to cope up with the love she bestowed upon him after so many months, refuses to answer. He is so furious that he refuses to accept the new clothes she has brought for him. The clothes remind him of the last Diwali, when on wearing the new clothes brought by his mother the neighbours jeered at him, abusing his mother that she must have done a great business getting many a rupee from each customer:

‘Good for you!’ They jeered at him. Your mother’s business seems to be doing very well. What a great rush there must be. Five rupee for each customer.⁴ (*Mother*)

Dagdu had almost succeeded in removing her clothes and Pandu had thrown a stone on his mother's tormentor. Ever since he had stopped wearing new clothes and now when he sees the clothes brought by his mother, only anger arises in him. The memory of all the

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abuses and the embarrassment makes him feel more disgusted towards his mother, and he runs out of the house, calling her a whore. His mother is deeply hurt to hear it from his mouth. Since the death of her husband, all those years she had lived the life of a widow though she was proposed to by many men who were wealthy and could have provided her everything for a happy life. But she sacrificed her happiness for Pandu, hoping that when he grows up he would support her and her sufferings would come to an end. She had spent ten long years as a widow and had tried so hard to love Pandu. She had lived only for him till the overseer came along last year. Ever since she lost her husband, she has given her all for him, and now this son has turned against her. She starts crying helplessly.

Betrayed by Everyone

She feels betrayed by everyone, her husband, her son and the men around her. She locks the door of her home, afraid that Dagdu would come to molest her and waits silently for her son to return. After some time she thinks that, Pandu may not return forever, watching the locked door. At that moment, the barking of the street dogs makes her think that surely her son has returned and she happily opens the door. But instead of Pandu, she finds the overseer standing there. The overseer hugs her and her unfulfilled desires of ten years make her respond to him. She is so overwhelmed by it that she does not even hear her son's timid knock and cry for her. Pandu, heartbroken, runs out of the house. When she realizes this she tries to go out to stop her son from going, but the overseer does not let her go. She tries desperately to get free but like a person stuck in a quagmire, she finds release impossible. The story ends thus on a note of despair and helplessness in the life of a subjugated, illiterate Dalit woman.

Truthful Reflection

Social exclusion, lack of effective legal protection and socio, economic and cultural exploitation has kept the Dalits at sub-human living conditions for centuries. Nowadays, many among the younger generation are able to make better lives for themselves, through education and job reservation provided by the Constitution of India. Baburao Bagul portrays the harsh realities of life in an uneducated Dalit widow's life. He shows the struggles of women in his works. His stories show the external as well as internal conflict faced by the Dalit women. Bagul portrays the fall as well as the rise of women characters and depicts them as their own selves truthfully.

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Some Perspectives on Bilingualism vis-a-vis Language Disorders

Vishnu Nair, MASLP

Sapna Bhat, Ph.D.

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The below information provides a brief summary concerning some recent findings in bilingual research. The material is not a typical research article. However; is intended to generate awareness for educators, speech pathologists and others regarding bilingual research.

Have you ever wondered what speaking more than one language can bring to you?

Language is of course the primary mirror to understand another culture and hence there are obvious cultural and social advantages associated with speaking two or more than two languages (bi/multilingualism). More than the ability to just communicate in one language, being bilingual provides us with a certain amount of broadmindedness, adaptation, tolerance and acceptance in life besides other advantages such as more employment opportunities, etc.

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Historical Perspectives on Bilingualism

Despite the obvious cultural and social advantages, historically bilingualism was often viewed as disadvantageous with many studies showing poor performance in bilingual children especially on a number of verbal and nonverbal intelligence tests. Leading bilingual researcher Grosjean (2011) said that thirty years ago he was confronted with many views prevailed against bilingualism such as an overall delay in cognitive ability, poor vocabulary development in bilinguals etc.

Research in the Past Decade

Recent research has challenged the traditional view against bilingualism. Ellen Bialystok, a pioneer in developmental psychology from York University, argues that being bilingual makes an individual better at certain cognitive processing tasks (such as selective attention and inhibitory control) which are collectively known as executive functions (see Bialystok, 2009 for a detailed review on this). This means that a bilingual individual may be better than a monolingual individual in task requiring more attention, inhibition, problem solving, etc. The most interesting finding from her research is that, these skills develop in early childhood as a result of prolonged experience with two languages and persist till adulthood. Some other remarkable findings from her research demonstrate that bilingualism may even act as a lifelong protective mechanism against cognitive decline and may even prevent the onset of dementia for at least 4 years.

Opposing Views against a Bilingual Advantage

However, there are some opposing views against the story of a bilingual advantage. A 2007 article published in developmental science titled “What did Simon say? Revisiting the bilingual advantage” by Morton and Harper (2007) suggests that the differences in monolingual and bilingual cognitive ability may be an actual reflection of differences in socio-economic status (SES) between monolinguals and bilinguals. They claim that the previous studies that reported a bilingual advantage did not control SES and since the association between wealth and cognitive ability is fairly documented, controlling SES may reduce a bilingual advantage.

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Bialystok (2009) in her response to Morton and Harper (2007) refutes their claim. In what she termed as claiming evidence from non-evidence, she argues that the results of Morton & Harper (2007) cannot be taken into consideration as their experiment suffered from methodological setbacks such as a weak design. Most importantly the children participated in the study were not matched for their ages. It should be also noted that there are a large number of other studies that established a bilingual advantage and substantiated the claim of superior executive functioning for bilinguals on a number of cognitive processing tasks.

Differences in Ethnicity- Indian and Canadian Bilinguals

In another study, Bialystok & Viswanathan (2009) compared the performance of bilingual children from similar SES but with different cultural backgrounds to see if the bilingual advantage is rooted in differences of ethnicity and culture. Bilingual children from India and Canada along with monolingual Canadian children were compared for a number of executive functioning tasks. Irrespective of their ethnicity, both groups of bilinguals outperformed monolinguals on all measures of executive control. It appears, therefore, that bilingualism could be one of the strong factors associated with enhanced cognitive control and other factors such as differences in SES and ethnicity could not give a convincing explanation for a bilingual advantage.

Language Learning Advantage in Bilinguals

There are some other remarkable studies which indicate that a bilingual advantage is not just limited to cognitive processing but may even extend to task requiring language learning such as word learning ability. Kaushanskaya & Marian (2009) suggest that bilinguals consistently outperformed monolinguals while learning the translation of non-words. Research in this direction will provide an understanding concerning the untapped language abilities in bilinguals and also provide us with likely explanations behind an association between executive functioning and language learning abilities.

Bilingualism Rescues Poor Children

In a more recent study, researchers have found that bilingualism enriches the poor children. Engel de Abreu et al (2012) examined executive functioning in monolingual children and bilingual children from low-income families and found better performance for poor children in measures of cognitive tasks. What in fact bilingualism does is not just facilitating a cognitive advantage, but preventing the poor children from a cognitive handicap which would have been otherwise inevitable as a result of poor living conditions and wealth.

Advantage or Disadvantage - How does it Matter to a Speech Language Pathologist (SLP)?

There is, of course, a lot of evidence for a bilingual advantage but it will be interesting to examine the specific relationship between bilingualism, cognitive flexibility and language learning. This is particularly relevant for speech language pathologists as many of us often encounter bilingual patients with significant language and cognitive impairments.

There are also other issues which we face in our daily therapy settings. It was once assumed that speaking two languages with a bilingual child will result in language confusion and may further boost overall language impairment and cause a delay in language development. This argument is overly contentious and it is time to dispel such myths.

The argument that bilingualism causes language delay, especially specific language impairment (SLI) is now debunked by researchers like Johanne Paradis from University of Alberta (Read Paradis, J., 2010 the interface between bilingual development and specific language impairment for a detailed review on this). Hence we have enough evidence to suggest that bilingualism neither causes a language delay nor result in language confusion rather it only gives certain advantages on specific cognitive processing skills.

However, irrespective of the overwhelming evidence, it is often observed that educators and therapists alike suppress the home language of a bilingual patient and encourages speaking in a non-native and less proficient language (In Indian context, this preference is mostly for English). It is important to understand that parents or caretakers of a bilingual patient should

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also speak in the language in which therapy is carried out. Otherwise it will lead to natural language suppression at home which will further reduce the individual's opportunity to communicate with siblings, spouse, parents, grandparents, etc.

Indian Context - Bilingualism and Language Disorders

Researchers like Chengappa (2009) have argued over the years that even in worst cases with cognitive impairment (such as children with mental retardation) bilingualism may not be detrimental. In her Keynote address at International symposium on bilingualism, Netherlands (2009), she suggested that there is a strong need to nurture both the languages from the beginning and it will be beneficial in the long run (for children with mental retardation, autism, SLI, etc.). She alerts that Indian researchers should be more aware about the language differences as it has already caused a considerable amount of miscommunication among speech pathologists. For example, agrammatic patients make a number of omission errors in English whereas the errors may appear in the form of substitutions in richly inflected Indian languages. Therefore the severity of English Broca's aphasics may be more than their non-English speaking counterparts. Such issues related to language differences need to be addressed during the assessment of a bilingual patient.

Gist of What Has Been Discussed So Far

Earlier research often viewed bilingualism as disadvantageous and this led to the assumption that bilinguals suffered from a cognitive-verbal handicap.

Recent evidence suggests that bilinguals exhibit a superior performance on a number of cognitive processing tasks. However, the conflicting view indicates that the reported bilingual advantage could be a reflection of differences in participants' socio economic status.

But evidence also suggests that differences in SES may not be a convincing explanation for a bilingual advantage. Bilingualism has been found to prevent cognitive handicap in poor children from low-income families and irrespective of SES, ethnicity and culture bilinguals showed an advantage.

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Recently, studies that have attempted to disentangle the relationship between bilingualism and language learning have demonstrated a bilingual advantage in tasks like novel word learning (e.g., Kaushanskaya & Marian, 2009).

Message for Indian Speech Language Pathologists

Assessment and treatment approaches in a bilingual patient should be carried out only after acquiring specific understanding about the languages involved (at each level - phonology, semantics, morpho-syntax). The treatment approaches should not follow merely an Anglo-centric approach.

Any tendency to suppress the home language should be discarded. Such trends should not be encouraged even in therapy settings. A language impaired bilingual individual should be allowed to communicate freely in both the languages. There should be a strong need to nurture both active languages in a bilingual patient.

Some Broad Interesting Future Research Questions

There is a need to understand the interaction between specific cognitive processing skills and bilingualism. Bilingual cognitive advantages and its impact on language learning ability is a promising area for future research.

Case specific research is needed to understand how bilingualism interacts with language impairment such as autism, SLI, aphasia and hearing impairment. It will be also interesting to explore whether bilingualism can act as a protective mechanism against cognitive decline in bilingual individuals with aphasia.

In Indian context, there is a need to understand multilingualism. More than bilingualism, we have all the necessary conditions to explore multilingualism and its impact on cognitive-linguistic abilities. It will be very interesting to examine whether bilingualism can prevent a cognitive decline in Indian children from low-income families. Therefore an interesting direction for future research would be to assess various cognitive-linguistic abilities in children from low income families in particular for tasks involving inhibitory control and

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language learning abilities (e.g., novel word learning). This will have a lot of important consequences for therapeutic assessment and intervention.

Take Home Message

There is nothing disadvantageous about being bilingual. Bilingualism in fact enriches culturally, socially and positively influences certain cognitive processing skills.

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Acoustic Characteristics of Vowels in Telugu

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I hereby declare that this thesis entitled “Acoustic characteristics of vowels in Telugu” is outcome of the original research work undertaken and carried out by me, under the guidance of DR. B. Rajashekhar, Dean, Manipal College of Allied Health Sciences, Manipal University, Manipal. I also declare that the material of this dissertation has not formed in anyway, the basis for the award of any degree or discipline of this country or any other country.

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*Rose is beautiful, by its layers of petals
Rose is colorful, by its layers of petals
Rose is adorable, by its layers of petals*

*My life, existence, and little contribution to Knowledge Ocean is only
Because of layers of great souls surrounding me
Without their love, support, sacrifice, my existence is meaningless*

I dedicate my work to all those great SOULS.



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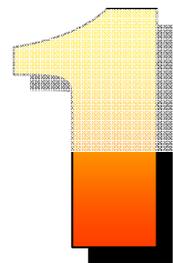
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Introduction

CHAPTER 1

INTRODUCTION

I have not come here to accomplish miracles, but to show, lead the way, help, on the road to a great inner change of our human nature, the outer change in the world is only possible if and when that inner transmutation is effected and extends itself.

– Sri Aurobindo

1.1 Introduction

Speech, a form of verbal communication, is unique to human beings. This unique act of communication has drawn the attention of linguists, psychologists, speech scientists, speech language pathologists, audiologists, neurologists, computer scientists and other professionals involved in human communication in understanding and visualizing the speech. Stetson (1928) said that “speech is movement made audible”. In other words, movement of vocal folds generates audible sound which is further modified by the articulators (tongue, lips) to produce speech. The speech thus produced is a complex acoustic signal, with diverse applications in phonetics, speech synthesis, automatic speech recognition, speaker identification, communication aids, speech pathology, speech perception, machine translation, hearing research, rehabilitation and assessment of communication disorders and many more.

Speech sounds consist of vowels and consonants. Vowels carry maximum energy and play a major role in speech understanding. Consonants carry less energy but have meaningful message in speech communication. “Vowel is a conventional vocal sound in the production of which the speech organs offer little obstruction to the air stream and form a series of resonators above the level of the larynx” (Mosby, 2008). The organs involved in the production of speech sounds develop over the period of life span, and there are structural variations among genders and races, which contribute in producing different vocal quality. Linguistic, syntactic and phonological rules of each language further

contribute to the complexity of the speech sound. Ladefogeds' (1975) comments that the vowels of different languages though perceived as same, with subtle acoustic differences between them, have relevance to the study of their acoustic and temporal characteristics in different languages and age groups. Information on acoustic characteristics of speech sounds will further enable understanding their articulatory nature and their perception (Pickett, 1980). Analysis of the acoustic characteristics of speech sounds of Indian languages is needed to understand their production and perception (Savithri, 1989). It will further be useful in perceptual studies, speech processing strategies, diagnosis and rehabilitation of various communication disorders.

1.2 Telugu Language

Telugu belongs to the South Dravidian group of languages (Krishnamurti, 2003) and is the second most widely spoken language in India (Hussain, Durrani & Gul, 2005). Article 343 of Indian constitution recognizes Telugu as one of the 22 official languages in India and it has recently been declared as an official classical language (Wikimedia Foundation, 2008a). Known as the "Roman of the East", it is very easy to learn, speak and write. It is widely spoken not only in the state of Andhra Pradesh* but also in the neighboring states, viz., Karnataka and Tamil Nadu. Since a considerable number of Telugu speaking minorities live in other states of India and other parts of the world viz., Maharashtra, Orissa, Madhya Pradesh, West Bengal, United States of America, Australia and Europe, Telugu speaking population as a group is high across the country and the world.

Andhra Pradesh consists of three distinct regions: Coastal region, generally called Andhra, Interior region, known as Rayalaseema and the Telengana region. The three ancient languages, Sanskrit, Persian and Urdu have had their own influence on the language and is reflected in Telugu dialects from different regions of Andhra Pradesh. Telugu has many dialects; however, they are largely grouped into three, viz., Telengana, Coastal Andhra and Rayalaseema (Prahallad & Patel, 2006; Wikimedia Foundation, 2008d). On the basis of vocabulary studies (Krishnamurti, 1998) there are four dialects – Northern (Telengana), Southern (Rayalaseema), Eastern (Coastal), and Central (Andhra). Modern standard Telugu, which is used in the literature and mass media, is based on the

* One of the 28 states of India.

dialect of literate people of the central area. The dialect of the coastal districts is accepted as the standard variety for all written purposes and formal discourses.

Officially, there are eighteen vowels, thirty-six consonants, and three dual symbols in Telugu (Wikimedia Foundation, 2008c). In modern Telugu, two short and long vowels (/æ/, /æ:/) were introduced by Krishnamurthi (1961). According to Nagamma Reddy (1986), ten vowels (long and short: i, e, a, o, u) and seventeen consonants (six plosives: p, b, t, d, k, g; two retroflex stops: t₁, d₁; two affricates: tʃ, dʒ; two fricatives: s, ʃ; two nasals: m and n; one lateral: l; and two semi-vowels: /w/ and /y/) can be said to represent the common core of Telugu language.

1.3 Vowel Characteristics

The acoustic theory of speech production proposed and expounded by Fant (1960) views speech as the product of source and filter or transmission function. Vowels are produced by voiced excitation of the open vocal tract. During the production of a vowel, the vocal tract normally maintains a relatively stable shape and offers minimal obstruction to the airflow. The energy thus produced can be radiated through the mouth or nasal cavity without audible friction or stoppage. In other words, during the vowel production, the tongue and articulators are so positioned as to create a uniform cross-sectional area along the length of vocal tract. As the vocal tract changes in length for various vowel positions, the resonance frequencies change in odd-quarter wavelength formula (Kent & Read, 1995). Hence, longer vocal tract has lower resonance frequencies and smaller vocal tract, higher resonance frequencies, respectively.

Vowels are classified based on the tongue height, position of the tongue, lip position, soft palate position, phonemic length, articulators' tension and pitch. They are generally classified as high, mid, low based on the relative height of the tongue; front, central, back based on the relative position of the constriction of the tongue in the oral cavity; spread, rounded, unrounded based on the relative position of the lips; nasal and oral based on the position of the soft palate; short and long based on the phonemic length of the vowel; lax and tense based on the tenseness of the articulator; and high, mid, low based on the relative pitch of the vowel.

Acoustically, vowels are characterized by changing formant pattern, formant bandwidth, duration, amplitude and fundamental frequency. Among these, it is believed that formant pattern, duration and fundamental frequency play a major role in vowel perception (Pickett, 1980). In Indian languages, vowels are modified for quantity, quality and other distinctive features. In certain Indian languages, the phonological contrast between the pairs of vowels has distinguishing features in quality and quantity or both (Nagamma Reddy, 1998).

1.4 Speech Analysis

Earlier acoustic analyses used non-digital or analog methods while currently, with the technological advances, computers are being used widely. In 1920s, 1940s and 1950s, Oscillograph and Spectrograph were commonly used respectively to analyze the speech signal. With the introduction of Digital Signal Processing (DSP) in 1970s, there has been a marked improvement in techniques of speech analysis. Various techniques, such as Waveform analysis, Fast Fourier Transform (FFT)/Linear Predictive Coding (LPC), Pitch extraction, Digital Spectrogram, Cepstrum etc., are being used to analyze the speech signals.

Acoustic analysis of speech helps in early identification (Bosma, Truby & Lind, 1965) differential diagnosis of various communication disorders (Hoasjoe, Martin, Doyle & Wong, 1992; Premalatha, Shenoy & Anantha, 2007; Tomik, Krupinski, Glodzik-Sobanska, Bala-Slodowska, Wszolek, Kusiak et.al., 1999; Rosen, Kent, Delaney & Duffy, 2006); laryngeal diseases (Murry & Doherty, 1980), understanding phonological process and vowel space in hearing impaired (Duggirala, 1995, 2005), assessing progress in the rehabilitation process and to improve naturalness and intelligibility of artificial speech (Nagamma Reddy, 1998).

Acoustic characteristics of vowels are generally studied based on their Fundamental Frequency, Formant Frequencies, Vowel Duration and Intensity. Acoustic studies illuminate the subtle differences in the production problems experienced not only by the hearing impaired but also in normal individuals and different languages (Edward & Valter, 2006 & 2007; Duggirala, 1995; Ladefoged, 1975).

1.5 Acoustic (Temporal and Spectral) Characteristics

1.5.1 Vowel Duration

Vowel duration may not enable identification of any individual vowel, but does help the listener to distinguish spectrally similar vowels or place vowels in large categories (Kent & Read, 1995). Klatt (1976) based on his experiments reported that, factors such as tense-lax feature of the vowel, vowel height, syllable stress, speaking rate, voicing of a preceding or following consonant, place of articulation of a preceding or following consonant and various syntactic or semantic factors influence the vowel duration.

Nagamma Reddy (1986) reported that, the ratio of short and long vowel duration in word-initial to word-medial vowels of Telugu is more than 1:2. In a single case study, on the duration of vowels in Telugu in different consonant environments, Girija & Sridevi (1995) reported that the duration of a long vowel is approximately twice the duration of a short vowel and the ratio between the short and long vowels is 1:2.1. The longest among short vowels is /o/ and the shortest is /u/ and the longest among long vowels is /a:/ and the shortest is /e:/. These studies do not reflect the vowel duration in different age groups, gender variations and dialectal variations.

1.5.2 Vowel Fundamental Frequency

Vowels are produced by the sustained phonation and variation in the oral cavity. The fundamental frequency (F0) depends upon the tension on the vocal folds, effective mass of the vocal folds, and the sub-glottal pressure. The effective mass of the vocal folds is progressively larger from children to women to adult males, which in turn affects the fundamental frequency (Pickett, 1996). The fundamental frequency varies not only with reference to the gender but also varies for different vowels (Kent & Read, 1995). It also varies based on the linguistic stress, speaker's emotion and intonation. Based on the height of the vowel, it has been reported that high vowels have higher fundamental frequency than the lower vowels (Lehiste & Peterson, 1961; Peterson & Barney, 1952).

The most significant factor influencing F0, as reported, is the tongue height (O'Shaughnessy, 1976; Thorsen, 1976; Pierrehumbert, 1980). Studies have revealed that with the tongue position being high in the oral cavity, the tendency is to have higher

fundamental frequency than for the low vowels. Venkatesh (1995) reported that females have one octave higher F₀ than males and that the F₀ was significantly different across the vowels in Kannada, another Dravidian language. He also reported that F₀ increases as the tongue height increases. As reported in the literature for English and Kannada for understanding the variations of F₀ across the age group, height of the vowel and dialectal variations do not exist in Telugu.

1.5.3 Vowel Formants

The formants also referred to as the natural frequency of the vocal tract depend on the shape and size of the tract during the production of vowels (Fant, 1960; Fry, 1979). During the production of vowels in our vocal tract, there are infinite number of formants, but for practical purposes, only the lowest three to four formants are of interest and are extensively studied. Each formant is labeled as F₁, F₂, F₃, F₄... and are described by two characteristics. They are the center frequency, also known as the formant frequency and the bandwidth (the breadth of energy in the frequency domain). The formant frequencies of a vowel relate to the observable features of the articulatory activity used in the generation of the vowel.

In general, low vowels have a high F₁ frequency and high vowels, a low F₁ frequency. Back vowels have a low F₂ and typically a small F₂-F₁ difference, whereas front vowels have a relatively higher F₂ frequency and a large F₂-F₁ difference. General rule of thumb is that F₁ varies mostly with tongue height and F₂ varies mostly with tongue advancement, with exceptions however (Kent & Read, 1995).

In Telugu, all vowels, except /o/, can occur in all the three positions of a meaningful word (Initial, Medial and Final). It has been reported that F₃ is considerably higher in long vowel series than in short vowel series. F₁ is slightly higher for short vowels (except for /a/) than for long vowels. F₂ is also higher for front long vowels than for corresponding short vowels (Nagamma Reddy, 1986). Other studies (Kostić, Mitter & Krishnamurti, 1977; Girija & Sridevi, 1995; Prabhavathi Devi, 1990) concerning Telugu do not reflect formant frequencies observed across different age groups, genders and dialectal variations.

1.5.4 Vowel Formant Bandwidth

During vowel production, each formant has a bandwidth. The bandwidth is a measure of the frequency band of a sound, especially resonance. It is noted that greater the damping of the sound, greater the bandwidth of the sound. During vowel production, each formant has a bandwidth. Usually, bandwidth is calculated based on “half-power point” or width of the formant at 3 dB below the peak. Experiments have shown that changes in the bandwidth of formants have very little effect on vowel perception. It is also reported that formant bandwidth increases with formant number. Higher formants have larger bandwidths as compared to the lower formants (Kent & Read, 1995). No studies on bandwidth in Telugu across the age groups, gender and dialectal variations have been reported in the literature.

1.6 Role of acoustic characteristics of vowels in human communication and the need for the study

Literature survey reveals that, vowels are the significant components of human speech. They carry a lot of energy and have their own unique features. Some of the features are fundamental frequency, formant frequencies, vowel duration, and formant bandwidth (Nagamma Reddy, 1998; Pickett, 1980). They play a stellar role in human communication and synthetic speech and are also influenced by developmental, linguistic, cultural, social and emotional factors (Kent & Read, 1995; Klatt, 1976; Ladefoged, 1975; Nagamma Reddy, 1998; Prahallad & Patel, 2006; Savithri, 1989; Sreenivasa Rao & Yegnaranarayana, 2004). These features are also reported to play a major role in assessment, differential diagnosis and rehabilitation of communication disorders (Duggirala, 1983-1984, 1995, 2005; Edward & Valter, 2006, 2007; Hoasjoe, Martin, Doyle & Wong, 1992; Premalatha, Shenoy & Anantha, 2007). Analysis of speech sounds is increasingly used in recent years to assess the anatomical and neuro-muscular maturation of speech mechanism (Duggirala, 1983-1984). With the help of iso-vowel lines, graphic comparisons of formant frequencies of disordered speech with normal subjects can be done (Kent, 1976) to assist in understanding the human production and perception in normal, adverse listening conditions and when used with different assistive listening devices.

Most of the studies on acoustic analysis of Telugu vowels in the literature (Kostić, Mitter & Krishnamurti, 1977; Nagamma Reddy, 1998, 1999; Prabhavathi Devi, 1990; Girija & Sridevi, 1995; Sreenivasa Rao, Suryakanth, Gangashetty, & Yegnanarayana, 2001) have been done only on adults or children, in limited consonant contexts, in limited sample size, selected from one region/dialect, with no comment on gender variations. However, these factors (age, dialectal variations, and consonant context) play significant role on the acoustic characteristic of vowels. With recent advances in the rehabilitation of communication disorders, knowledge on acoustic characteristics of speech sounds in each age group, language, dialects, and gender will assist the clinician in assessing, diagnosing and rehabilitating communication impaired individuals. The paucity of comprehensive data on the acoustic characteristics of vowels in Telugu across different age group on the most essential features (vowel duration, formant frequencies, and bandwidth), has prompted the current study.

1.7 Aim of the study

1. To investigate the temporal and spectral characteristics of vowels in Telugu language.

1.8 Objectives of the study

- a) To analyze differences in the temporal and spectral characteristics of vowels in Telugu across age groups (Group I (children): 6 to 9 years; Group II (adolescent): 13 to 15 years; Group III (adult): 20 to 30 years)
- b) To analyze the temporal and spectral differences between males and females.
- c) To analyze the temporal and spectral differences in the vowels produced by speakers belonging to different regions in Andhra Pradesh.
- d) To survey the temporal and spectral differences in the production of vowels occurring in different consonant contexts.
- e) To delineate the clinical research implications of the data within the field of communication disorders.



Review of Literature

CHAPTER 2

REVIEW OF LITERATURE

2.1 Introduction

“For mankind, speech with a capital S is especially meaningful and committing, more than the content communicated. The outcry of the newborn and the sound of the bells are fraught with mystery more than the baby's woeful face or the venerable tower.”

- Goodman (1911 - 1972)

Communication is not only the essence of being human, but also a vital property of life. Speech sounds produced by our ancestors over 100,000 years ago differ in their production, quality and also complexity of the language. Whitehead (1861), a British mathematician, rightly said *“Speech is human nature itself, with none of the artificiality of written language”*.

Communication is the process of generation, transmission, or reception of messages to oneself or another, usually via a mutually understood set of signs. Human speech communication consists of various speech sounds, which are coded. To understand speech communication, one needs to have knowledge of the speech code. The speech code differs based on linguistic rules of the language and organs involved in speech production. Normal sensory abilities are the pre requisites of the normal development of communication. Adequate vision is necessary for the development of writing, reading and non vocal communication and adequate hearing is necessary for the development of speech communication.

Speech involves producing sounds from the larynx. Human language requires both anatomical apparatus (larynx, articulatory system) and neurological changes in brain. Anthropologists and linguists believe that, modern human language developed around 50,000 years. Some scholars believe that the L – shaped tract in human skull was seen in hominid bipedalism around 3.5 million years ago. The shape of the tract and the larynx lower in the neck are necessary prerequisites for many of the sounds humans make, particularly vowels. Other researchers' view considers the lowering of the larynx as irrelevant to the development of speech (Wikimedia Foundation, 2008b).

Mastery of the speech sounds, especially vowels occurs during the first six months of life (Irwin, 1943). Vowels play an important role in human speech communication right from birth. In any language, the purpose of vowels in relation to the human speech are, to help in determining the syllable/syllabification, transmit maximum acoustic energy during the production, emphasize the meaningfulness of a sentence by preceding the content words, play important role in determining the intelligibility of speech, act as link between consonants, enable speaker normalization and play an important role in supra segmental features of speech (Vorperian & Kent, 2007).

2.2 Speech

Speech sounds consist of vowels and consonants. Both meaningful and non-meaningful speech consists of vowel sounds of varying duration. Vowels carry maximum energy in speech communication and play a major role in speech understanding. Consonants carry less energy but meaningful message in speech communication. The production of human speech is well explained by the source-filter theory, initially proposed by Johannes Müller in the 19th century and later by Fant (1960), which formed the basis for the current interpretations of speech analysis. It describes speech production as a two stage process involving the generation of a sound source, with its own spectral shape and spectral fine structure, which is then shaped or filtered by the resonant properties of the vocal tract. Glottal sound sources can be periodic (voiced), aperiodic (whisper and /h/) or mixed (eg., breathy voice). Periodic and aperiodic sources can be generated simultaneously to produce typical speech sounds such as voiced fricatives. In voiced speech, the fundamental frequency (perceived as vocal pitch) is a characteristic of the glottal source acoustics whilst features such as vowel formants are characteristics of the vocal tract filter (resonances). A voiced glottal source has its own spectrum which includes spectral fine structure (harmonics and some noise) and a characteristic spectral slope (sloping downwards at approximately -12dB/octave). The spectral characteristics of each sound thus differ based on the vocal tract filter. The source filter theory and speech organs are diagrammatically represented in Figure 2.1.

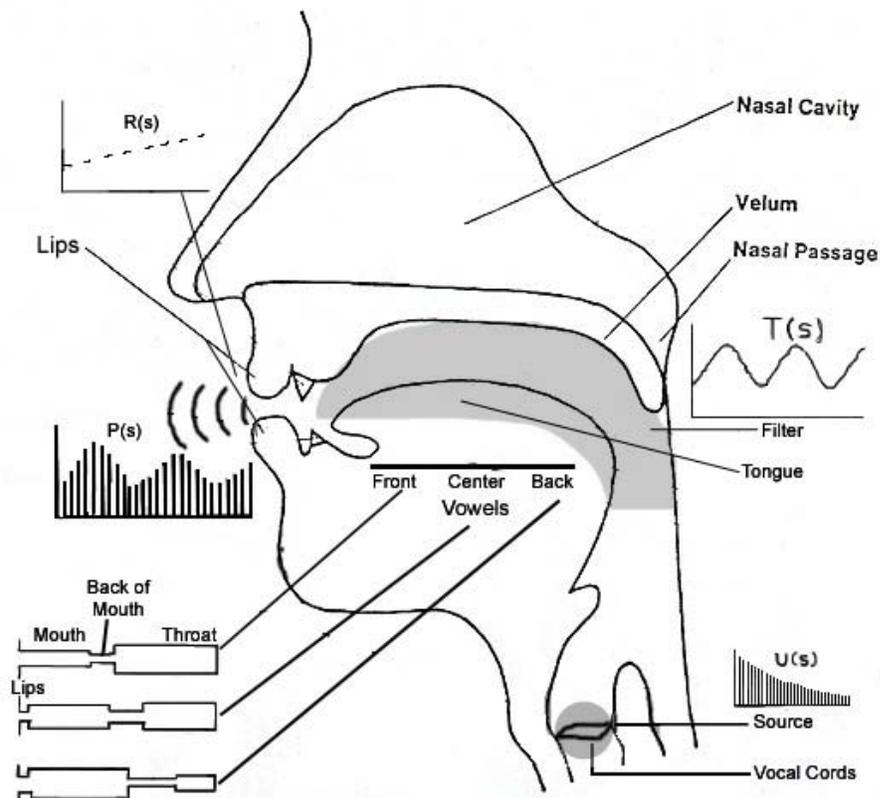


Figure 2.1: Articulatory structures involved in source - filter theory.

2.2.1 Anatomy and Physiology

In humans, the air in the lungs is pressed upon by the muscles of thorax and abdomen, resulting in its flow to the larynx. Larynx consists of vocal folds, which generate voice. This voice is modulated by the articulators in the vocal tract to produce various voiced speech sounds. The air stream from the lungs passes through a narrow constriction to produce turbulent sound or suddenly releases from a constriction in the vocal tract to generate turbulent speech sounds (fricatives) or transient speech sounds (stops). For the production of consonants, articulators constrict more than the vowels. Thus, the open state of articulators produces vowels, while their closed state produces consonants (Pickett, 1996).

“Vowel is a conventional vocal sound in the production of which the speech organs offer little obstruction to the air stream and form a series of resonators above the level of the larynx” (Mosby, 2008). During the vowel production, the vocal tract normally

maintains a relatively stable shape and offers minimal obstruction to the airflow with voiced excitation. The energy produced radiates through the mouth or nasal cavity without audible friction or stoppage. In other words, during the vowel production, the tongue and articulators are so positioned to create a uniform cross-sectional area along the length of the vocal tract.

Scripture (1935) in his study of observing the sound production of English vowels, commented that, a vowel stretch is composed of contiguous vibratory bits. Each vibratory bit consists of vibratory movements that start strong and fade rapidly. A vibration of this kind is termed as free vibration whose amplitude depends on the force that starts it, its period and its decrement and on the factors of the vibratory system itself. A vowel bit is produced by a momentary impulse and vibratory system. The impulse is the puff of air from the glottis and the vibratory system is in the air of the vocal cavity. By changing the shape, size and openings of the vocal cavity, various forms of vowel bits are produced. The walls of the vocal cavity play a role in decrement of the vibrations. Vowel production is well explained with the source filter theory (Fant, 1960), according to which, vowels are the resultant of a filtering action of the pharyngeal-oral tract on the sound source produced by the glottis.

The vowels thus produced are complex acoustic signals with amplitude and frequency information. The graphical representation of sound (in this case, vowel) and its components can be done by Spectrum. Thus, vowels can be represented by amplitude-frequency spectrum or frequency spectrum or simply, spectrum. If the sound wave consists of a fundamental frequency and its multiples (known as harmonics), then, each harmonic is represented by a line. Sound waves produced by the vocal tract to produce speech sounds in any language, can be analyzed by spectral analysis using the sound spectrograph, an instrument used for analyzing the spectrum of complex speech sounds (Pickett, 1996).

Speech sounds are produced with various pulsing rates of the vocal cords in the glottis. Each pulse causes damped oscillations of the vocal tract air column. The number of glottal pulses per second determines the fundamental frequency of the sound, and the resonances in the vocal tract are known as formants. The typical vibratory rate of glottal

pulse of an adult female speaker is about 200 per second while it is 125 per second for an adult male speaker. The simple integer multiples of the fundamental frequency are known as harmonics. The amplitude of the spectrum components are determined by the resonant frequency of the damped oscillation and by the amount of damping (Pickett, 1996).

2.2.2 *Developmental changes*

Human vocal tract develops from the time of birth to adulthood. Infant vocal tract is not simply the miniature of an adult vocal tract but also resembles that of lower primates. Infant vocal tract has an appreciably shorter vocal tract, shorter pharyngeal cavity, anterior tongue mass, a gradual bend of the oropharyngeal channel, high larynx and approximation of velopharynx and epiglottis (Kent & Ann, 1982). The anatomical development of speech organs develops most rapidly between 3 to 5 years of age and then, the development of larynx is gradual until puberty (Eguchi & Hirish, 1969). The human vocal tract differs in growth trend of segments and between genders with male laryngeal structures larger than that of female (Kahane, 1978 & Vorperian et al., 2009). In humans, from the onset of babbling until adulthood, speech production system undergoes substantial modifications. Anatomical changes, and motor control refinement, yield various acoustic patterns. The formant frequencies in children differed due to sexual differences in pharynx size, jaw opening and larynx position. Gross indices of body size resulting in larger vocal tract also contributed for the formant frequency changes in children (Bennett, 1980).

Anatomical changes and motor control refinement in children have shown to produce less intelligible speech than adults. The overall vocal tract length (from the larynx to the lips) is about 8 cm at birth and 17 cm in adult males (Goldstein, 1980). Hirano, Kurita & Nakashima (1981) have reported that, vocal fold length increases from 4 mm in the newborn to about 18 mm and 12 mm for an average man and woman respectively.

The quality of vowel depends on the shape of the cavities of the pharynx, mouth, nose and positioning of soft palate, tongue and lips. For various vowel positions, the vocal tract length varies and offer variations in the resonance frequencies. Longer vocal tract has lower resonance frequencies and smaller vocal tract, higher resonance frequencies.

Literature is replete with studies on the developmental changes occurring in human vocalization from birth to old age. From birth till one year of age, infant vocalization is dominated by vowel production. Early stages of speech development are classified as phonation stage (birth to 1 month), cooing stage (2 to 3 months) and expansion stage (4 to 6 months) (Oller, 1980). Vowels are the first sounds to be mastered by the infants, who acquire most of the vowels and half of the consonants in the second quarter of the first year. In a pilot study on English speaking American population to understand the changes in vocal tract due to aging and its acoustic correlates, the oral cavity length and volume of elderly speakers have been reported to be significantly increased as compared to their young cohorts (Xue & Hao, 2003).

From literature, it may be concluded that vowel development is expressed as establishment of a language-appropriate acoustic representation; F1-F3 more sensitive to changes due to age and possibly gender; gradual reduction in formant frequencies and F1-F2 area; reduction in formant frequency variability; emergence of differences in formant frequencies between genders by 4 years of age, becoming more apparent by 8 years and discrete by 16 years; decline in fundamental frequency after 1st year of life, with more rapid decline during early childhood (birth to 3 years) and adolescence; distinct F0 differentiation between genders is after the age of 12 years; F0 relatively stable between 3 to 12 years; maturation of velopharyngeal function by about 1 year of age (Vorperian & Kent, 2007).

2.2.3 *Acoustic Characteristics of Speech*

Acoustically, vowels are characterized by formant pattern, spectrum, duration, bandwidth, amplitude and fundamental frequency. Among these, it is believed that, formant pattern, duration and fundamental frequency play a major role in the vowel perception (Pickett, 1980).

Vowels are generally described as:

- Front, Central, Back – based on the relative position of the constriction of the tongue in the oral cavity
- High, Mid, Low – based on the relative height of the tongue

- Spread, Rounded, Unrounded – based on the relative position of the lips
- Oral and Nasal - based on the position of the soft palate
- Short and Long – based on the phonemic length of the vowel
- Lax and Tense – based on the tenseness of the articulator, and
- High, Mid, Low – based on the relative pitch of the vowel.

Vowels are also classified based on their fundamental frequency and formant frequencies. Many models have been proposed using different combinations of fundamental frequency and formant frequencies. Miller (1989) and his colleagues classified vowels based on perceptual “target zones” in three dimensional space, Syrdal & Gopal (1986) based on normalization scheme and linear discriminant analysis technique and Hillenbrand & Gayvert (1993) based on quadratic discriminant classification technique.

Hasegawa-Johnson, Pizza, Alwan, Cha & Hake (2003) finding relationship between palate height, tongue height, and oral area in categorizing vowels, have concluded that, the palate height, tongue height and oral area are dependent on vowel place of articulation. A small oral area variance is characterized by smaller inter-talker area variance. In the production of pharyngeal vowels (/a/, /æ/), tongue is low in the oral cavity; however, it is higher for palatal vowels (/i/, /e/). Tongue height is not correlated with the palate height during the production of velar, uvular and pharyngeal vowels.

Among the acoustic characteristics of vowels, Fundamental Frequency, Formant Frequencies, Vowel Duration and Intensity are generally studied for the purpose of normative data and differentiation between the vowels. The vowels of different languages are perceived as same, but there are subtle differences between them (Ladefoged, 1975). With the presence of such subtle differences, it would be worthwhile to study the acoustic characteristics of vowels in each language so as to understand the differences that exist between them. Further, analysis of acoustic characteristics of speech sounds of Indian languages is the present need to understand the production and perception of the speech sound in their culture (Savithri, 1989). This will be useful, in perceptual studies, speech processing strategies and diagnosis and rehabilitation of various speech and language

disorders. The phonetic and phonemic variations seen in Indian languages and the need for studying the quantitative and qualitative data in distinguishing vowels among the languages have been emphasized (Nagamma Reddy, 1998).

The effect of dialects in a language on the vowels and vowel space are not clear and it's assumed that, the perception of sound depends upon the production. Hence, it would be useful to measure the vowel spaces and their perceptual values from different dialects. (Whalen, Magen, Pouplier, Min Kang & Iskarous, 2004). The dialect has been reported to affect production more than perception.

2.3 Speech Analysis

Earlier acoustic analysis used non-digital or analog methods while currently, with the technological advancements in electronics, computers are being used widely in the analysis of speech. In 1920s, 1940s and 1950s, Oscillograph, Fourier analysis and Spectrographs were used respectively to analyze the speech signal. With the introduction of Digital Signal Processing in 1970s, there has been a marked improvement in techniques of speech analysis. Various techniques, such as Waveform analysis, Fast Fourier Transform (FFT)/Linear Predictive Coding (LPC), Pitch extraction, Digital Spectrogram, Cepstrum etc., are being used to analyze the speech signals currently.

Analysis of speech has drawn the interest of the researchers even earlier to 20th century. However, modern history of acoustic analysis of speech began with oscillograms during 1930s and 1940s. Generally, vowels were analyzed using this method. The sounds were represented as pressure variations over time. Since they were not represented against frequency, the distinction between the speech sounds was difficult using this technique (Kent & Read, 1995).

Further advancements in the acoustic analysis have helped in developing better methods. The Henrici Analyzer is one such method that has given a better insight and further increase in the understanding of speech acoustics. Another method which provided frequency information is Filter bank analysis, which depends upon the number of filters used and their bandwidths (Kent & Read, 1995).

The limitations of earlier techniques were overcome by using variable band pass filter in the Sound Spectrograph. The first method of the sound spectrograph was proposed by Potter (1946). Koenig, Dunn & Lacy (1946) reported that, filter widths of about 200 cycles would be adequate to smooth the resonance bands for an adult male voice while 300 cycles was adopted as a compromise and adequate for most voices. They also commented that, the time and frequency dimensions of spectrograms were originally chosen so as to give adequate resolution.

The spectrogram is a three dimensional graph of time, frequency, and amplitude. Frequency is represented on the vertical axis, time in the horizontal axis and the amplitude by the degree of darkening of the frequency regions respectively. The dark horizontally running bands are known as formants. The spectrogram displays dynamic properties of the articulators during speech, unlike writing. The fundamental frequency is the lowest band represented in the spectrogram. A lower F0 results in closely packed harmonics, which means that the formants are better defined. Different styles of spectrograms are available and modern spectrographic analysis software allows fine adjustments to the various settings in order to get better resolution and better reading of parameters (Hewlett, Beck & Beck, 2006).

Spectral analysis of the speech signal has been further refined and made easier with the advent of computers and digital signal processing methods. The spectra can be computed using various methods such as the FFT, Cepstrum, LPC and filtering. Filtering, sampling and quantization are the basic operations in digitizing the speech signal. Speech analysis is faster and accurate, in addition to what earlier spectrographs did.

A speech signal, which is analog, needs to be converted to digital signal so as to be processed by the computer. This process of converting analog signal to digital signal is known as analog to digital conversion and is done by an analog to digital converter. During this stage, sampling and quantization of the analog signal are done simultaneously. Sampling is the process in which the analog signal is converted into a series of samples; the rate at which it is done is known as the sampling rate. According to Nyquist's sampling

theorem (Nyquist, 1928), if a good sampling rate is chosen, there will not be any loss of information. A sampling rate of at least twice the highest frequency of interest is recommended. Assigning discrete values/increments to a continuous varying analog signal is quantization. Higher the quantization levels, the more accurately the analog signal gets digitized (Kent & Read, 1995). Kent & Read (1995) recommended determining the highest frequency of the signal, filtering the energy above the highest frequency, sampling the signal at a rate of at least twice the highest frequency and quantizing the speech signal at minimum 12 bit (4,096 quantization levels) as necessary steps in speech signal processing.

2.4 Telugu Language and its vowel system

Telugu, one the four major Dravidian languages (the others being Kannada, Tamil and Malayalam), is the second most widely spoken language in India. (Duggirala, 2005). It is one of the 22 official languages of India, since 1966 (Wikimedia Foundation, 2008a) and is the official language of Andhra Pradesh, a state in India, formed in 1956. It is also known as the "**Roman of the East**" and is very easy to learn to speak and write.

Though some collections were found during the first century, it was only from the 7th century that clear Telugu literature emanated with the writing of Nannaya on Telugu Mahabharata in the 11th century being considered the hallmark. There has been prolific literature ever since, but the golden age is considered by many to be the 16th century, under the patronage of the "Vijayanagar" Emperor, Krishna Deva Raya (Kostić, Mitter & Krishnamurti, 1977).

The modern day writing scripts in Kannada[#] and Telugu originated from Kadamba*. This writing system is known as syllabic alphabets in which, each syllable is represented as a main unit. Syllabic alphabets consist of two kinds of graphemes: vowels and consonants. In syllabic alphabet systems, a written symbol denoting speech syllable is called as graphic syllable or a syllabogram. The speech syllable and graphic syllable differ in few languages. According to Coulmas (1999), the unit of speech syllable and the unit of written representation i.e., graphic syllable differ from one another (Duggirala, 2005).

Another Dravidian language

* Kadamba is an ancient royal dynasty that ruled parts of Karnataka (present day Uttara Kannada) during 345 – 525 CE.

Andhra Pradesh consists of three distinct regions *viz.*, coastal region, generally called Andhra, the interior region, known as Rayalaseema and Telengana region. The three ancient languages, Sanskrit, Persian and Urdu have had their own influence on the language which is reflected in Telugu dialects from different regions of the state. Telugu has many dialects; however, they are largely grouped into three dialects, *viz.*, Telengana, Coastal Andhra and Rayalaseema (Prahallad & Patel, 2006; Udaya Shankar, 1987; Venkateswara Sastry, 1990-1991; Wikimedia Foundation, 2008d). On the basis of vocabulary studies done, it has been reported that there are four dialects – Northern (Telengana), Southern (Rayalaseema), Eastern (Coastal), and Central (Andhra) (Krishnamurti, 1998). Modern standard Telugu, which is used in literature and mass media, is based on the dialect of literate people of the central area. The language of the coastal district is accepted as the standard variety for all written purposes and formal discourses.

Telugu has ten basic vowels, among which, five are short and five long (Prabhavathi Devi, 1990; Duggirala, 2005). In modern Telugu, two short and long vowels (/æ/, /æ:/) have been introduced (Krishnamurti, 1961).

The vowel /æ/, described as low front vowel, is acquiring phonemic status in the Rayalaseema dialect due to the influence of Coastal speakers. This vowel is not present in Telengana dialect. The absence of /æ/ is identified by other vowel, and also, there is no grapheme for this vowel in the syllabary (Venkateswara Sastry, 1990-1991).

Stress pattern in Telugu is peculiar in nature. The second syllable, which is generally a vowel, in a trisyllabic and polysyllabic word, is unstressed. In Coastal and Rayalaseema dialects, this unstressed vowel is retained in the form of /ə/, but not in Telengana dialect. Most of the Telugu dialects have syllable-timed rhythm, but Telengana dialect differs and appears to have stress-timed rhythm (Venkateswara Sastry, 1990-1991).

It has been reported that, in Telugu, tongue hump position in the front vowel is somewhat further forward for long vowels than for short ones and for the back vowels, it is more retracted for long vowels than for short vowels. Further, no difference between low

and front mid vowels except for quantity has been reported (Nagamma Reddy, 1998). It has also been reported that, the high and mid back vowels are rounded and others are unrounded. Open vowels had longer duration than corresponding close vowels and diphthongs about the same duration as that of long vowels. Vowel duration in Telugu is subject to a number of contextual effects (Duggirala, 2005). Normal children whose native language is Telugu are reported to acquire all the major vowel phonemes except /æ/ by 1 year 6 months (Duggirala, 2005; Nirmala, 1981). The description, frequency of occurrence, the phonetic context they appear and the formant frequencies as reported in the literature are given in Appendix I.

2.5 Vowel Duration

2.5.1 Introduction

Vowel Duration is defined as the time duration between the initial regular vibration (the appearance of the first clearly visible negative peak) to the final regular vibration (last clearly visible negative peak) associated with the vowel. Figure 2.2 depicts the vowel duration of vowel /a:/ in the word /kaaki/ in Telugu (meaning Crow).

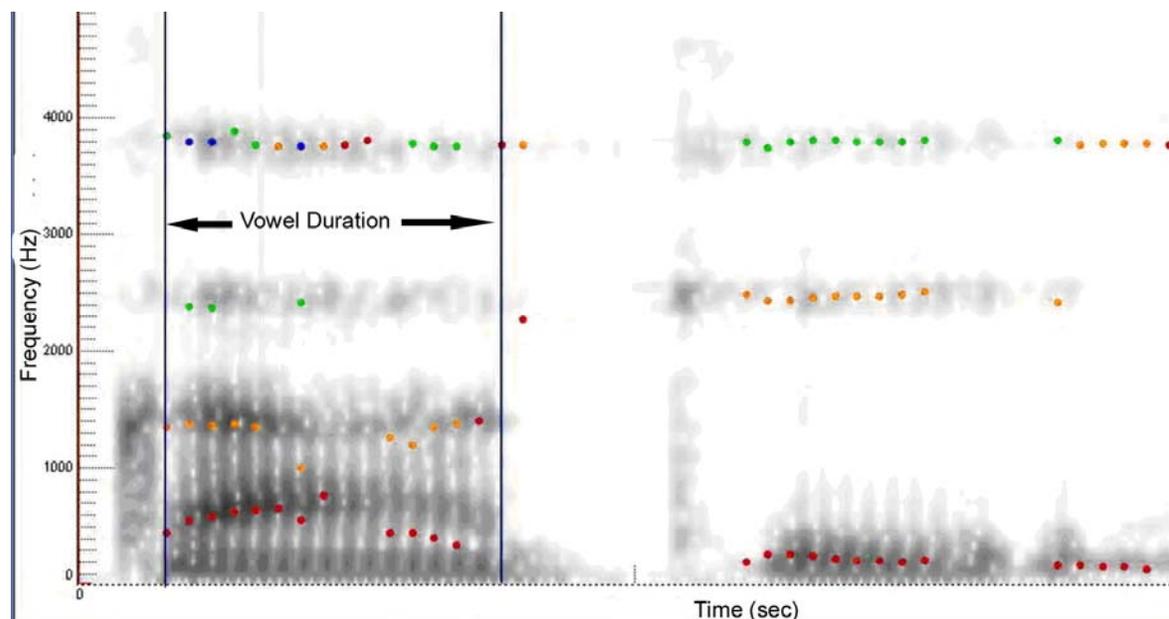


Figure 2.2: Vowel Duration of vowel /a:/

Vowel duration may be taken as the difference in time between the onset of the first identifiable period and the offset of the last identifiable period in the vocalic segment which can be better identified by wideband spectrograms using a resolving filter of 293 Hz bandwidth (Manwal, Gilbert & Lerman, 2001).

Gopal (1987) defines vowel duration as the duration from the onset of the vowel to the offset of the vowel. The onset and the offset of a vowel are determined by the presence and absence of clearly visible first two formants on the spectrogram respectively. He also commented that describing and quantifying the effects of various factors of vowel duration leads to predictive rules that could be effectively used in speech recognition and in speech synthesis.

Krause (1982) defines vowel duration as the difference between the vowel onset and vowel offset, where vowel onset is defined by the initiation of formant structure coincident with periodic energy and vowel offset defined by the end of second formant energy.

The vowel duration is an important parameter which provides information on the prosodic as well as linguistic aspects of speech. Vowel duration can be used to signal the stressed syllable (Fry, 1955), mark the word boundaries (Lehiste, 1959), identify the syntactic units (Gaitenby, 1965), to distinguish between similar phonetic segments (Denes, 1955; Lisker & Abramson, 1964) and determine phonetic quality (Lehiste, 1970).

Vowel duration and intonation play an important prosodic feature in the quality of synthesized speech (Sreenivasa Rao & Yegnanarayana, 2004). The vowel is considered as a nucleus of a syllable, and consonants may present on either side of it. The duration of the vowel is influenced by the position, phonological and contextual factors. Other factors such as gender, psychological state, age, relative novelty in the words affect its duration.

In American English, vowel duration is a major acoustic cue in the perception of voicing contrast in post vocalic consonants, and also differentiates voiced and voiceless

obstruents in adults. Not only adults but children as young as 2 years also displayed the use of vowel duration to differentiate final consonant voicing (Krause, 1982).

Vowel duration has been used as an index of deterioration of vowel precision in various adult speakers and has been reported to be reduced during normal aging (Strom, Thomson, Boutsen & Pentz, 2005).

2.5.2 Studies on Vowel Duration

Among the earlier studies in English language, Black (1949) observed that vowel duration varied between connected speech and words. He concluded that vowel duration in /hvd/ syllables are two-thirds longer than those measured in connected speech. House (1961), studied the vowel duration in American English. He used 12 American English vowels in bisyllabic nonsense utterances in 14 symmetrical consonantal contexts produced by three male speakers. The consonant environment consisted of voiced and voiceless versions of three stops, one affricate, and three fricative consonant articulations. Vowel duration was found to be more in tense vowels, vowels before voiced consonants and also in open vowels and in vowels before fricative consonant.

Research studies have shown that consonant environment influences vowel duration in English and is an important temporal constraint (House, 1961; House & Fairbanks, 1953; Peterson & Lehiste, 1960). Smith (1978) noted that although vowel durations do vary according to the consonant environment, it is the final consonant that affects vowel durational characteristics i.e., vowels preceding a voiced consonant are longer in duration than those preceding voiceless consonant. Further, vowels are longer in duration when occurring before a fricative consonant than before a plosive consonant. There also appears to be a slight place of articulation effect, in that vowels within a labial stop environment are shorter than vowels in dental, alveolar or velar stop context (House & Fairbanks, 1953).

It is recognized that the temporal characteristics of vowels are important in providing cues to the perception of neighboring consonants (Raphael, 1972). In American

English vowels, significantly shorter vowel duration was noted for men when compared to either women or children (Hillenbrand, Getty, Clark & Wheeler, 1995).

Dialectal or regional variations have an effect on acoustic characteristics of vowels. Study of acoustic measures (duration, first and second formant frequencies) from six regional varieties of American English, revealed a consistent variation due to region of origin, particularly with respect to the production of low vowels and high back vowels. Vowel system of American English is better characterized by the region of origin than in terms of single set (Clopper, Pisoni, & de Jong, 2005).

The actual duration of any particular vowel will depend on its height, its tonal or accentual properties, its position in the word, the nature of the adjoining segments, word length, grammatical complexity, speaking rate and the psychological and physical state of the individual (Maddieson, 1993). The approximate configuration for tense vowels is said to require a longer period than that for lax vowels, which results in relatively longer vowel duration for tense vowels as compared to lax vowels (Mitleb, 1984).

In English language, lax/short vowels have much shorter vowel duration than long/tense vowels. It is also reported that, the discrepancy between the longest of the short vowel (/ɛ/, 185 ms) and the shortest of the long vowel (/u:/, 225 ms) is 40 ms (Hongyan, 2007).

Research on the influence of place of articulation on duration has established that, vowel duration is dependent on the extent of the following consonant (Fischer-Jorgensen, 1964). The greater the extent of the movement to produce the following consonant, the longer the vowel duration. For example, vowels are shorter before /b/ than before /d/ and /g/, as there is no time delay in moving the articulator (i.e. the tongue) from vowel target to consonant (Vowel + bilabial). It's also reported that back of the tongue is not as mobile as the tip of the tongue which further results in durational variations.

In English, vowels preceding voiceless consonants are shorter in duration than those before voiced. Vowel duration before stops and fricatives could be due to some inherent articulatory influences (House, 1961). It's hypothesized that articulation of stop

consonants might represent less muscular adjustment from a physiological rest position of the vocal tract and might consequently require relatively less muscular effort than the production of sounds requiring more deviation from the rest position.

Halle & Stevens (1967) in their study on English symmetrical CVC syllables reported that vowels before nasals had the shortest duration. Vowels before voiced consonants had greater duration than before voiceless ones. They attributed the differences to the vocal fold movement. According to them, during voiceless consonants, there is a wide separation of the vocal folds and can be achieved rapidly, than finely adjusted smaller separation for a voiced consonant.

The influence of the manner of articulation of a consonant upon the duration of a preceding vowel seems to be largely dependent on the language of the speakers. In English, vowels are shortest before voiceless stops, and their duration increases as they are preceded by voiceless fricatives, nasals, voiced stops and voiced fricatives (House & Fairbanks, 1953).

Peterson & Lehiste (1960) reported that in some languages, the duration of a sound may be determined by the linguistic environment and may be associated with preceding or following segmental sounds, initial or final positions in an utterance, or type and degree of stress. Such durational changes in turn may become cues for the identification of the associated phonemes.

Lisker (1974), in his experiment reported that, there was a tendency for duration to increase with increase in first formant frequency. i.e., /i/ and /u/ have shorter duration than /a/. He also supported two well accepted assumptions (1) vowel duration varies directly with degree of opening and (2) vowel duration depends on the following consonant, especially on its voicing status. He provided the following explanations for the variations in vowel duration in different following consonants.

1. According to the rule of constant energy expenditure for the syllable, vowels are longer before voiced and shorter before voiceless consonants, as longer vowels and voiceless consonants need greater articulatory energy.

2. Vowels are lengthened before voiced stops to allow time for laryngeal readjustment needed if voicing is to be maintained during oral closure.
3. Vowels are shorter before voiceless consonants due to articulatory closure durations required.

Crystal & House (1982) in their study reported that, in English, duration of vowels preceding stops vary as a function of the voicing characteristic of the stop. Long (tense) vowels preceding stops had greater vowel duration compared to short (lax) vowels when preceding stops. This effect is not seen when the vowels are preceded by fricatives. The authors could not attribute the variations in vowel duration to the sample constraints, syllabic boundary characteristics or other unaccounted parameters expected to influence voicing.

Krause (1982) reported that, intrinsic vowel duration increased as the place of articulation of the post vocalic consonant moved posteriorly. She also reported that, age and voicing feature of the postvocalic consonant influenced on total vowel duration. English words spoken by 3 year old, 6 year old and adult with normal speech, language hearing were analyzed to see if vowel duration was a cue to postvocalic consonant voicing. It was observed that, vowel duration preceding voiced stops decreased sharply with age, but not with voiceless stops.

Whitehead, Schiavetti, Whitehead & Metz (1995) studied vowel duration and consonant effect on vowels in 10 normally hearing adult males. They used 8 experimental CVC words and included the vowels /a/ and /I/. It was revealed that vowel duration was longer for /a/ than /I/ and was longer when the experimental CVC final consonant was voiced. The vowel by place of articulation interaction reflected longer vowel duration before alveolar than before bilabials for the vowel /a/ but not for the vowel /I/.

Clopper et al., (2005) studied the acoustics characteristics of the vowel systems in six regional varieties of American English. In this study, acoustics measures of duration and first and second formant frequencies were obtained from five repetitions of 11 different vowels produced by 48 talkers representing both genders and six regional variety

of American English. Results revealed consistent variation due to region, particularly with respect to the production of low vowels and high back vowels.

Vowels have longer vowel duration in clear speech and the ratio was 1.4 compared to unclear speech. The interpretation is that, intelligible talkers use longer word and vowel durations than the less intelligible talkers (Ferguson & Kewley-Port, 2007).

The absolute vowel duration decreases with age (Kent & Forner, 1980; Krause, 1982; Smith, 1978). Vowel duration preceding voiced consonants decreases with increase in age (Krause, 1982; Smith, 1978).

Vowel duration in Australian female speakers has been found to be longer than their male counterparts and attributed to the rate of speaking (Cox, 2004).

In Greek vowels, high vowels are shortest and non high vowels are longest. Vowels in stressed syllables are longer and have greater intensity than in unstressed syllables. Tense vowels are relatively longer than lax vowels (Daver, 1980). In another study on five male adult Greek speakers, F0 varied from high to low corresponding to the progression from high to low tongue position in the slow-focus position only. F0 did not show any statistically significant effect on vowel quality and interactions. It was concluded that, Greek does not accept hierarchical distribution of intrinsic F0, i.e., high vowels having higher F0 than low vowels (Fourakis, Botinis & Katsaiti, 1999).

Stålhammar, Karlsson & Fant (1973) and Fant, Stålhammar & Karlsson (1974) studied the duration of short and long vowels in stressed and unstressed conditions occurring in isolation, in a /hV1/ and in connected speech of Swedish language. They found that the duration of long vowels did not change much between isolated condition (350 ms) and monosyllabic context (315 ms), but changed markedly from monosyllabic to connected speech (120 ms). Unstressed vowel duration can be represented by the following equation

$$V(\text{short}) = 30 + 0.5 \times V(\text{long})$$

for values of long vowels not less than 60 ms, averaged across all the contexts. At values of 60 ms, there was no difference between stressed long and short vowels. The researchers suggested that there existed an invariant linear relation between long and short vowel duration.

Maddieson (1993) carried out a study on Vowel duration in LuGanda Language. He found a significant difference between the short vowel and compensatorily lengthened vowels and long vowels. However, the compensatory lengthened vowels were much closer to the duration of the long vowels than that of the short vowels. Both lengthened and long vowels were twice in their length when compared to the short vowels, whereas a lengthened vowel was only 40 ms shorter than a long vowel and had 80% of its duration. The mean duration of the compensatorily lengthened vowel in words was 191 ms, whereas it was 73 ms in short vowel words and 237 ms in long vowel words.

In Sukuma language, the compensatory lengthened vowels fell almost halfway between the duration of the long and short vowels; in fact, the mean for the lengthened vowel was slightly closer to the duration of short vowel. The mean duration of the compensatory lengthened vowel in words was 200 ms, whereas in short vowel it was 129 ms. The long vowels were over twice the length of short vowels in this data, but length and vowels were only about one and half times the length of the short tones (Maddieson, 1993).

In Hebrew, as vowel height decreased, vowel duration increased. No significant differences were reported between men and women; however, duration of vowels in adults was significantly shorter than that of the vowels produced by children. Among children, vowel duration was longer in girls than for boys (Most, Amir & Tobin, 2000).

Gendrot & Adda-Decker (2007) in their study of automated formant analysis of oral vowels in eight languages reported that the tendency to reduction for vowels of short duration clearly emerges for all languages, with notably less magnitude for Arabic. They also reported that, there was no clear evidence either for an effect of inventory size on the global acoustic space between peripheral vowels. It has been shown for consonants that

large systems tend to use new articulatory dimensions and it seems reasonable that large vowel systems are also based on analogous mechanisms using dimensions such as nasality, diphthongisation or voice quality.

2.5.3 Studies on Vowel Duration in Indian (Dravidian) Languages

The Dravidian family of languages includes approximately 73 languages that comprises of Tamil (official language of Tamil Nadu state), Telugu (official language of Andhra Pradesh), Kannada (official language of Karnataka state) and Malayalam (official language of Kerala state), and are mainly spoken in Southern India and North-Eastern Sri Lanka, as well as certain areas in Pakistan, Nepal, Bangladesh, and Eastern and Central India, as well as in parts of Afghanistan, Iran, and in other countries such as Malaysia and Singapore. It has been epigraphically attested since the 6th century BC. Current review of literature is limited to the acoustic characteristics of four (Tamil, Telugu, Kannada, and Malayalam) Dravidian families of languages spoken in Southern India.

Savithri (1984) reported that a low vowel had longer duration than a high vowel in Kannada. Further, on durational analysis of Kannada vowels it was reported that, duration of long vowels (180 ms) was approximately twice that of the short vowels (80 ms) (Savithri, 1986). It was also reported that, female participants had longer vowel durations than their male participants. Vowel duration was longer when preceded by strongly aspirated stops, voiced stops, retroflex stops as compared to slightly aspirated stops, voiceless stops, and velar stops.

In Kannada, vowel duration of the test vowel in simple syllable structure was longer than the vowel in a clustered syllable. It was also reduced by the nasality of the post vocalic consonant. The ratio between the duration of short and long vowels was 1 : 1.6 (Savithri, 1989).

Venkatesh (1995) reported that in Kannada, each vowel has its own intrinsic duration. High vowels have short duration and long vowels, the longest duration; in other words, the vowel duration varied with the height of the tongue. Openness vs closeness and rounded vs un-roundedness of the vowel affected its duration. His findings also revealed

that long vowels were approximately twice the duration of short vowels. No gender variations were noted with short vowels; however, females had longer vowel duration than their male counterparts for long vowels.

Rashmi (1985) studied the vowel duration of /i/ in /VCV/ context in Kannada speaking children and found that both males and females showed consistent decrease in vowel duration as a function of age.

In Kannada language, females in all the age groups (6 – 9 years; 14 – 15 years and 20 – 30 years), had longer vowel duration than males. Age influences on vowel duration were also reported, i.e., vowel duration reduced from children to adults. Adults had longer vowel duration when compared to adolescents. However, the difference was attributed to the sample. The developmental variations were stronger in short vowels than in long vowels. Long vowels were almost twice the duration of the short vowels in adults (Sreedevi, 2000).

Jenson & Menon (1972) examined the vowel duration of Malayalam vowels which contrast phonemically in length. Acoustic parameters (formant frequency, fundamental frequency, and intensity) that contribute on vowel duration were studied. It has been reported that the average duration of long vowels was approximately twice that of their short vowel counterparts and inferred that the linguistic distinction between short and long vowels may reside in the single parameter of duration.

Jenson & Menon (1972) reported that, in Malayalam language, the average duration of each long vowel tends to be approximately twice that of its short vowel counterpart. They concluded that, in Malayalam language, the perceptual distinction between short and long vowel resides directly and singularly in vowel duration. They also found that, vowel duration of short vowels increases directly in proportion to the degree of mouth opening, with the exception of /o/ which shows the longest duration.

Velayudhan (1975) in his study of Malayalam speaking population, reported that short and long vowels had ratio within the range of 1:2. Duration of vowel, irrespective of

short or long, was found to be shorter when followed by an occlusive rather than non-occlusive consonants.

Vowel duration decreased with increase in height and central vowels were the longest in Malayalam (Sashidharan, 1995). Gender variations in vowel duration were also reported. The vowel duration in females was longer when compared to males. The vowel duration ratio of the short and long vowels was 1: 1.89. The ratio differed when the vowel position was in initial position (1: 1.85) vs medial position (1: 1.93).

Ampathu (1998) reported that there was a significant shortening of word duration as age advanced from 7-8 years to 20-25 years in Malayalam language. Vowel duration showed a similar trend, but the difference was not significant between age groups.

An attempt to develop normative data of the acoustic characteristics of 10 Malayalam vowels (Riyamol, 2007), revealed that, vowel duration of long vowels was approximately twice than the short vowels. Vowel duration decreased with increase in height. Central vowels had longest vowel duration. It was also reported that, vowel duration in females was longer as compared to males.

Balasubramanian (1981) in his study on duration of vowels in Tamil, reported that, phonemically long vowels were almost twice as the corresponding short vowels in identical environment. Vowel duration was longer when followed by retroflex consonant as compared to bilabial consonant. Vowel duration was longer in simple syllabic structure as compared to cluster. Further, open vowels had longer duration than close vowels.

In Sanskrit, duration of the long vowels (180 ms) was reported to be approximately twice that of the short vowels (Savithri, 1989). Vowels preceding strongly aspirated stops, voiced stops, and retroflex stops were longer than, slightly aspirated stops, voiceless stops and velar stops. She also found that, in Sanskrit, females had longer vowel duration when compared to their male counterparts.

Summarizing the earlier research findings, Duggirala (2005) stated that, vowel duration of a vowel is longer when preceded by voiced consonant than those preceded by

voiceless consonant; longer vowel duration is observed, when vowel is followed by an aspirated consonant than unaspirated consonant; a vowel in word final position is longer than the same vowel in the other word positions; longer vowel duration is observed when a vowel occurs as a first syllable of a disyllabic word than in trisyllabic word; a vowel has longer vowel duration in a stressed syllable than in an unstressed syllable.

Sreenivasa Rao, Suryakanth, Gangashetty & Yegnannarayana (2001) in their study of durational analysis of Telugu language, reported that, duration and intonation are two most important features responsible for quality of synthesized speech (Huang, Acero & Hon, 2001). They also reported that syllables with voicing nature have more duration variation compared to their unvoiced counterpart. Among the voiced and unvoiced categories, durational variations were noted based on manner and place of articulation and the vowel present.

Nagamma Reddy (1988) reported that vowel duration ratio in Telugu is more than 1:2 in word initial and medial position. It varies from one and half to three times depending upon the phonetic context. The vowel duration in isolation and continued speech for all the short and long vowels are represented in Table 2.1.

Table 2.1: Vowel duration (sec) of vowels in Telugu

	/a/	/i/	/u/	/e/	/o/	/a:/	/i:/	/u:/	/e:/	/o:/
Isolation	9	7	7.5	10	10	28	25	26	26.5	27
Connected speech	5	6	4.5	6.5	5.5	13	11	11	11	11

Girija & Sridevi (1995) in a single case studied vowel duration in various contexts in Telugu and the results are tabulated in Table 2.2. They inferred that, the duration of long vowel is approximately twice the duration of a short vowel and the ratio between the short and long vowels is 1:2.1. The longest among short vowels was /o/ and the shortest was /u/. The longest among long vowels was /a:/ and the shortest was /e:/. A low-open vowel was longer than a high-close vowel. The vowel before a voiced consonant was longer than the vowel before a voiceless consonant. The vowel /a/ before voiceless consonant was longest

and /o/ is the shortest. The vowel /e/ before voiced consonant is longest and /i/ is the shortest.

Table 2.2: Vowel duration (ms) of the short and long vowels in the initial position

Vowel	/i/	/i:/	/e/	/e:/	/a/	/a:/	/o/	/o:/	/u/	/u:/
Duration (in ms)	86	178	87	176	80	217	129	200	77	183

Prabhavathi Devi (1990) reported that, the duration of a long vowel is approximately twice the duration of the corresponding short vowel. The ratio between short and long vowel is 1:2. Table 2.3 gives the duration values of ten long and short vowels and their ratio.

Table 2.3: Duration of the short and long vowels

Test Vowel	Duration (ms)	Ratio
i/i:	93/223	1:2.3
e/e:	103/207	1:2
a/a:	107/253	1:2.3
o/o:	143/243	1:1.6
u/u:	90/187	1:2

The open vowel /a:/ is the longest of all the vowels in Telugu. Front vowels /i:/, /e:/ are slightly longer than /u:/, /o:/. The vowel followed by a voiced consonant is longer than the same vowel followed by a voiceless consonant. Vowel that occurs after an aspirated plosive is shorter than the one after unaspirated plosives. In Telugu language, the duration of the vowel is longest when it occurs in the final position of the word as compared to its length in initial and medial positions. The syllabic structure also influences the vowel duration. The duration of the vowel in the first syllable of a disyllabic word is the longest when compared to the same either in trisyllabic or tetrasyllabic words. Suprasegmental features such as stress have a significant role in shaping the vowel duration (Prabhavathi Devi, 1990).

In Telugu, there is interaction between phonation type and vowel duration. Vowel duration is shortest when it occurs before voiceless aspirated and longest when it occurs before voiced unaspirated consonants. Shorter vowel duration is noted before consonant sequences (including germinates) as seen in most languages (Nagamma Reddy, 1999).

2.5.4 Clinical importance of Vowel Duration

Cervera, Miralles & Álvarez (2001) based on their study of acoustical analysis of Spanish vowels produced by laryngectomees reported that, the vowel duration of the five Spanish vowels in patients with Tracheo-oesophageal shunt were longer than the other population studied.

Manwal et al., (2001) in their study of understanding of which of the acoustic characteristics contribute to better perception in alaryngeal speakers found that, vowel duration, though longest in the esophageal speakers as compared to normal was not used by the Cantonese speakers in perception.

Variations in the vowel durations were examined in order to examine the role of hearing status on regulating coarticulation in adulthood in hearing impaired and cochlear implantees. The implant users had reduced vowel duration, than prosthetic hearing aid users but consistently longer than those of the hearing control speakers. No evidence was found in reduced vowel duration in cochlear implantees. However, it has been suggested that implant users may be trying to enhance intelligibility by speaking slowly (Lane, Matthies, Perkell, Vick & Zandipour, 2001). In a study that used duration as one of the parameters to assess the speech production accuracy and perceived intelligibility following disruption in auditory feedback in cochlear implantees, it was revealed that cochlear implantees rely on the auditory cues provided by a cochlear implant to control and modify duration to maintain speech intelligibility (Poissant, Peters & Robb, 2006).

Duggirala & Barbara (2007) used vowel height, vowel place and vowel duration as contrast measures in studying the perceptual factors in phonological disorders. The authors have stated that, information on different contrasts in different languages which are simultaneously in use, will not only help in planning and monitoring the progress during

therapy in phonologically disordered individuals but also in understanding the robustness of the clues in normal hearing individuals with different background noises.

Collins, Rosenbek & Wertz (1983) in their spectrographic analysis of apraxic speech, reported that, vowel duration was significantly longer in apraxics as compared to normal speakers. However, the vowel duration decreased as length of the word increased. They interpreted that vowel reduction is a robust phenomenon which resists impairment in apraxia of speech.

Studies on vowel duration and their role in perception will help in understanding the process for normal perceptual development in normal and clinical population. Further, this data will direct diagnostic and therapeutic applications with speech and language impaired children (Krause, 1982).

2.6 Fundamental Frequency

2.6.1 Introduction

Fundamental frequency of voice is the acoustic correlate of the frequency of vocal fold vibration. The frequency at which the vocal folds vibrate will determine the fundamental frequency of the sounds generated by a particular individual. Any voiced speech sound has a fundamental frequency. Vowels are produced by the sustained phonation and variation in the oral cavity. The frequency at which the vocal folds vibrate determines the fundamental frequency of the voice, in this case the vowel. Acoustic analysis of vowels facilitates the study of vocal fold vibration and the acoustic modulation of pulmonary air in the vocal tract.

There have been various theories put forward to explain the variations in F0 in vowels. One of the earliest theories by Taylor (1933) attributed higher pitch in high vowels to transference of muscle tension in the tongue to the muscles in the larynx via a kind of sympathetic resonance or radiation. Mohr (1971) attributed the variations in F0 to the build up of air pressure behind the vowel constriction and suggested that a constriction in the pharynx, as found in a low back vowel, would result in a rise of pressure behind the constriction, reduce the air flow, and thus decrease the rate of vocal fold vibration.

However, constriction in the oral cavity, as seen in a high front vowel, would not have the same effect. The greater the distance between the constriction and the glottis, the longer it will take for the air pressure to build up behind the constriction and consequently reduces F0. This theory could not provide explanation for variations in F0 for all vowels.

Later theories (Atkinson, 1972; Lieberman, 1970) attributed the variations to acoustic coupling between vocal tract and vocal cords. According to them, when the F0 was close to the first formant, as seen in high vowels, the F0 of vocal cords gets closer to the frequency of the first formant. In other words, vocal tract configuration which produces a low first formant ought to induce higher pitch. Another explanation was given by Ladefoged (1964) and Lehiste (1970) who attributed the mechanical pull of tongue on larynx causing tensing of vocal cords (Tongue pull theory) and thus increasing the F0. This theory was further supported by Ohala (1972, 1973), who stated that, energy of the vowel gets distributed across the frequencies due to varying acoustic modulation by the vocal tract. Interestingly, the energy distribution lies within a range of frequencies of the vocal tract resonance and harmonics. He also reported that, fundamental frequency (F0) of a given vowel is more or less constant.

Ewan (1979), supporting the tongue pull theory, reported that the supra laryngeal cavities are expanded actively by downward pull of the larynx so as to produce low F0 in /u/. However, he attributed changes in F0 in vowel /u/ when preceded by nasal consonants to the acoustic coupling theory. Crelin (1987) in his book on *The Human vocal tract: Anatomy, function, development and evolution* reported that, the infant vocal tract is markedly different from the older child and mature adult human, which in turn has an effect on fundamental frequency.

The fundamental frequency depends upon the tension on the vocal folds, effective mass of the vocal folds, and on the sub-glottal pressure. The effective mass of the vocal folds is progressively larger from children to women to adult males, which in turn affects the fundamental frequency (Pickett, 1996).

The cricothyroid joint is the main framework for F0 control. Fluctuations of F0 play a role in signaling segmental information. This is often called microprosody, which includes F0 variation due to consonants and intrinsic vowel F0. Speakers intend to produce higher F0 after voiceless stops to realize the auditory cue of the sounds. Small, variations in fundamental frequency of the vowels are seen due to linguistic stress, speaker emotions, and intonations (Dyhr, 1990; Honda, 2004).

Fundamental frequency information of the vowel plays an important role in perceptually segregating clues from different sources and helps in perception. In normal hearing listeners, the perception of fundamental frequency is primarily on temporal fine structure information, and resolving of lower order harmonics in peripheral auditory system (Qin & Oxenham, 2005).

In hearing impaired individuals and cochlear implant users, resolving fundamental frequency is an issue and thus affects the perception of the vowels. In a study that used fundamental frequency as one of the acoustic parameter to assess the speech production accuracy and perceived intelligibility following disruption in auditory feedback in cochlear implantees, it was revealed that, cochlear implantees relied on the auditory cues provided by a cochlear implant to control and modify F0 to maintain speech intelligibility (Poissant et al., 2006).

2.6.2 Studies on Fundamental Frequency

The average F0 values for men and women typically differed by only a few Hz when compared to the corresponding vowels recorded by Peterson & Barney (1952). F0 values for children averaged lower. They also reported of high vowels such as /i/ and /u/ showing the tendency to have higher fundamental frequencies than the low vowels such as /a/ and /æ/.

According to Lehiste & Peterson (1961) and Peterson & Barney (1952), the fundamental frequency varies with vowel height. That is, on an average, high vowels have a higher fundamental frequency than low vowels. They also reported that, these

fundamental frequency differences may not play a major role in vowel recognition, but may provide secondary cues.

The frequency at the onset of voicing after the release of stop closures varies according to the preceding consonant: voiced stops are followed by low F₀, while voiceless stops are followed by high F₀ (Dyhr, 1990; Honda & Fujimura, 1991; House & Fairbanks, 1953; Lehiste & Peterson, 1961).

Eguchi & Hirish (1969) estimated fundamental frequencies of English vowels across the age group and reported that, fundamental frequency was as high as 300 Hz at age 3 and remarkably decreased at the rate of 30 Hz between 3 to 6 years of age. There was a gradual decrease after 6 years of age up to 13 years. Average fundamental frequency of boys at 13 years of age was 220 Hz which further decreased to male adult fundamental frequency, while for girls it was 240 Hz, which was not significantly different from female adults. Strong correspondence between the fundamental frequency and length of the vocal cords was also reported. Bennett (1983) reported no significant changes in F₀ in 7 – 11 year old school children. Further, in a comparative study on comparing average F₀ and F₀ variability in spontaneous speech production in the ages of 11 and 25 months, Robb & Saxman (1985) reported that F₀ variability decreased significantly as the age increased, but not average F₀. The authors have attributed this to small age group.

Studies have revealed that with the tongue position being high in the oral cavity, the tendency is to have higher fundamental frequency than for the low vowels. Thus, the most significant factor influencing F₀, is the tongue height (O'Shaughnessy, 1976; Thorsen, 1976; Pierrehumbert, 1980).

Kent (1976) reported that, children have high F₀ which causes large error in the estimation of formant frequencies especially lower formants, as they are closer. The magnitude of the error declines with the age. The hypothetical error of formant estimation related to F₀ is equal to F₀/4.

The fundamental frequency varies not only with reference to gender of the speaker but also varies for different vowels (Kent & Read, 1995). The fundamental frequency also varies based on the linguistic stress, consonant context, speaker's emotion, and intonation. Umeda (1981) studied the segmental factors which determine the fundamental frequency of vowels in fluent readings. He reported that voiceless stops had higher peak F0 on their following vowel than voiceless fricatives and voiceless stops had significantly higher peak F0 than voiced stops. These results do not agree with the studies done in isolated context (Lehiste & Peterson, 1961). Results of Umeda (1981) infer that, proper F0 control of segmental factors in speech production models would help in the intelligibility of consonants.

F0 of the vowel varied in individual word production, sentences, stressed Vs un stressed syllables with in sentence, different positions in the sentence and rate of speech (Shadle, 1985; Umeda, 1981). Cooper, Soares, Ham & Damon (1983) in their study reported higher F0 peaks for fast speakers and emphatic stress speech.

Research has been carried out in understanding the relationship between the fundamental frequency and tongue height, lip rounding, formant structure, vowel duration, jaw openings, glottal airflow and various other anatomical and physiological variations. It was assumed that F0 was an automatic consequence of vowel production (Fischer-Jorgensen, 1990; Honda & Fujimura, 1991; Nataraja & Jagadish, 1984; Ohala, 1973; Zhi & Lee, 1990).

A comparative study of male and female larynges, proposed two scale factors to explain the differences in fundamental frequency, sound power, mean airflow and glottal efficiency (Titze, 1989). A scale factor of 1.6 was given to F0, primarily based on the membranous length of the vocal folds, while a scale factor of 1.2 was given to mean airflow, sound power, glottal efficiency and amplitude of vibration in relation to overall size of the larynx.

Yoshiyuki (1982a) in his study on English vowels reported that the mean F0 of the vowels, although non-significant, was higher F0 for the high vowels (/i/ and /u/) than the low vowels (/æ/, /a/ and /o/).

Whalen & Levitt (1995) in their extensive study across 31 languages, stated that F0 is not a deliberate enhancement of the signal but rather a direct result of the vowel articulation. Vowels can be produced with any F0 in a speaker's range; however, the high vowels tend to be produced with a higher F0 than low vowels. This “intrinsic F0” (IF0) has been found in every language that has been examined for it.

In Hebrew language, F0 values decreased as vowel height decreased. The F0 values of the adults were significantly lower than those of the children, and men had significantly lower values than women (Most, Amir & Tobin, 2000).

In Yoruba, an African language, intrinsic F0 differences between high and low vowels are smaller when these vowels are realized with a low tone as opposed to a high tone contradicting the tongue-pull theory. Other cues than steady state F0 are used to identify tones in Yoruba language (Hombert, 1977).

2.6.3 Studies on Fundamental Frequency on Indian population

Studies on F0 in the Indian population supported the western studies with reference to its varying from birth to adults. Studies by different researchers indicated that, F0 gradually decreased till 13 to 15 years of age (Rashmi, 1985; Samuel, 1973; Usha, 1978). For vowel /a/, there was a significant difference in F0 between 13 to 14 age group and 14 to 15 age group (Rashmi, 1985).

Females demonstrated one octave higher F0 than males and F0 was significantly different across the vowels in Kannada. Further, F0 increased as the tongue height increased (Venkatesh, 1995). Fundamental frequency reduced from children to adolescents and further in adults. A significant difference in F0 was noted across males and females. The variability of F0 decreased as a function of age; however, variability was high in adolescent boys due to rapid anatomical variations in larynx (Sreedevi, 2000).

In Malayalam speakers, considerable lowering of fundamental frequencies in males with increase in age was noted and in geriatrics, there was a significant increase in fundamental frequencies in males and decrease in females with increase in age. There was no significant difference in F0 between males and females in younger group (7 to 8 years) whereas older age group (20-25 yrs and 40-45 yrs) showed significant differences (Ampathu, 1998).

Average fundamental frequency of each long vowel was slightly higher than its short vowel counterpart in Malayalam speakers (Jenson & Menon, 1972). Females were found to have higher F0 values for the Malayalam vowels than males in CVCCV context (Riyamol, 2007).

The stressed syllable has the lowest fundamental frequency and maximum range in Telugu. This pattern is not observed in European and Far-Eastern languages. It was also inferred that fundamental frequency and its range provide good correlates in differentiation stress syllable (Balusu, 2001).

In an effort to recognize the vowels and speakers with the help of acoustic features in Telugu, Pal & Majumder (1977), used Fuzzy sets and decision making approaches. It was reported that accuracy of vowel sound recognition is about 82 % when decision of the machine was based on the highest membership values. Although fundamental frequency F0 and higher formants are more speaker dependent, identification of first three formants only was satisfactory.

Telugu speakers and Hindi speakers differed significantly in the onset-pitch and mid-pitch measures for both the difference and ratio tests. Hindi speakers showed an average decrease of 21.26 mels in onset F0 values, while American English speakers showed an average decrease of 2.6 mels and Telugu speakers, an average increase of 25.73 mels in onset – F0. Mid pitch ratio test of F0 was also significantly different in Telugu speakers (Russell, 2002).

2.6.4 Clinical importance of Fundamental Frequency

Studies on fundamental frequency characteristics in hearing impaired and normal hearing individuals have shown that, normal hearing individuals always used greater mean F0 and variability for oral than spontaneous speech, which the hard-of-hearing subjects did not (Yoshiyuki, 1982b).

Variations in F0 can also be due to deliberate enhancement of speech signal. Studies have revealed that exaggerated effect used in speech resulted in variations of F0 not only in normal individuals but also in disordered population, such as hearing impaired, cochlear implantees (Bush, 1981; Duggirala, 1995; Perkell, Lane, Svirsky & Webster, 1992; Whalen & Levitt, 1994). Various speech tasks such as reading, repeating, counting etc have significant effect on F0 in children and the same tasks can be used to monitor changes in the voice over time in relationship to surgical or behavioral interventions (Baker, Weinrich, Bevington, Schroth & Schroeder, 2008). It's now felt that the influence of task type on F0 values is important for health professionals designing and implementing assessment protocols for children with voice disorders.

Fundamental frequency of vowels has been used as a perceptual cue in hearing and hearing impaired individuals. In a comparative study on normal hearing and listeners with moderate to moderately severe sensorineural hearing loss, it was noted that, normal hearing individuals took benefit of F0 in adverse conditions as compared to hearing impaired. Reduced performance in listeners with hearing loss and reduced F0 benefit was attributed to audibility of vowel sounds and deficits in spectro-temporal processing (Arehart, King & Mclean-Mudgett, 1997).

Fundamental frequency and duration cues were used to study the perception of linguistic stress by individuals with brain damage. There were differences in performance in right hemisphere damage vs left hemisphere damage in using F0 cues. It was hypothesized that differential lateralization happens for specific acoustic parameters (Baum, 1998).

Liu, Wan, Ng, Wang & Lu (2006) in their acoustic analysis of F0 contours in the utterances of /ma/ and /ba/ syllables produced by the esophageal and normal speakers reported that F0 contours of esophageal speakers are similar to normal speakers, but with limited variability.

Fundamental frequency is important to control the suprasegmental features of the sound. In an experiment in English speaking normal subjects, it was noticed that fundamental frequency of the vowel significantly increased under frequency-shifted auditory feedback for long stressed word. It was reported that a negative feedback mechanism controls the fundamental frequency via auditory feedback in speech production (Natke & Kalveram, 2001).

Fundamental frequency can be used to examine the voice onset time of stop consonant. In a study done on 56 young men using six English voiced and voiceless stops in word initial positions, it was noticed that there was no significant effect of F0 for voiced stops but for voiceless stops, higher F0 had significantly shorter voice onset time, than for low or mid (McCrea & Morris, 2005).

In summary, F0 is dependent upon the vowel height, place and quality, physical, linguistic and psychological factors, gender, and rate of speech. Studies on F0 variations are not reported in Telugu as reported in western literature.

2.7 Formant Frequencies

2.7.1 Introduction

The term formant, is a German term, which was first used by Physicist Hermann in the second half of the 19th Century. Singh & Singh (1979) defined a formant frequency as the frequency region that is significantly amplified for the continuous period of time.

A formant is a resonance of the vocal tract. The peaks in the spectrum are not the formants but are the physical properties of the vocal tract. The formants of a speech sound are known as the first formant (F1), second formant (F2), third formant (F3) and so on. The Figure 2.3 depicts the formants for vowel /a:/ in the word /kaaki/ (crow). The formant frequencies of vowels are affected by the length of the pharyngeal-oral tract, the vocal tract

constriction and degree of narrowness of the constriction (Pickett, 1996). Bunch (1982) and Denes & Pinson (1963) commented that, the formants correspond to the resonance of the vocal tract and they produce peaks in the speech spectrum. According to them, significant features of vowel spectrum are the frequency and amplitudes of the various formants.

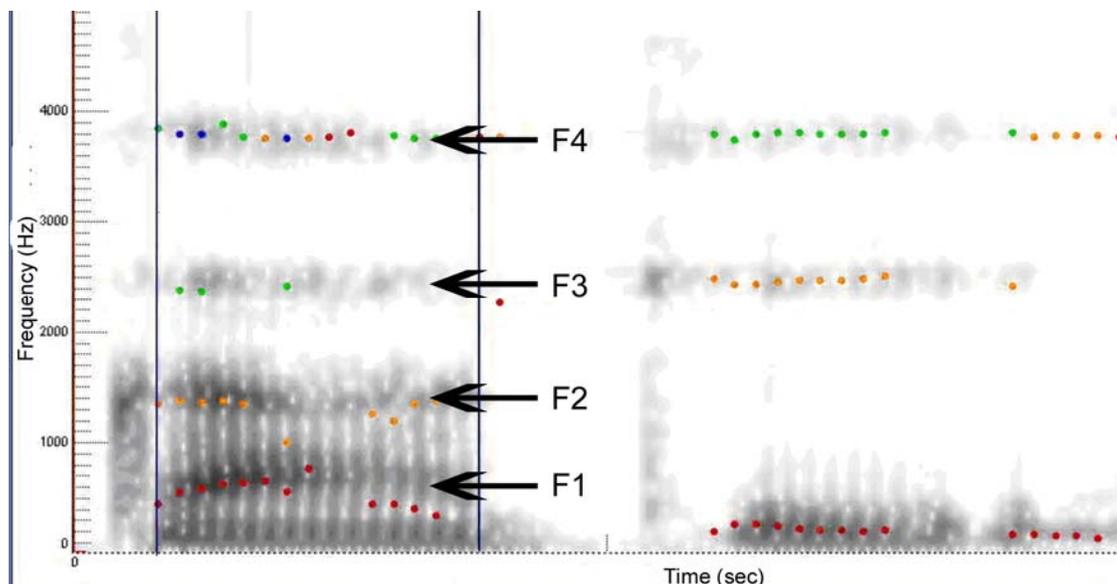


Figure 2.3: Formant for vowel /a:/

Formant is defined as a property of the resonating vocal tract (Fant, 1960). However, Monsen & Engebretson (1983) defined formants as the property of the acoustic signal which has concentration of energy along a frequency scale, defined by the prominence of several harmonics. Formant frequencies are related to the volumes of the cavities in front of (oral cavity) and behind the constriction (pharyngeal cavity) of the vocal tract. In general, larger vocal tract with larger volume will resonate at lower frequencies vs. smaller volumes, which will resonate at higher frequencies.

Formant frequencies are influenced by the vocal tract configuration. It has been presumed from past that the 1st formant corresponds to the back cavity and the 2nd formant corresponds to the front cavity of the mouth (Joos, 1948). Some of the changes reported in the literature are

- As the length of the vocal tract increases, the frequency of all the formants become low.
- As the lip constriction increases, the formant frequencies reduce.
- Elevation of the front of the tongue lowers the 1st formant and raises the second formant.
- Elevation of the posterior part of the tongue tends to reduce the 2nd formant.
- Narrowing of the pharynx raises the frequency of the 1st formant.
- Formant frequencies of nasal vowels are lower than oral vowels.
- Formant frequencies of females are higher than males.
- Constriction in the anterior portion tend to have low F1 and high F2
- Constriction in the posterior portion tend to have low F1 and moderate F2

In the literature, it is proved that, the first two formants, and in some cases, the first three formants are the most important for vowel perception. In addition to the formant frequencies of a vowel, the bandwidths of the formants, the relative levels of the formants, and formant transitions are secondary factors which play some role in the identification of a particular vowel (Monsen & Engebretson, 1983; Carlson & Granström, 1978; Carlson, Granström & Klatt, 1979).

Formant frequencies can be measured using spectrographic analysis or by linear prediction method. In the literature, advantages and disadvantages of each method has been discussed extensively. Monsen and Engebretson (1983) concluded from their study that, formant frequencies can be measured by either technique to the extent of the difference limen as reported by Mermelstein (1978).

Vowels are characterized especially by the first three formants. Each vowel has its characteristic formants. As discussed earlier, the changes in formant frequencies depend on length of vocal resonance tract, location of constriction and degree of constriction. Table 2.4 gives the summary of various formants and their formant frequency range in English speaking adults as described in the literature.

Table: 2.4: Formant frequencies and their place and extent of constriction

Formants	Due to	Location of Constriction	Degree of Constriction	Frequency Range
F1	Related to the volume of the pharyngeal cavity	Varies and frequency depends on constriction of vocal tract	Depending upon vowel	270 Hz to 1000 Hz.
F2	Length of the Oral cavity	Varies depending upon the frontness or backness of the highest part of the tongue	Depending upon the vowel	840 Hz to 2500 Hz
F3	Position of lips	Varies depending upon the frontness or backness of the highest part of the tongue	Depending upon the vowel	1690 Hz – 3010 Hz

Pickett (1996) described rules that relate vowel shapes to the formant locations. F1 is influenced by oral and pharyngeal constriction. F2 is dependent upon the tongue constriction in the vocal tract. Formants are also influenced by the lip rounding.

- Oral Constriction /F1 rule: The frequency of F1 is lowered by any constriction in the front half of the oral part of the vocal tract, and the greater the constriction, the more F1 is lowered.
- Pharyngeal Constriction/F1 rule: The frequency of F1 is raised by constriction of the pharynx, and the greater the constriction, the more F1 is raised.
- Back tongue constriction/F2 rule: The frequency of F2 tends to be lowered by a back tongue constriction, and the greater the constriction, the more F2 is lowered.
- Front Tongue constriction/F2 rule: The frequency of F2 is raised by a front tongue constriction, and the greater the constriction, the more F2 is raised.
- Lip rounding rule: The frequencies of all formants are lowered by lip rounding. The more the rounding, the more the constriction, and the more the formants are lowered.

The Length Rule, as described by Pickett (1996), says that “the vowel formants are inversely proportional to the length of the pharyngeal-oral tract”. That is, longer the vocal tract, lower are the average formant frequencies. The Length Rule gives information where we may find the approximate formants across the age groups.

Fant (1966) has given a scale factor for calculating the first two formants with the following formula. According to him,

$$1^{\text{st}} \text{ Formant, } K1 = \frac{F1\text{ofFemale}}{F1\text{ofMale}} - 1 \times 100$$

$$2^{\text{nd}} \text{ Formant, } K2 = \frac{F2\text{ofFemale}}{F2\text{ofMale}} - 1 \times 100$$

The normalization of formant frequencies for the purpose of demonstrating vowel equivalence has several possible complications (Kent & Forner, 1979). However, such data would help in understanding the developmental changes and formant variations across the vowels, genders and dialects. Iso-vowel lines for five English speaking vowels have been developed and widely used to distinguish between normal vs disordered speech (Kent, Weismer & Kent, 1989). It's noticed that, logarithmic transformation of formant frequencies would help in obtaining uniform scale factor; however, this may not yield an exact equivalence of dispersion.

2.7.2 Studies on Formant Frequencies

Studies on fundamental frequency and its variables have been conducted since almost three decades. Black (1939) on studying the effect of consonants on vowels in English has concluded that, although the vowel remains fairly constant when it is present between varying consonants, it differs from word to word. The variability is seen in frequency, intensity, and other intrinsic factors, also within the speech when the vowel is bounded by different consonants.

Peterson & Barney (1952) on their study of formants in different gender group, inferred that the children's formants are highest in frequency, the women's intermediate and the men's, lowest in frequency. Flanagan (1955) found that formant frequencies may be altered by as much as 20 Hz before a difference may be detected.

Peterson & Barney (1952) studied formant frequencies (F1-F3), formant amplitudes and fundamental frequency (F0) in 10 vowels in /hvd/ context spoken by 33 men, 28 women, and 15 children. The results of the study showed a strong relationship between the intended vowel and the formant frequency pattern. However, there was a considerable formant frequency variability from one speaker to the next, and a substantial degree of overlap in the formant frequency pattern among adjacent vowels. Higher F2 values for /a:/ was observed as compared with /e/, although the differences in F1 was not consistent across talker groups.

Stevens & House (1963) studied the formant frequencies of the American English Vowels. Words with 8 common vowels of American English and 14 consonants that appeared both initially and finally were used for the study. The measurement of formant frequencies were performed using a Spectrum – matching procedures. Results showed that in general, the F1 shifts are fairly small. For front vowels, the consonantal environments cause F2 to shift downward and the shift is larger for lax (short vowels) than for tense vowels. Significant differences existed in the vowel formant frequencies from one talker to another when the vowels were in the consonantal environments. They studied effects of consonantal context on the vowel formant frequencies and observed that various consonantal contexts influenced the formant frequencies of vowel and that they differed considerably from one to another. They also observed that, the consonantal context causes systematic shifts in the vowel formant frequencies depending upon the place of articulation of the consonant, its manner of articulation, and its voicing characteristics.

Eguchi & Hirish (1969) studied formant frequencies (F1 and F2) across the age group using English vowels and reported that,

- First and Second formants decreased from 3 to 5 years of age.
- Second formant decreased greater than First formant.
- First formant is independent of age.
- Front cavity development has greater influence than back cavity development.
- Anatomical and psycho-physiological development influences the variations in the formant frequencies.

Kent (1976) reported that, the formant frequencies of children's vowels are higher than the values obtained for adult females and higher yet than the values obtained for the adult males.

Kallail & Emanuel (1984) in their study reported that, the formant frequencies (F1 through F3) differed from phonated and whispered productions. They also reported the whispered vowel formants to be higher in frequencies than phonation, especially for F1.

Bernstein-Ratner (1985) reported that stress and its secondary manifestations play a role in vowel formant frequencies rather than the duration, thus supporting earlier studies of Delattre (1969) and Liberman (1967). It was also inferred that, most significant shift seen in F2 could be due to stress and ancillary manifestations than duration alone.

Significant differences in F1 and F2 were noted between boys and girls. In English, differences between male and female fundamental frequency and formant frequency patterns begin typically around the age of 11 and become fully established toward the age of 15; however, this is not seen in Hebrew language. The authors suggested future research on the possible cultural differences (Most. et al., 2000).

The frequency of the third formant is affected by the position of the lips. In certain languages such as in French, German the third formant is not predictable. This formant has very little function in distinguishing the vowels (Ladefoged, 2001).

Hillenbrand, Clark & Nearey (2001) investigated the effect of consonant environment on vowel formant patterns. The main purpose of their study was to determine whether a close relationship between vowel identity and spectral change pattern is maintained when the consonant environment is allowed to vary. Formant frequencies, formants F1-F3 were measured and the results showed highly significant effects of phonetic environment, particularly large shifts in formant patterns were seen for rounded vowels in alveolar environments.

In a pilot study on American English speaking population, it was reported that elderly speakers of both genders had lowering of formant frequencies (especially F1) across selected vowel productions as compared to their young cohorts (Xue & Hao, 2003).

Hasegawa-Johnson et.al., (2003) reported that formant frequencies and log area were independent of vowel place. F2 is maximally sensitive to area changes near the vocal tract constriction. F1 is maximally sensitive to area near the glottis, except for vowel /i/.

Cox (2004) in his study on understanding acoustic characteristics of /hVd/ vowels reported that, gender differences in formant values demonstrate non-linear variation. The open vowels when compared to close vowels had clear gender variations.

Watson, Palethorpe & Harrington (2004) in their study on vowels in New Zeland English speakers, have reported that, F1 lowering was seen over the age. Speech of an individual can change over time in accordance with the general population. The authors have attributed the variations to anatomical changes in the vocal tract.

Loakes (2004) in her study to determine if F2 and F3 is speaker specific in monophthongs in Australian English reported that, the front vowels and close-front vowels in particular were most speaker specific. The F2 and F3 of /I/ were most speaker specific parameters between the speakers compared to within speaker. Low vowels showed a higher F1, and F2 showed more frontness in front vowels compared to back vowels (Whalen et al., 2004).

Man (2007), in their study of phonetic analysis of the vowels, diphthongs and triphthongs in Meixian Hakka Chinese language, reported that, the formant patterns for the vowels studied are similar for both male and female speakers. The F1 and F2 formant frequency values for the vowels produced by male speakers were lower than those of female speakers. They also reported that the relative distance between the mid vowels and the high vowels is greater for female speakers than for the male speakers in the vowel ellipses.

The results presented here only suggest a higher stability for vowel /i/ in five languages. /a/ is reputedly a variable vowel, but the acoustic variability found for /u/ might be best understood if we consider it a central articulatory constriction as stated in particular by Vaissière (2007), the stability of the low second formant being mainly due to lips rounding.

2.7.3 Studies on Formant Frequencies in Indian (Dravidian) Languages

There have been studies on formant frequencies in Dravidian languages (Jenson & Menon, 1972; Nagamma Reddy, 1998, 1999; Ampathu, 1998; Sreedevi, 2000; Riyamol, 2007). In the study in Kannada, Sreedevi (2000) reported that male children had significantly higher F1 than females by 3%. Females had higher F1 in adolescents (7%) and adults (11%) compared to males. F2 for females was significantly higher than males across children, adolescent and adults. Linear decrease in F3 was noted from children to adolescents to adults and further marked decrease in adults in both genders. It was also commented that, Formant frequency values produced by children decreased with increase in age not only due to anatomical variations but also due to pharyngeal to oral cavity area.

Ampathu (1998), in his study reported that children showed higher Formant Frequencies and longer word duration than adults in Malayalam. The Formant Frequencies were reduced and word duration was higher in the geriatric population.

Jenson & Menon (1972) in their study of Malayalam language found that formant frequencies (F1 and F2) showed relatively small difference between the short and long vowel pair. Also, they found systematic relation between /u/ versus /u:/ and /a/ versus /a:/ vowel pairs only and not other vowel pairs.

Riyamol (2007) in her study on Malayalam adult speakers reported that female speakers had higher formant frequency pattern than males, confirming the findings of Peterson & Barney (1952) in English speakers. She reported that, low vowels (/a/, /a:/) have high F1 and the high vowels (/i/, /i:/, /u/, /u:/) low F1 frequency. Front vowels have higher F2 compared to low back as well as high back vowels.

Telugu vowels have been reported to be having slightly higher F1 for short vowels, except for /a/, than for long vowels. F3 and F2 formants were considerably higher in long vowels compared to short vowels (Nagamma Reddy, 1998).

Nagamma Reddy (1999) in her study on coarticulation in Telugu, reported that, formant frequencies and quality of same vowel varied depending on the nature of the vowel in the next immediate syllable. The formant frequencies, F1 and F2 for the vowel /a/ decreased when followed by /i/, and even more with /u/ compared to /a/. However, F3 decreased when followed by /i/ and increased when followed by /u/. The differences were dependent upon the vowel height and backness of the first vowel.

2.7.4 Clinical importance of Formant Frequencies

System of iso-vowel lines in F1-F2 and F2-F3 planes developed by Kent & Forner (1979), offers a good solution to compare the data from disordered speakers with normative data (Duggirala, 1983-1984; Kertoy, Guest, Quart & Lieh-Lai, 1999). Duggirala (1983-1984) further quoted that, iso-vowel lines offer a graphic evaluation of formant structure for any given speaker. Each iso-vowel line is an acoustic life line of an average individual's vocal tract, i.e., as a person matures his/her vocal tract lengthens and vowel formants lower in their frequency.

Formant analysis, especially F1 and F2, has been used to understand the emergence of vowel system in Cochlear implantees (Ertmer, 2001), speech intelligibility in cochlear implantees (Poissant et al., 2006) and developmental changes of co-articulation (Gibson & Ohde, 2007).

Sumita, Ozawa, Mukohyama, Ueno, Ohyama & Taniguchi (2002), in their study of characterizing the acoustics of vowel articulation in maxillectomy patients, reported that maxillectomy patients had a significantly lower F2 for all five vowels and a significantly higher F1 for only /i/ vowel. Maxillectomy patients also had a significantly narrower F2 range and this resulted in their poor speech intelligibility. Thus, they inferred that F2 range was effective in evaluating the speech ability of maxillectomy patients.

Estimation of formant frequencies helps in monitoring and understanding the improving vowel production and thus the speech production and speech perception. Langereis, Bosman, Olphen & Smoorenburg (1997) in their study on Dutch cochlear implantees reported variations in F1 and F2 frequencies post implantation.

Murry & Doherty (1980) in his study reported that subjects with an alaryngeal mass had a reduced mean F0, but higher variability due to the influence of the mass on the vocal fold vibratory pattern.

Using iso-vowel lines, F1, F2 were plotted in a myositis case, where all the formant frequencies were much lower than the expected normative data. Vowels /i/ and /u/ were distorted and the investigator emphasized the need for periodic spectrographic analysis of speech to monitor the progress made from medical treatment and speech therapy (Duggirala, 1983-1984).

Children with history of tracheotomy presented varied F2 dimension for /i/ and /u/ and F1 dimension for /æ/ and /i/. Iso-vowel lines were used to map the results and were found to be dispersed. Based on this, it was stated that children undergoing tracheotomy would experience difficulty with tongue extension and retraction (Kertoy et al., 1999). This study highlights the use of iso-vowel lines and formant analysis in describing the speech characteristics in children with history of tracheotomy.

Cervera, Miralles & Álvarez (2001) in their study on Tracheoesophageal speakers, esophageal speakers and normal speakers in Spanish language found that the esophageal and tracheoesophageal speakers had higher F1 and F2 values than in the normal group.

Whitehill, Ciocca, Chan & Samman (2004) analyzed vowel space, formant frequencies (F1 & F2) in glossectomy patients and found that, F1 and its range did not show any significant difference; however, F2 was lower for vowel /i/ and its range was restricted when compared to control speakers. They concluded that, among the parameters studied, F2 range could serve as a sensitive correlate for vowel intelligibility for speakers with partial glossectomy.

In a study to evaluate a formant enhancement algorithm on the perception of speech in noise for normally hearing listeners, Alcantara, Dooley, Blamey & Seligman (1994) using multi talker babble and noise of dynamic filtering with band pass filters centered at the F1 and F2 and reported that it had small effect on perception of vowels.

Kazi et al., (2007) in their study on analysis of formant frequencies in glossectomies reported that formant values, especially F2 and F3 in partial glossectomies were significantly altered when compared with normal subjects. Formant values were also statistically significant with respect to gender and complications and not other factors such as age, site of lesion, treatment methods.

Manwal, Gilbert & Lerman (2001) reported that, the esophageal speaker's intensity and vowel duration data did not contribute much to the perception of meaning as F0 contours did in Cantonese alaryngeal speakers.

Change in F2 intensity would change the perception of vowel and suggests that vowel spectral shape is the most salient cue to vowel identity (Hedrick & Nabelek, 2004). Its' further reported that, in degraded listening conditions, hearing impaired individuals found it very difficult to perceive the vowel with the change in F2 intensity change.

The formant frequencies were centralized and varied little despite changes in fluency, speaking rate and vowel duration in stutterers. Vowel formant frequencies became more centralized as vowel duration decreases (Klich & May, 1982).

Auditory feedback and its influence on human speech production has been evaluated using various experiments, for example, by varying pitch, loudness and gradual manipulation of formants. Purcell & Munhall (2005) in their study manipulated real-time formant tracking and filtering and reported that, both F0 and formants played a role in auditory feedback and auditory perception.

2.8 Formant Bandwidth

2.8.1 Introduction

Formant bandwidth, is the difference in frequency between the points on either side of the peak which have amplitude, that corresponds to 3 dB down from the peak. Damping of the formants was first reported by Fletcher in 1929 and gave a bandwidth of 500 nepers per second, corresponding to 159 cps, for the first formant of natural vowel /a/. Dunn (1961) in his review reported that, there were considerable variations in the band widths obtained by various authors, and this could be due to the method they obtained and the context they used.

Bandwidths were analyzed initially with the help of Fourier analysis using Oscillograms (Dunn, 1961). Researchers using this technique could not get reliable results with the accuracy of findings being questionable. Later, Bogert (Dunn, 1961) introduced Bandwidth analysis using the sound spectrograph with sectioner. Another method used was curve fitting method, where true resonance curves of different widths were calculated and plotted in amplitude and frequency scales of spectrogram. However, its accuracy was questioned based on the calculations used for obtained curves (Dunn, 1961). According to Dunn (1961) the Bandwidths varied from 39 cps to 130 cps for the first formant, 50 to 190 cps for the second formant and 70 to 260 cps for the third formant based on the technique used.

Resonant Frequency Bandwidth estimation is very essential in understanding the quality of spoken vowels and vocal tract acoustics (Yasojima, Takahashi & Tohyama, 2006). Bandwidth of the resonant frequency can be estimated using Clustered Line-Spectrum Modeling (CLSM) (Yosida, Kazama & Toyama, 2001). In this model, the formant frequencies are subjected to analysis where in the bandwidth is calculated by decaying the signal.

2.8.2 Studies on Formant Bandwidth

The bandwidths increased for both male and female speakers as the formant frequencies increased. The bandwidths for females also had greater variation and were wider compared to males (Yasojima et al., 2006).

Formant bandwidth has little effect on the quality or intelligibility of isolated vowels (Klatt, 1982; Rosner & Pickering, 1994); however, it has an effect on the identification of vowels in competition with other vowels (Cheveigne, 1999). The author inferred that at constant root mean square amplitude, identification of a vowel is enhanced by sharpening its formants, or widening those of its competitor. Effects of target and competitor bandwidth are approximately independent, and independent with those of amplitude ratio and ΔF_0 .

2.8.3 Clinical importance of Formant Bandwidth

John, Marios, Margaret, Timothy & Laura (1997) in a study to understand the effects of bandwidth on identification of synthetic vowels, manipulated the bandwidths of formants F1, F2, F3 and F4 and presented to the cochlear implantees. They found that, broader F1 bandwidths yielded poorer performance than narrower F1 bandwidths however, the same was not true for F2.

2.9 Vowel Space

Vowel space area is a graphical representation constructed using the first (F1) and second (F2) formant frequencies of front, center and back vowel (generally /a/, /i/ and /u/). It is an acoustic measure for indexing the size of the vowel articulatory working space.

Vowel space has been widely used in the study of speech to assess the impact on speech of various disorders such as stuttering (Blomgren, Robb & Chen, 1998; Klich & May, 1982), dysarthria (Duggirala, 1983-1984; Turner, Tjaden & Weismer, 1995), to detect changes in speech perception and production with cochlear implants (Lane et al., 2001), in cross-language comparisons (Bradlow, 1995).

In fluency disorders, studies on vowel space have helped in distinguishing between individuals with fluency disorders and normals. It was observed that, vowel space for vowels /i/, /u/ and /a/ provided significant group differences. Greater vowel centralization in stutterers was noted compared to treated and control groups (Blomgren et al., 1998).

On a comparative study of examining the relation between vowel production characteristics and intelligibility, Neel (2008) observed that, distinctiveness among neighboring vowels is more important in determining vowel intelligibility than vowel space. In confused vowels, acoustic comparisons are more useful than measuring vowel space area while studying the intelligibility of normal and disordered speech. However, vowel space has been used for talker identification (Carrell, 1984).

Significant differences between the vowel spaces are noted in a study of speech sample from speaker at different ages of 50s, 70s and 80s (Watson et al., 2004).

Lindblom (1986) has given The Theory of Adaptive Dispersion (TAD), which makes predictions as to the effect of inventory size on the acoustic distribution of elements of vowel systems. It is reported that, “adaptive dispersion” will occur so as to give sufficient contrast between elements in a vowel inventory. TAD accounts for producing sounds sufficiently contrastive to promote linguistic comprehension by the listener. The theory has thus been extended to account for within speaker variation. For example, Moon & Lindblom (1989) showed that under circumstances that require clear speech, a speaker’s vowel space will be expanded relative to his or her casual speech vowel space.

Vowel space expansion is generally associated with increased vowel intelligibility in clear speech; however, the extent of expansion differs from individual to individual within the clear speech. They also noticed in one subject, the smaller vowel space observed in clear speech and vice versa (Ferguson & Kewley-Port, 2007).

In a simulated study, the maximum vowel space in the F1 versus F2 space is larger in both infants and male adults. However, F2 versus F3 acoustic space is reduced in infants compared to adult males (Menard, Jean-Luc & Boe, 2004). It was also commented that for French vowels, vocal tract shape is not a factor contributing for the perception of target sounds.

In dysarthria, researchers have used vowel space calculations to judge the recovery and improvements in perceptual impressions of intelligibility. It has been reported that,

there is no relationship found between vowel space and perceptual impressions of intelligibility (Tjaden, Rivera, Wilding & Turner, 2005).

2.10 Summary

The review of the literature discussed hitherto clearly indicates that the acoustic properties of the vowels such as fundamental frequency, amplitude, formant frequencies and duration vary in different age groups, gender, languages, consonant context, speech task, and disordered speech. Extensive research in the west (especially in English language) has been done on the acoustic characteristic of vowels and the factors that influence these acoustic characteristics. Cross linguistic studies in the west, have shown that there are subtle differences in certain acoustic properties (Formant frequencies, vowel duration) between the languages. Literature survey in Indian languages has revealed that, in Kannada and Malayalam languages, findings have been similar to English, with variations in vowel duration, formant frequencies and consonant influences. There is a paucity of studies specifically in Telugu across age, gender and region related aspects on acoustic characteristics of its vowels and their influences.

With the advancement in assessing, diagnosing and rehabilitation of communication disorders, there is a dire need for the clinicians to understand the acoustic properties of the vowels (important speech sounds) of the language they are working in. This information will help in the differential diagnosis and in identifying the factors influencing the deviancies in the normal speech. As Telugu is not having enough information on such factors, and with its speaking population high not only in India but also across the world, the need for understanding its vowel characteristics becomes relevant and greater. Hence, the current study has focused on the acoustic characteristics of vowels in Telugu and has also studied the influence of age, gender, region on their characteristics and the variations among short vs long, front vs central vs back vowels. The outcome of this study, it's felt, would be beneficial to the clinicians of Telugu speaking regions to be more region & dialect appropriate in their management strategies.



Method

CHAPTER 3

METHOD

3.1 Introduction

This was an attempt to examine the differences in the temporal and spectral characteristics of vowels in Telugu language across three age groups (children, adolescents and adults), gender, three dialects (Coastal, Rayalaseema and Telengana) and consonant contexts. This chapter provides details on the material, participants, data collection procedures and other relevant aspects of the method.

3.2 Material

A list of 100 meaningful disyllabic words consisting of CVCCV and CVCV syllables were selected from Telugu magazines and dictionary (Sitaramacharyulu, 2005) and given to age appropriate normals across the three different regions (Coastal, Rayalaseema and Telengana) for familiarity rating. They were asked to rate the familiarity of the words on a three point scale (Not at all familiar, Familiar, Most familiar). Only those words that were rated as familiar and most familiar across all the regions and age groups were selected for compilation of the final word list. Thus, the final list of 60 words (Appendix II) consisting of all ten short and long vowels present in Telugu (hence forth called as tokens), in all possible consonant and semivowel context was prepared. Vowels, consonants and their frequency of occurrence in different contexts of the final list are given in Tables 3.1, 3.2 and 3.3 respectively. The target word was embedded in the final position of a carrier sentence “/i: padamu (target word) /” (This word is _____), so as to obtain reasonable uniform stress and intonation patterns (Bennett, 1981; Most, Amir & Tobin, 2000). Power point slides of each word of the list were made. (The pdf version of the power point presentation used is written on to the CD and enclosed).

Table 3.1: List of Telugu vowels included in the study

	Front	Central	Back
High	/i/, /i:/		/u/, /u:/
Mid		/e/, /e:/	/o/, /o:/
Low		/a/, /a:/	

Table 3.2: List of Telugu consonants included in the study

Consonant	Description
/k/	Voiceless unaspirated velar plosive
/g/	Voiced unaspirated velar plosive
/tʃ/	Voiceless aspirated alveopalatal affricate
/dʒ/	Voiced unaspirated alveopalatal affricate
/t̪/	Voiceless retroflex stop
/d̪/	Voiced unaspirated retroflex
/t/	Voiceless dental unaspirated plosive
/d/	Voiced dental aspirated plosive
/p/	Voiceless bilabial plosive
/b/	Voiced bilabial plosive
/m/	Bilabial nasal
/n/	Alveolar nasal
/r/	Alveolar trill
/l/	Alveolar lateral
/s/	Voiceless alveolar fricative
/ʃ/	Voiceless alveopalatal fricative
/w/	Bilabial semi-vowel
/y/	Palatal semi-vowel

Table 3.3: Frequency of occurrence of vowels in different contexts

Vowels	Consonants																Total		
	/p/	/b/	/t/	/d/	/t _l /	/d _l /	/k/	/g/	/ch/	/j/	/m/	/n/	/s/	/ʃ/	/l/	/r/		/w/	/y/
i	1			1								1							3
i:	1							1	1			1							4
e	1				1				1		1				1	1	1		7
e:	1			1			1	1	1		1								6
a		1					1	1				1	1		1		1	1	8
a:	1	1	1	1			1	1	1		1	1		1					10
o	1	1	1								1	1							5
o:	1		1			1			1										4
u	1	1	1	1			1		1	1			1			1			9
u:	1			1							1	1							4
Total																			60

A total of 4320 tokens of vowels from 72 participants served as the initial sample size. 21 tokens were eliminated owing to poor acoustic features, bringing down the final sample size to 4299. In few of the participants, in certain vowel contexts (/u/ and /o/ both short and long), higher formants were not reliably identified. In such tokens, only the lower formants were measured. Consequently, the total number of measurements for the higher formants was smaller by about 20% than that of the total number for the lower formants. Nevertheless, it needs to be noted that all measurements were based on a large corpus of data. Further division of the occurrences for each subgroup is given in Appendix III and Appendix IV.

3.3 Participants

A total of 72 Telugu speaking normals from three different regions (Coastal, Rayalaseema and Telengana) in three different age groups (Group I: 06 to 09 years; Group II: 13 – 15 years; Group III: 20 – 30 years) with equal gender ratio participated in the study. Selection of age criteria for Group I was to avoid the effect of pubertal changes among the participants. Both genders were included in this group, as children below this age group generally don't demonstrate any significant differences in their vocal

characteristics (Most, Amir & Tobin, 2000). The sample size for the study was calculated based on the formula,

$$N = \frac{2 (Z\alpha + Z\beta)^2 \sigma^2}{d^2}$$

Where,

$$Z\alpha = 1.96$$

$$Z\beta = 0.8 = 0.84 \text{ or } 0.9 = 1.282$$

Based on the reported (Sreedevi, 2000) standard deviation of 10 to 20 across participants between the groups and 100 to 250 between parameters and using the above formula and with d values at 95 % level of significance and power of .9 on chi test, the number of participants and number of tokens were calculated. The values are tabulated in Table 3.4 and Table 3.5 respectively.

Table 3.4: Number of participants calculated with standard deviation of 10 and 20 at 95% level of significance and power of 0.9 on Chi-square test

	10 (σ)	20 (σ)
10 (d)	21	84
20 (d)	5	21

Table 3.5: Number of tokens calculated with standard deviation of 100 and 250 at 95% level of significance and power of 0.9 on Chi-square test

	100 (σ)	250 (σ)
10 (d)	2102	13138
20 (d)	526	3286

Considering the values obtained at 95 % level of significance and with the power of 0.9 on Chi-square test, a sample size of 24 participants per each age group and 4230 tokens (Appendix III and IV) were arrived upon. The mean age across each group that participated in the study is represented in table 3.6. Each age group was further divided into equal number of males and females. Further, three subgroups were made based on

each region (Coastal, Rayalaseema and Telengana) of the language usage. Thus, each regional group consisted of 4 participants; each gender, 16 participants and each age group, 24 participants. A total of 18 subgroups were formed. A flow chart of all the subgroups and the number of participants is given in Appendix V. All the participants were born in Andhra Pradesh and were native Telugu speakers. A qualified Audiologist and Speech-Language Pathologist evaluated and certified their speech, language, and hearing, as being normal at the time of data collection.

Table 3.6: Mean age of the participants for each group

Group	Minimum Age (in years)	Maximum Age (in years)	Mean	Standard Deviation
Group I	7	10	8.5	0.96
Group II	11	15	13.42	1.15
Group III	20	30	23.42	2.84
Overall	7	30	15.03	6.42

3.4 Procedure

After an informed consent (Appendix IX), the randomly selected participants from the respective groups were comfortably seated (Figure 3.1) in a sound treated chamber of the Speech and Hearing department and in a quiet room while recording samples at schools. With the condenser microphone (Appendix VI) to mouth distance kept constant at 2 centimeters, the recording was done on to the hard disk of a personal laptop computer (IBM ThinkPad, with Genuine Inter(R) CPU, T2300 @ 1.66GHz, 504 MB of RAM and with a built-in audio interface card) installed with the Wave Surfer recording software (Appendix VI). The speech sample was recorded at a sampling rate of 22,050 kHz and bit rate of 256 kbps.

The tokens were presented on the computer screen to the participant one at a time. The participant was instructed to read the target embedded sentence twice as it appeared on the screen. All recordings were done by the researcher and stored in Microsoft Windows wave format (*.wav) for future retrieval and analysis.

From the two thus recorded sentences, the perceptually correct target word was extracted using Adobe Audition (Appendix VI) software. The extracted sound was saved in *.wav format. The target words were presented to one Telugu speaking adult Speech Language Pathologist to perceptually judge the correct pronunciation of the target word. The words that were judged to be incorrect were deleted and re-recorded by the same speaker.



Figure 3.1: Seating and presentation setup of the study

Computerized Speech Lab (CSL) 4500 (Appendix VI) was used for temporal and spectral analysis of the target vowel present in the target word. An anti-aliasing filter with a 10 kHz cutoff frequency was used before A/D conversion and a pre-emphasis factor of 0.8 was applied. Following steps were carried out while analyzing the temporal and spectral parameters of vowels.

1. The target word file was loaded by selecting file, open command.
2. The target word was loaded into window A of the CSL.
3. Each word was displayed as a broad band spectrogram with a pre emphasis factor of 0.80. The analysis bandwidth was set to 100 points (234.38 Hz) for Group I,

- male and female samples and Group III female sample, 125 points (187.50 Hz) for Group II males and females and 200 points (117.19 Hz) for Group III male samples. A Hamming window was used.
4. Spectrograms were displayed in monochrome (black and white) and the grid size used was 8 x 8 pixels with a linear vertical axis.
 5. A macro was created to generate spectrogram of the displayed data and mark the formant frequencies. Another macro was created to emphasize by a factor of 2 for the weaker waveform prior to generating the spectrogram.
 6. The first vowel in CVC/CVCCV was considered for the analysis.
 7. Vowel duration (Appendix VII) was marked from the spectrogram in window B of the CSL. While selecting the start and end points, wave form of the signal in window A was also considered to extract most accurate duration. This was done by synchronizing both windows.
 8. The starting and end points were recorded in an Microsoft Excel sheet to further calculate the difference between the two points to get the vowel duration.
 9. Fundamental frequency of the target vowel was analyzed using SIGVIEW version 1.91 acoustical software (Appendix VI). It is a real-time signal analysis software package with wide range of powerful FFT spectral analysis tools. Sample screen for extracting fundamental frequency are given in Appendix VII.
 10. Formants F1, F2, F3 and F4 (Appendix VII) were identified visually and recorded. Using analysis, formant history, mark formant history for all data, the position and values were reconfirmed. Only clearly visible formants were considered. Values were obtained in three different positions in the steady state of the vowel and were recorded in the Microsoft Excel sheet. The average of these three values was considered as the frequency of the target formant.
 11. Bandwidth was recorded from the displayed numerical results by using command "Alt + N". At the same three different Formant frequency positions, the Bandwidth of the respective formants was recorded (Appendix VII).
 12. A resource disk was developed to facilitate clinicians (Appendix X).

3.5 Inter and Intra judge reliability

The researcher re-measured 10% of the tokens (random selection) after 6 months of the first measure for intra-judge reliability. Results from the paired t -test suggest that the two measures are highly reliable ($t_{(431)} = 1.026$, $p = 0.309$). An experienced speech pathologist, unaware of the purpose of the study, measured temporal and spectral characteristics of 10% of the tokens (random selection) for inter-judge reliability. Results from the paired t -test suggest that the two measures are highly reliable ($t_{(431)} = 0.10$, $p = 0.920$).

3.6 Statistical Analysis

Descriptive analysis of the data was performed using SPSS 16 (Appendix VI). To evaluate the effect of age, gender and region on the response variables (vowel duration, fundamental frequency, formant frequencies and bandwidths), a multilevel approach (Quene & Bergh, 2004) was used in MIWin 1.1. A three-level model was constructed with individuals as first level, consonants context as second level and vowels as third level. The pictorial representation of the model is depicted in Figure 3.2. Significance levels were determined with Wald test. Definitions of terms used in the multilevel approach, models used in the study are described in Appendix VII.

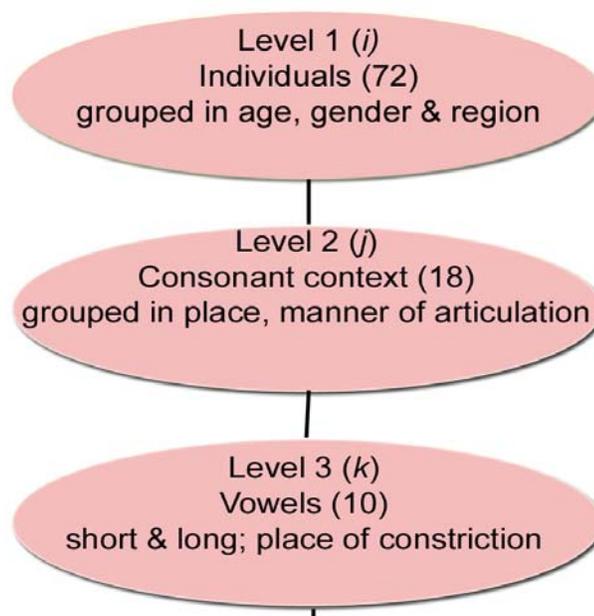
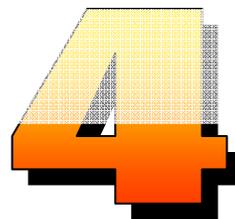


Figure 3.2: Multilevel framework considered in the study

Further to estimate the significant mean difference of each vowel between the age, region and gender groups for each response variables, one way ANOVA with Tukey HSD post hoc test and Student's *t*-test were used respectively using SPSS 16. The details pertaining to analysis of the results and their interpretation is discussed in the following chapters titled, "Results and Discussion".



Results and Discussion

CHAPTER 4

RESULTS AND DISCUSSION

4.1 Temporal characteristics of Telugu vowels

4.1.1 Vowel duration (VD)

Scrutiny of the vowel duration data revealed that the mid high vowel /e/ and low mid vowel /a:/ were the longest and the high front vowels /i/ and /i:/ were the shortest. Central vowels were longer followed by front and back vowels. It was also observed that, the mean vowel duration of the short vowel was shorter followed by long vowel. The mean and 1 standard deviation (1 SD) bars of all vowels' vowel duration are depicted in Figure 4.1.1. The means, standard deviation (SD) and 95% confidence interval for mean of all the vowels; for central, front and back vowels and short and long vowel ratios across the age groups are given in Appendix VIII a (Tables 4.1.1, 4.1.2 & 4.1.3 respectively).

It was observed that the ratio of short vs long vowels increased from children to adults with children having a ratio of approximately 1:2, while adolescents and adults, 1:2.2 and 1:2.4 respectively.

Children had longer mean vowel duration followed by adolescents and adults for all short vowels, except for /i/ and /u/, where adults exhibited longer vowel duration as compared to adolescents. The mean vowel duration was also longer in children followed by adults and adolescents in all long vowels. The means with 1 SD bars of vowel duration across the age groups are depicted in Figure 4.1.2. The means, SD, and 95% confidence interval for mean for all the three age groups are given in Appendix VIII a (Table 4.1.4).

It was also observed that gender wise, females had longer mean vowel duration for all short and long vowels as compared to males. The high mid vowel /e/ had the longest vowel duration while high front vowel /i/, the shortest vowel duration in both females and males. The low mid long vowel /a:/ had longer while high front long vowel /i:/, the shortest duration in both genders. The means with 1 SD bars of vowel duration across gender groups are given in Figure 4.1.3. The means, standard deviation and 95% confidence interval for mean of short and long vowels for both genders are given in Appendix VIII a (Table 4.1.5).

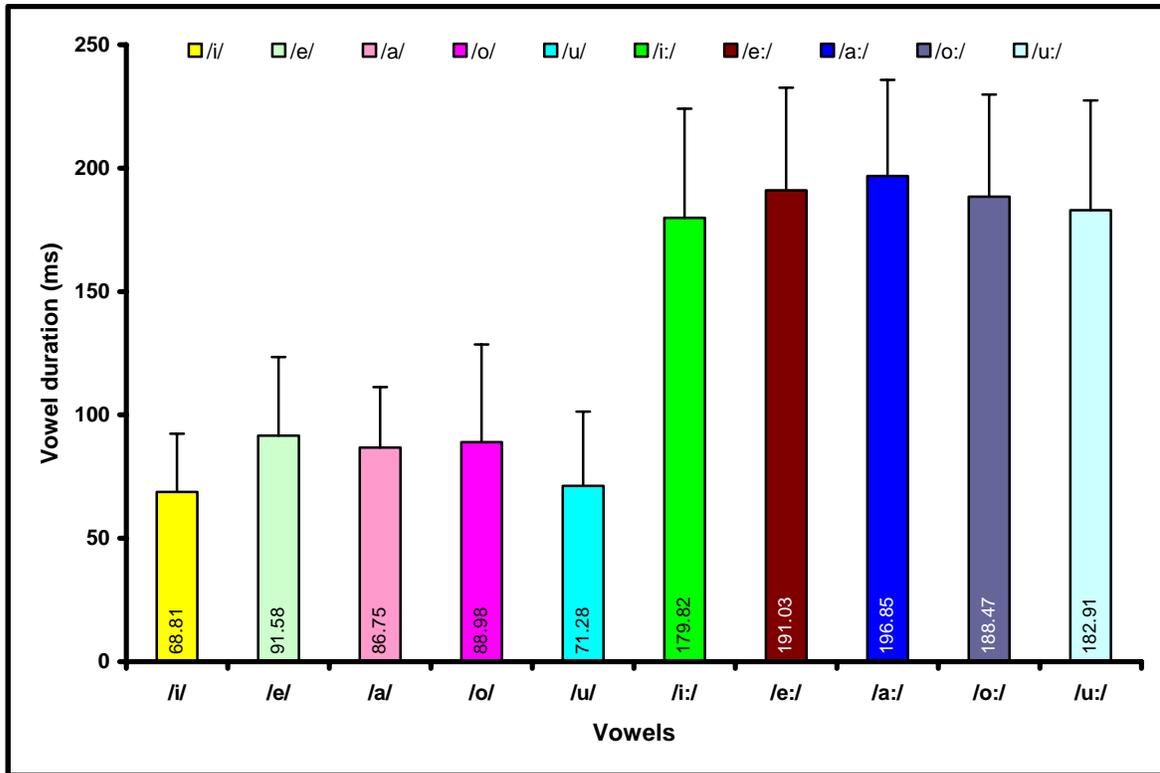


Figure 4.1.1: Mean vowel duration (ms) and 1 SD bars of all vowels

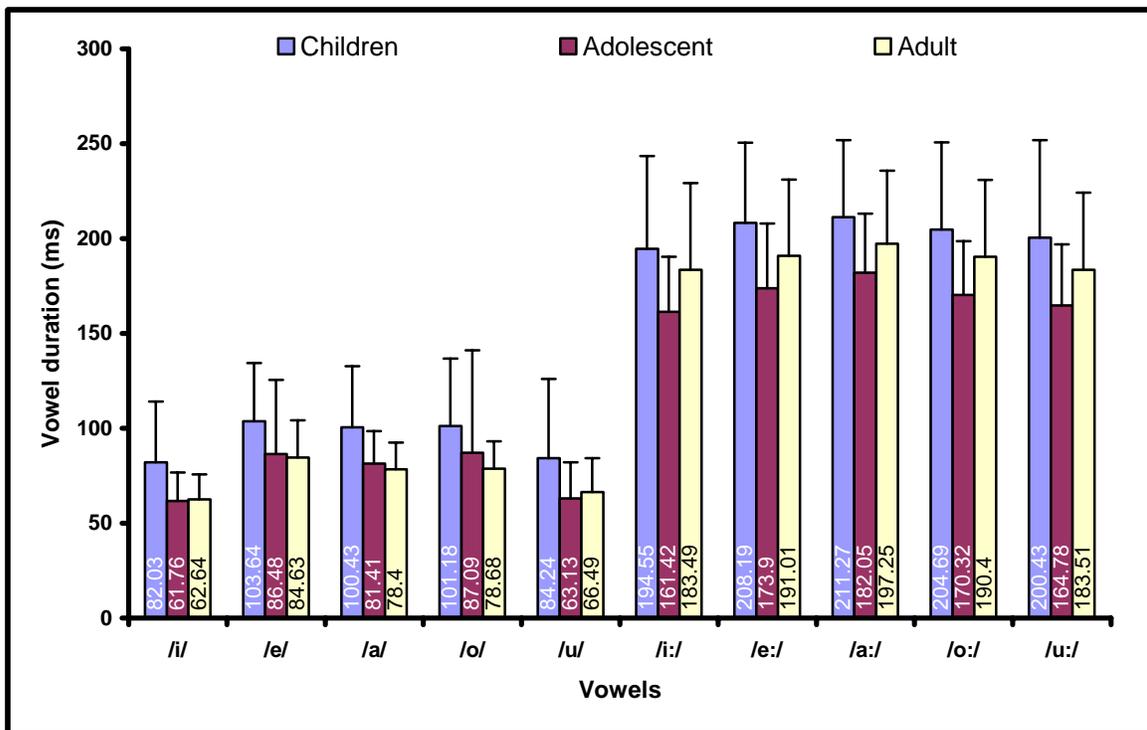


Figure 4.1.2: Mean vowel duration (ms) and 1 SD bars across age groups

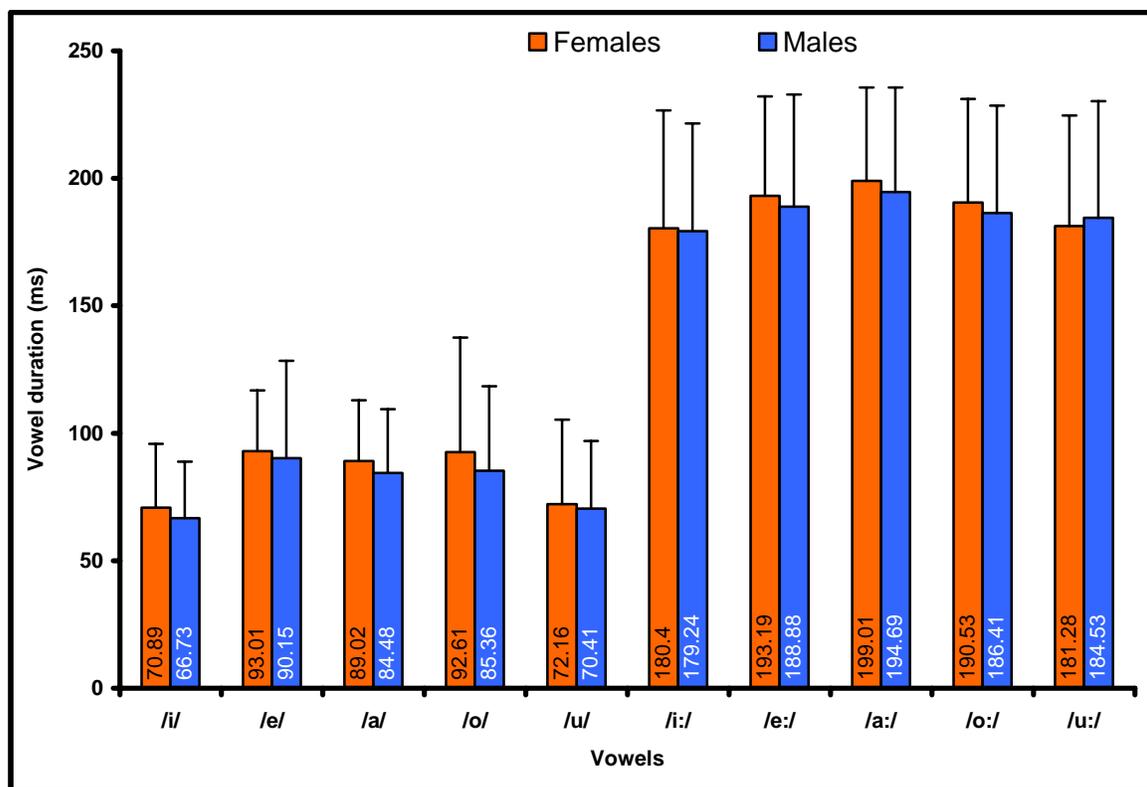


Figure 4.1.3: Mean vowel duration (ms) and 1 SD bars across gender groups

Region wise, speakers from Rayalaseema region had longer mean vowel duration for all short and long vowels followed by Telengana and Coastal speakers. Among short vowels, front mid vowel /e/ had the longest mean vowel duration for Coastal, Rayalaseema and Telengana speakers. Short front high vowel /i/ had the shortest mean vowel duration for Coastal, Rayalaseema and Telengana speakers. Among long vowels, low mid vowel /a:/ had the longest mean vowel duration in Coastal, Rayalaseema and Telengana speakers respectively. Long vowel /i:/ had the shortest vowel duration for Coastal, Rayalaseema and Telengana speakers respectively. The means with 1 SD bars of vowels duration across region groups are given in Figure 4.1.4. The means, standard deviation and 95% confidence interval for the mean values of vowel duration for Coastal, Rayalaseema and Telengana are given in Appendix VIII a (Table 4.1.6).

Preceding consonant context wise, front short vowel /e/ had longer mean vowel duration when preceded by stop consonants while back high short vowel /u/ had shorter mean vowel duration. Mid long vowel /a:/ had longer mean vowel duration followed by

/e:/, /o:/, /u:/ and /i:/. Front vowel /e/ had longer mean vowel duration than back vowel /u/ when preceded by affricate consonants. Back vowel /o/ had longer mean vowel duration followed by /e/, /a/ and /i/ when preceded by nasal consonants. Front high vowel /e/ had longer mean vowel duration followed by /a/ and /u/ when preceded by fricative consonants. Front vowel /e/ had longer mean vowel duration compared to mid vowel /a/ when preceded by lateral consonants. Front vowel /e/ had longer mean vowel duration compared to back vowel /u/ when preceded by trill consonants. The mean values with 1 SD bars of vowel duration across different manner of articulation of the preceding consonant context for short and long vowels are given in Figures 4.1.5a & 4.1.5b respectively and the values are given in Appendix VIII a (Table 4.1.7).

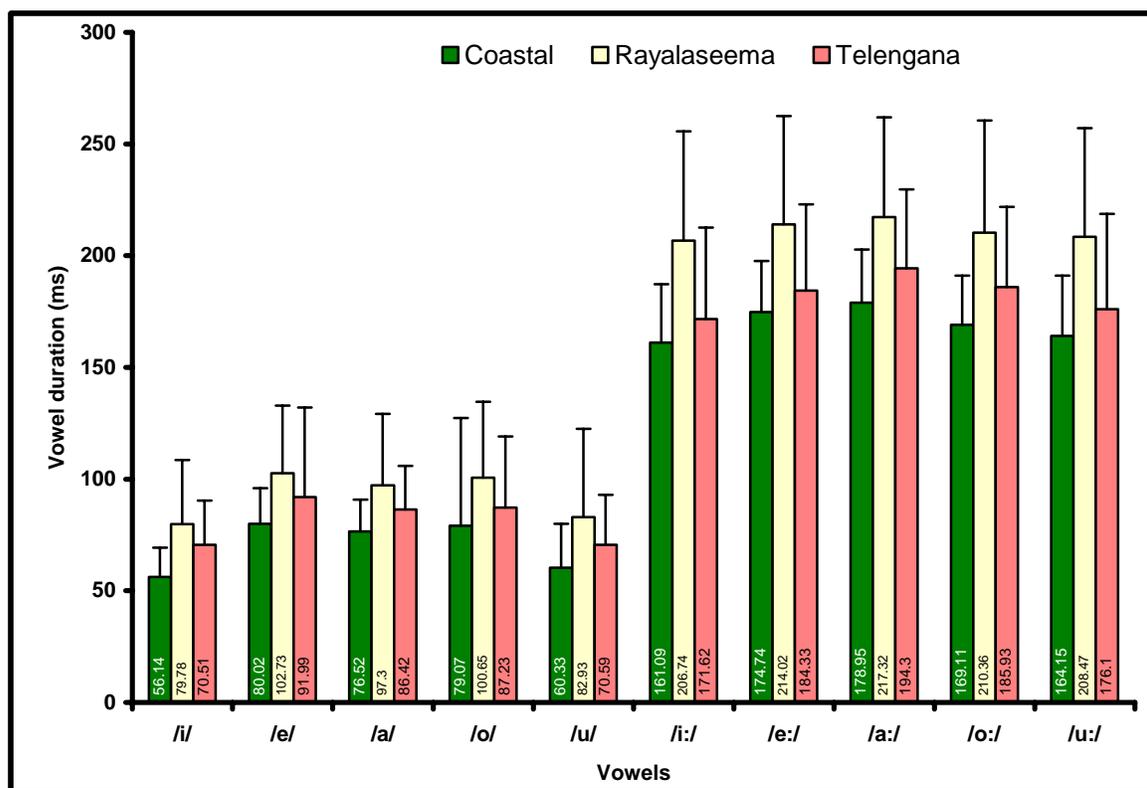


Figure 4.1.4: Mean vowel duration (ms) and 1 SD bars across region groups

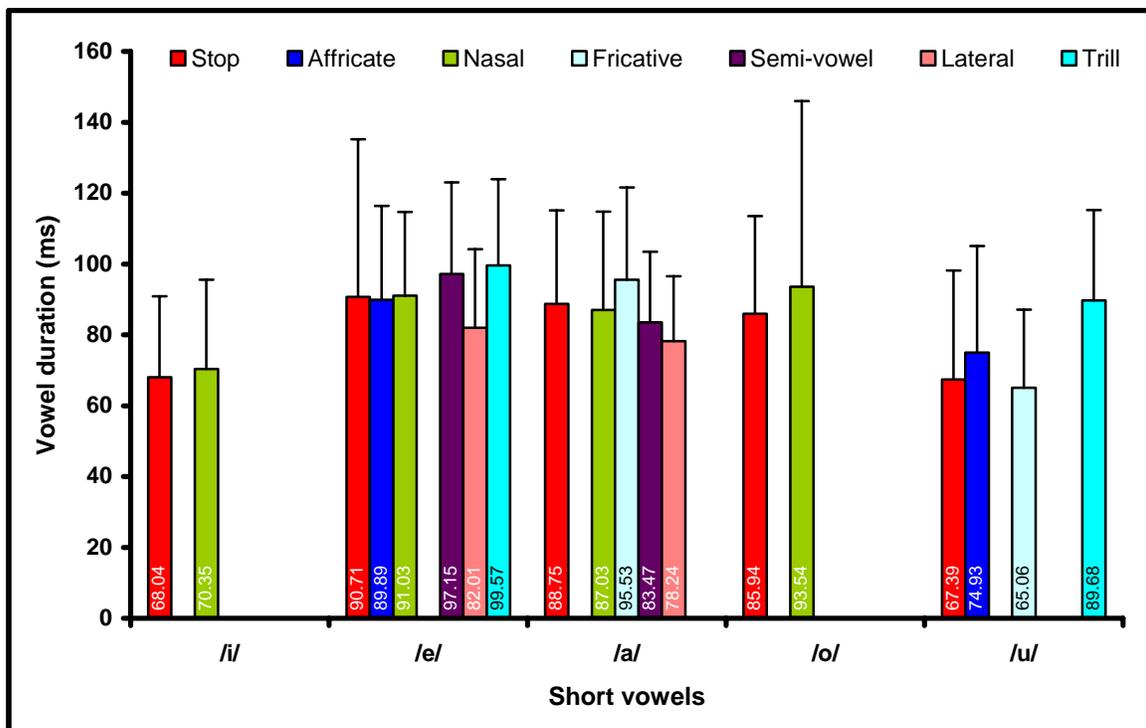


Figure 4.1.5a: Mean vowel duration (ms) and 1 SD bars of short vowels across manner of articulation of the preceding consonant

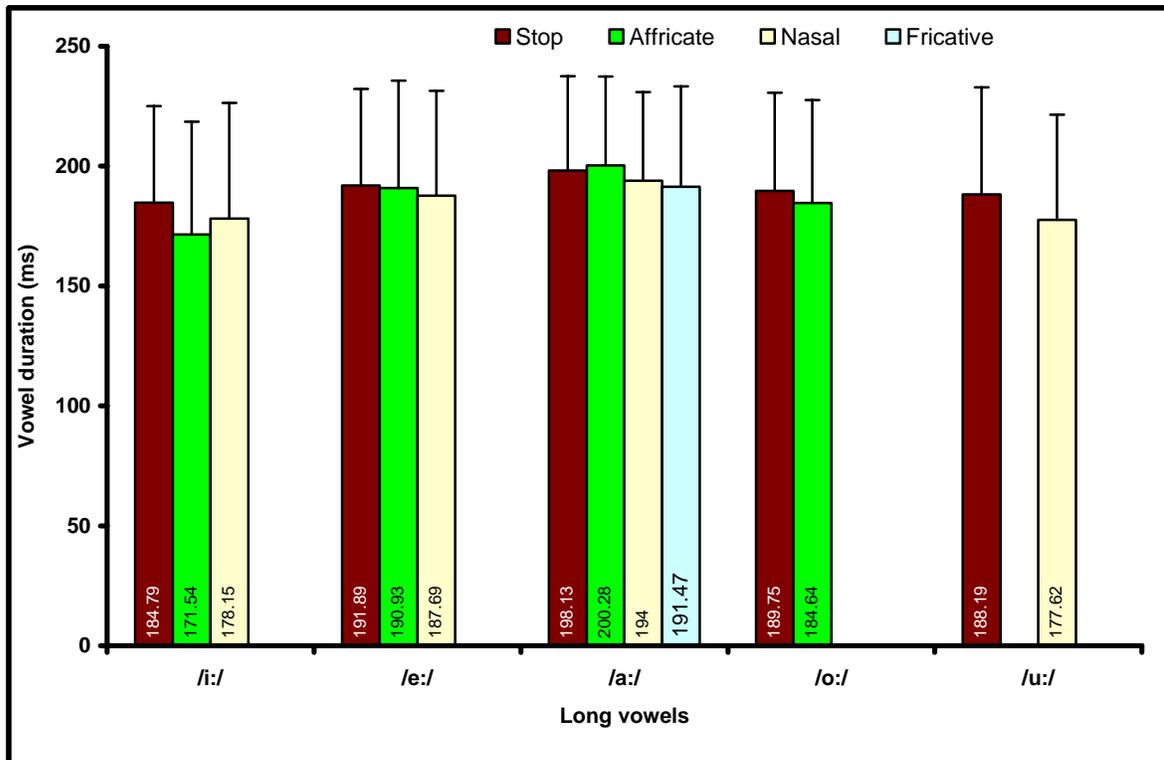


Figure 4.1.5b: Mean vowel duration (ms) and 1 SD bars of long vowels across manner of articulation of the preceding consonant

It was evident from the data that, place of articulation of the preceding consonant had an effect on the vowel duration. Front high short vowel /i/ had longer mean vowel duration when preceded by dental consonants followed by alveopalatal and bilabial consonants; however, long vowel /i:/ had longer mean vowel duration when preceded by velar consonants followed by alveopalatal and bilabial consonants. Front mid vowel /e/ had longer mean vowel duration when preceded by retroflex consonants followed by alveopalatal and bilabial consonants while its counterpart long vowel /e:/ had longer mean vowel duration when preceded by velar consonants followed by alveopalatal, dental and bilabial consonants. Mid low vowel /a/ had longer mean vowel duration when preceded by velar consonants followed by alveopalatal and bilabial consonants but long vowel /a:/ had longer mean vowel duration when preceded by dental consonants followed by velar, bilabial and alveopalatal. Back mid vowel /o/ had longer mean vowel duration when preceded by alveopalatal consonants followed by bilabial and dental consonants but its counterpart long vowel /o:/ had longer mean vowel duration when preceded by retroflex consonants followed by dental, bilabial and alveopalatal consonants. Back high vowel /u/ had longer mean vowel duration when preceded by alveopalatal consonants followed by dental, bilabial and velar consonants and long vowel /u:/ had longer mean vowel duration when preceded by dental followed by bilabial and alveopalatal consonants. The mean values with 1 SD bars of vowel duration across different place of articulation of the preceding consonants for short and long vowels are graphically represented in Figures 4.1.6a & 4.1.6b respectively and the values are given in Appendix VIII a (Table 4.1.8).

It was observed that all vowels followed by voiced consonants had longer mean vowel duration compared to voiceless consonants except for back high long vowel /u:/. The mean values with 1 SD bars of vowel duration across voicing feature of the preceding consonant are graphically represented in Figure 4.1.7 and the values are given in Appendix VIII a (Table 4.1.9).

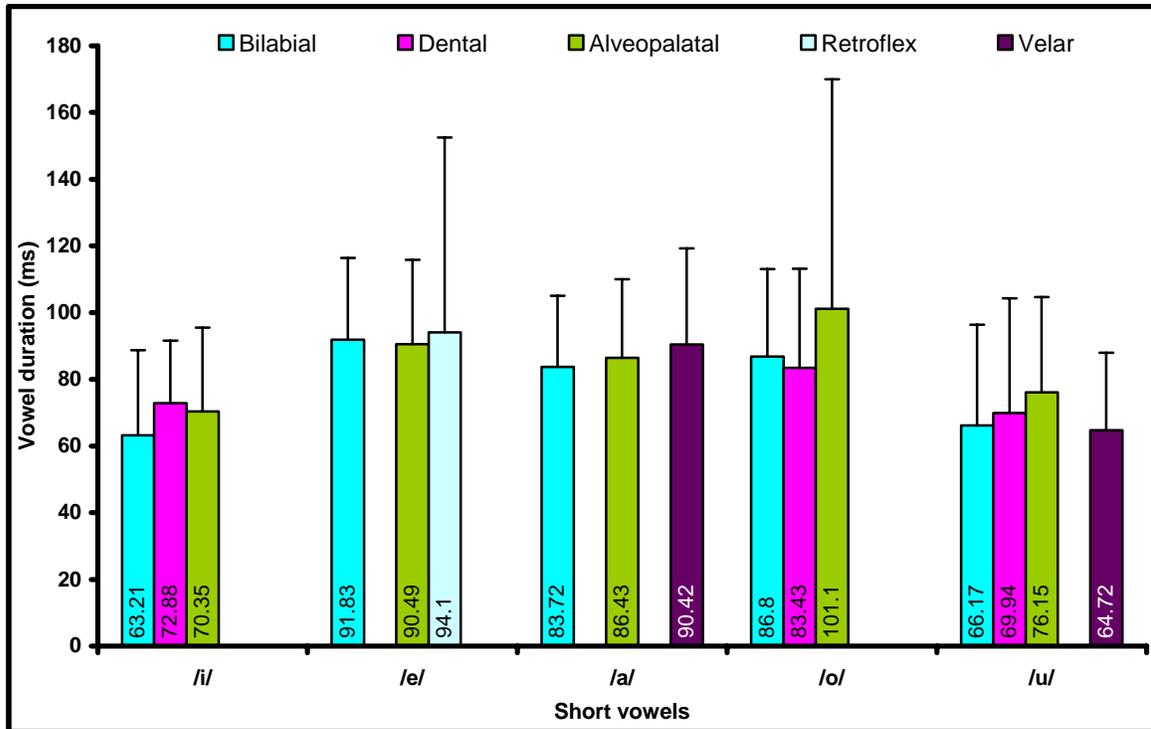


Figure 4.1.6a: Mean vowel duration (ms) and 1 SD bars of short vowels across place of articulation of the preceding consonant

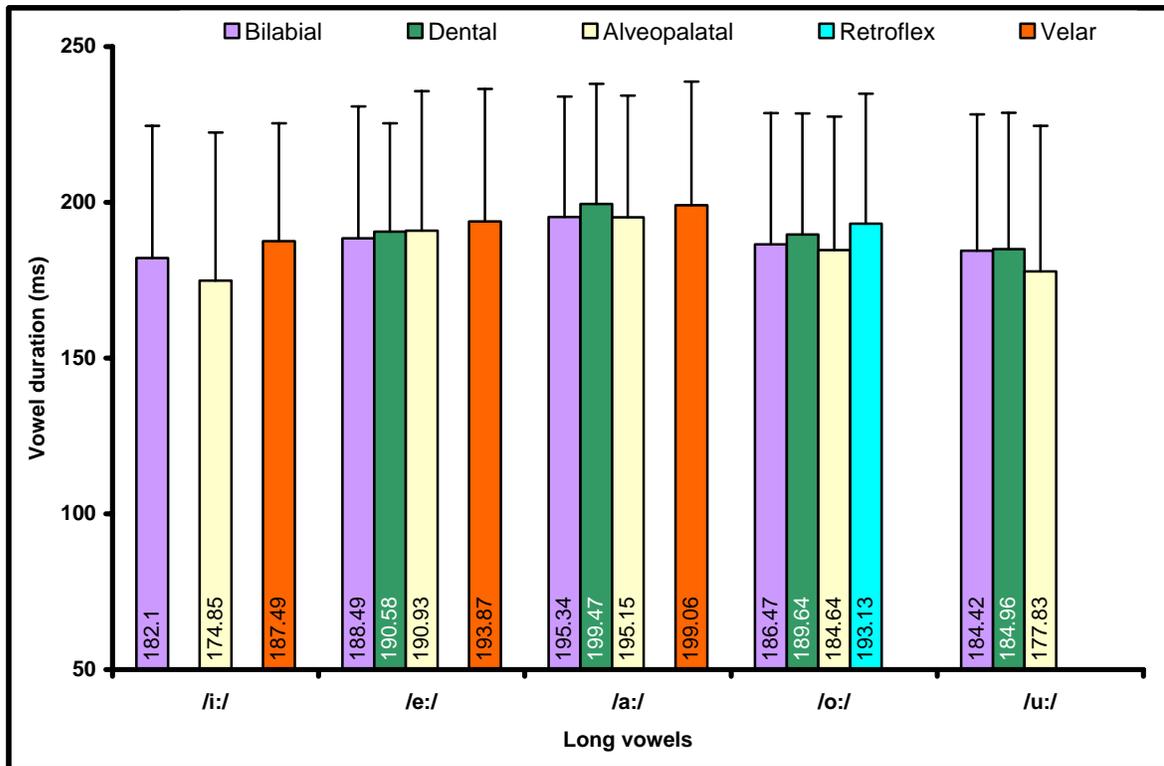


Figure 4.1.6b: Mean vowel duration (ms) and 1 SD bars of long vowels across place of articulation of the preceding consonant

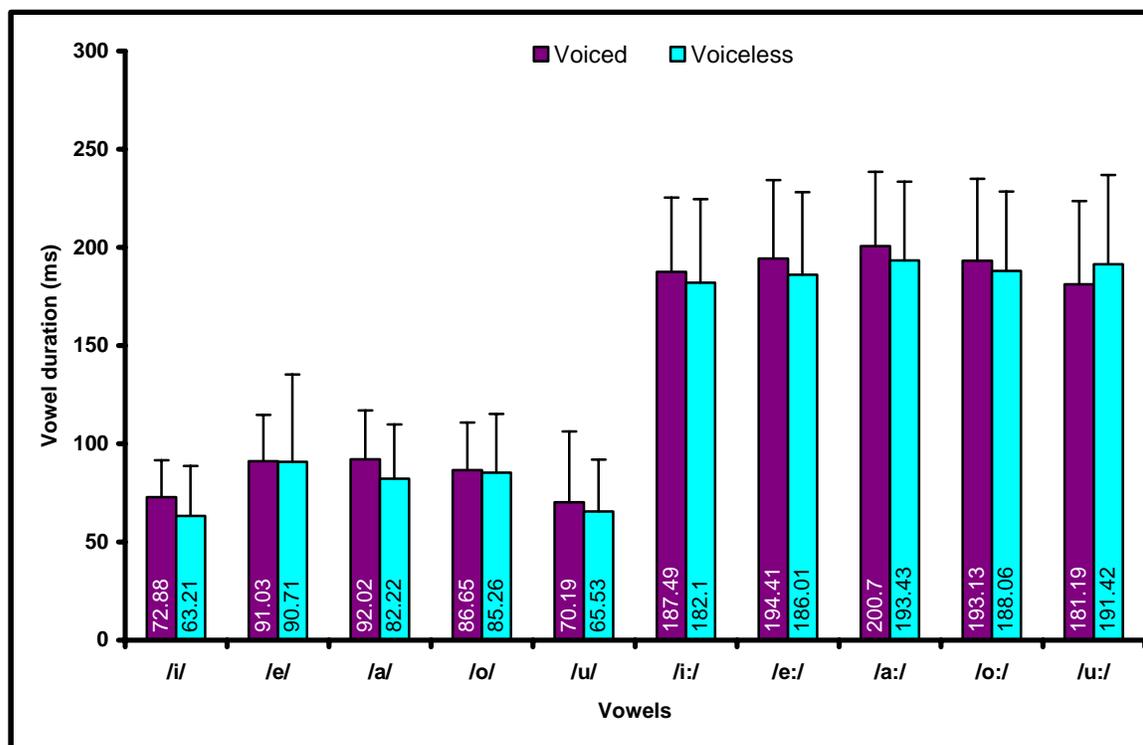


Figure 4.1.7: Mean vowel duration (ms) and 1 SD bars of vowels across voicing feature of the preceding consonant

Following questions were addressed to further understand the variations in the mean vowel duration as observed in the analysis. (1) Do age, gender and region have any association with vowel duration and if so, what kind of an association? (2) Which of the vowels studied have significant difference in vowel duration among the age, gender and region groups? In order to answer these questions, random intercept model 3 was used (as described in the method) to determine if there was any association between vowel duration and age, gender and region groups. The results are given in Table 4.1.a.

From Table 4.1.a it is observed that, there is a significant association of vowel duration with age, gender and region with, age and gender having negative association.

Further to study which of the vowels differed significantly among the age and region groups, Tukey HSD was done and the results suggested that vowel duration of all short vowels (/i/, /e/, /a/, /o/ and /u/) did not show statistically significant difference between adolescents and adults and for /i:/ between children and adults (Table 4.1.b). Within the region groups, vowel duration of vowels /o/, /i:/, /e:/ and /u:/ did not show

statistically significant difference between Coastal speakers and Telengana speakers (Table 4.1.c). Student's *t*-test was done to determine as to which of the vowels significantly differed with the gender groups and the results are depicted in Table 4.1.d.

Table 4.1.a: Statistical analysis using random intercept model for VD

N=4320				
Covariates	Estimate	Std. Error	Wald ratio	P value*
Constant (β_{0ij})	137.08	9.58	14.31	< 0.01
Age (β_{1ijk})	-0.82	0.08	-10.25	< 0.01
Gender (β_{2ijk})	-2.57	1.07	-2.40	0.01
Region (β_{3ijk})	5.69	0.65	8.75	< 0.01
Variance components				
Random Error:	1207.54			
Consonant Level:	42.28			
Individual level:	2970.79			
Total variation:	4220.6			
$-2*\loglikelihood(IGLS) = 43190.59$				

**significant at 0.05 level*

Model: Vowel Duration = 137.08 – 0.82age – 2.57gender + 5.69region.

Table 4.1.b: Post hoc results for each vowel between age groups for VD

				N=4320
Vowel	(I) Age Group	(J) Age Group	Mean Difference (I-J)	Sig.
/i/	Children	Adolescent	20.26(*)	< 0.01
	Children	Adult	19.39(*)	< 0.01
	Adolescent	Adult	-0.88	0.968
/e/	Children	Adolescent	17.16(*)	< 0.01
	Children	Adult	19.01(*)	< 0.01
	Adolescent	Adult	1.85	0.847
/a/	Children	Adolescent	19.02(*)	< 0.01
	Children	Adult	22.03(*)	< 0.01
	Adolescent	Adult	3.01	0.392
/o/	Children	Adolescent	14.08(*)	0.014
	Children	Adult	22.49(*)	< 0.01
	Adolescent	Adult	8.41	0.211
/u/	Children	Adolescent	21.11(*)	< 0.01
	Children	Adult	17.75(*)	< 0.01
	Adolescent	Adult	-3.36	0.443
/i:/	Children	Adolescent	33.14(*)	< 0.01
	Children	Adult	11.06	0.166
	Adolescent	Adult	-22.07(*)	0.001
/e:/	Children	Adolescent	34.28(*)	< 0.01
	Children	Adult	17.18(*)	0.001
	Adolescent	Adult	-17.10(*)	0.001
/a:/	Children	Adolescent	29.22(*)	< 0.01
	Children	Adult	14.02(*)	< 0.01
	Adolescent	Adult	-15.20(*)	< 0.01
/o:/	Children	Adolescent	34.36(*)	< 0.01
	Children	Adult	14.29(*)	0.031
	Adolescent	Adult	-20.07(*)	0.001
/u:/	Children	Adolescent	35.65(*)	< 0.01
	Children	Adult	16.92(*)	0.016
	Adolescent	Adult	-18.73(*)	0.006

*significant at 0.05 level

Table 4.1.c: Post hoc results for each vowel between region groups for VD

N=4320				
Vowel	(I) Age Group	(J) Age Group	Mean Difference (I-J)	Sig
/i/	Coastal	Rayalaseema	-23.64(*)	< 0.01
	Coastal	Telengana	-14.38(*)	< 0.01
	Rayalaseema	Telengana	9.26(*)	0.029
/e/	Coastal	Rayalaseema	-22.71(*)	< 0.01
	Coastal	Telengana	-11.96(*)	0.001
	Rayalaseema	Telengana	10.74(*)	0.004
/a/	Coastal	Rayalaseema	-20.78(*)	< 0.01
	Coastal	Telengana	-9.90(*)	< 0.01
	Rayalaseema	Telengana	10.88(*)	< 0.01
/o/	Coastal	Rayalaseema	-21.58(*)	< 0.01
	Coastal	Telengana	-8.17	0.232
	Rayalaseema	Telengana	13.42(*)	0.021
/u/	Coastal	Rayalaseema	-22.60(*)	< 0.01
	Coastal	Telengana	-10.25(*)	0.001
	Rayalaseema	Telengana	12.34(*)	< 0.01
/i:/	Coastal	Rayalaseema	-45.65(*)	< 0.01
	Coastal	Telengana	-10.53	0.161
	Rayalaseema	Telengana	35.11(*)	< 0.01
/e:/	Coastal	Rayalaseema	-39.28(*)	< 0.01
	Coastal	Telengana	-9.59	0.084
	Rayalaseema	Telengana	29.69(*)	< 0.01
/a:/	Coastal	Rayalaseema	-38.38(*)	< 0.01
	Coastal	Telengana	-15.35(*)	< 0.01
	Rayalaseema	Telengana	23.03(*)	< 0.01
/o:/	Coastal	Rayalaseema	-41.25(*)	< 0.01
	Coastal	Telengana	-16.81(*)	0.006
	Rayalaseema	Telengana	24.44(*)	< 0.01
/u:/	Coastal	Rayalaseema	-44.32(*)	< 0.01
	Coastal	Telengana	-11.96	0.103
	Rayalaseema	Telengana	32.36(*)	< 0.01

*significant at 0.05 level

Table 4.1.d: Student's *t*-test results for all vowels between two gender groups for VD

Vowel	Mean Difference	N=4320	
		df	t
/i/	4.16	214	1.297
/e/	2.86	420	1.007
/a/	4.55	574	2.229*
/o/	7.24	358	1.741
/u/	1.75	646	0.739
/i:/	1.15	286	0.221
/e:/	4.31	430	1.077
/a:/	4.32	709	1.489
/o:/	4.12	286	0.844
/u:/	-3.24	286	-0.618

*significant at 0.05 level

From Table 4.1.d, it's observed that, only vowel /a/ had statistically significant difference in vowel duration between females and males.

From the results, it is inferred that there is a significant association between age, gender and region with respect to vowel duration. As age increased, there was a significant decrease in vowel duration. It may also be noted that, individual analysis of the vowels among the genders was not significant; however, it was significant when the influence of other level (consonant and individuals) variations were considered. From the analysis it is inferred that, vowel duration is influenced more by the individual variations as compared to preceding consonants.

The finding of reduced vowel duration for vowel /i/ in this study is similar to the findings of Nagamma Reddy (1998) and Prabhavathi Devi (1990) in Telugu and Sreedevi (2000), Venkatesh (1995) in Kannada. Similar findings have also been reported in English by Lisker (1974). The findings of the present study further support the report of Maddieson (1993) that vowel duration depends on the height of the tongue.

Central vowels having longer vowel duration followed by front and back vowels have been reported in most of the languages *viz.*, English (Clopper, Pisoni & de Jong, 2005; Hunyady, 2006), Hebrew (Most, Amir & Tobin, 2000), Greek (Daver, 1980), Telugu (Girija & Sridevi, 1995; Prabhavathi, 1990; Sreenivasa Rao, Suryakanth, Gangashetty & Yegnanarayana, 2001), and other Indian languages (Riyamol, 2007; Savithri, 1984; Venkatesh, 1995). Based on the aforesaid studies, it may be appropriate to conclude that vowel duration due to place of constriction is an universal phenomenon irrespective of language. This could probably be attributed to the anatomical and physiological aspects of the articulators involved in the production of these vowels.

Small and long vowel ratio observed in the current study have been reported earlier on children (Prabhavathi Devi, 1990) and adults (Girija & Sridevi, 1995; Nagamma Reddy, 1998). Minimal changes in the observed values of the current study could be due to the probable variables of the influence of preceding and following consonant and the sample studied by earlier authors. The increase in the ratio corresponding to age could be due to clear distinctions made by adults in the production of short and long vowels as compared to adolescents and children.

It can thus be concluded from the current study that, as the age increases, vowel duration reduces. The reduction in vowel duration as the age progresses is reported in English (Eguchi & Hirish, 1969; Kent & Burkhard, 1981; Kent & Forner, 1979; Krause, 1982; Smith, 1978), Hebrew (Most et.al., 2000) and in all Indian languages studied (Rashmi, 1985; Samuel, 1973; Sreedevi, 2000; Usha, 1978) excepting in Malayalam (Ampathu, 1998). Such a reduction in vowel duration could be attributed to neuromuscular changes that occur over the age (Eguchi & Hirish, 1969; Kent & Burkhard, 1981) and as an index of deterioration of vowel precision in various adult speakers (Strom, Thomson, Boutsen & Pentz, 2005).

The results of the present study also indicate that gender has an effect on the vowel duration in Telugu vowels. Studies in Australian English, American English, Indian languages (Kannada, Malayalam and Sanskrit) also report significant differences between females and males with females having longer duration (Cox, 2004; Hillenbrand, Getty,

Clark & Wheeler, 1995). Among the Indian studies, the study of only Venkatesh (1995) in Kannada reported no gender variations for short vowels whereas all other studies reported of females having significantly longer vowel duration than males (Rashmi, 1985; Riyamol, 2007; Sashidharan, 1995; Savithri, 1989; Sreedevi, 2000). Similar are the findings in the current study.

Regional variations or dialectal variations in vowel duration as observed in the present study for Telugu have also been reported for American English (Clopper, Pisoni & de Jong, 2005; Gendrot & Adda-Decker, 2007).

Changes in vowel duration with different preceding consonants have been observed and reported in English and other languages (Duggirala, 2005; Krause, 1982; Nagamma Reddy, 1999; Peterson & Lehiste, 1960; Sreenivasa Rao, Suryakanth, Gangashetty, & Yegnanarayana, 2001; Crystal & House, 1982). Vowels when preceded by stop consonants had the longest vowel duration followed by nasal and fricative consonants and have been reported in English and Malayalam (House, 1961; House & Fairbanks, 1953; Riyamol, 2007). Increase in vowel duration when preceded by bilabial consonants compared to velar sounds has been observed in English, Sanskrit (House & Fairbanks, 1953; Savithri, 1984). Vowels when followed by voiced consonants having longer vowel duration compared to voiceless consonants, as observed in the current study, have been reported in English and Telugu (Smith, 1978; Halle & Stevens, 1967; Girija & Sridevi, 1995).

4.1.2 Summary of VD

From the current study, it can be concluded that, in Telugu:

- Vowels /e/ and /a:/ have longest vowel duration.
- Short and long vowels /i/ have shortest vowel duration.
- Children have longer vowel duration as compared to adolescents or adults.
- Females have longer vowel duration than males.
- Regional influences are seen on vowel duration. Rayalaseema speakers have longer vowel duration as compared to Coastal or Telengana speakers.
- Central vowels when preceded by stop consonants have longest vowel duration followed by nasal and fricative consonants.

- Back vowels when preceded by nasal consonants have longest vowel duration followed by stop and fricative consonants.
- Central and Back vowels have longer vowel duration when preceded by dental followed by bilabial and velar consonants.
- The short and long vowel ratios observed in children are approximately 1:2, while it is 1:2.2 in adolescents and 1:2.4 in adults.
- Central vowels have longer vowel duration followed by front and back vowels.

4.2 Spectral characteristics of Telugu vowels

4.2.1.1 Fundamental Frequency (F0)

In the current study, short vowels had maximum mean fundamental frequency as compared to the long vowels. Maximum mean fundamental frequency was observed for high back vowel /u/ and for front high vowel /i:/. Minimum mean F0 was observed for low mid vowels /a/ and /a:/. Back vowels had higher mean F0 followed by front and central vowels. The means and 1 SD bars of F0 for all vowels are depicted in Figure 4.2.1.1. The means, SD and 95% confidence interval for mean of all the vowels and for central, front and back vowels across the age groups are given in Appendix VIII b (Tables 4.2.1.1 and 4.2.1.2 respectively).

The mean F0 was highest in children followed by adolescents and adults for all vowels. Children and adults had higher mean fundamental frequency for high back vowel /u/. High front vowel /i:/ had higher mean fundamental frequency in children, adolescents and adults. The low mid vowel /a/ and /a:/ had lowest mean fundamental frequency in children, adolescents and adults. The means and 1 SD bars all vowels' F0 across age groups are depicted in Figure 4.2.1.2. The means, SD and 95% confidence interval for mean of all the vowels for three age groups are given in Appendix VIII b (Table 4.2.1.3).

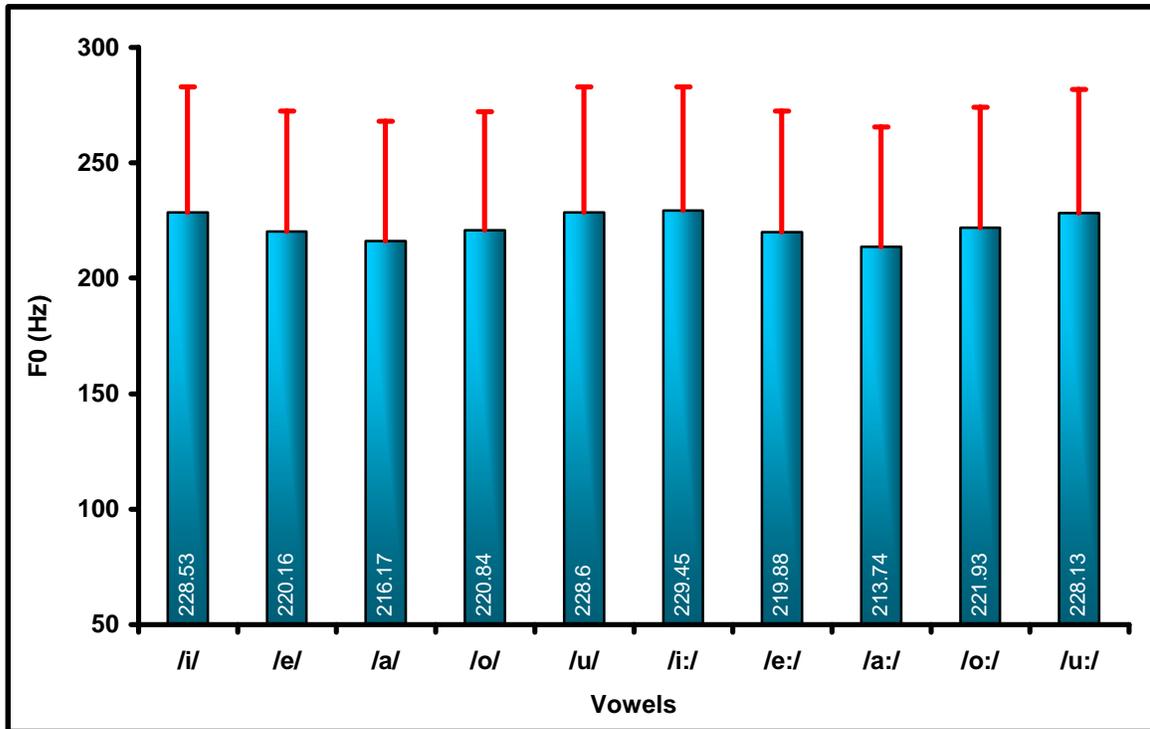


Figure 4.2.1.1: Mean F0 (Hz) and 1 SD bars of all vowels

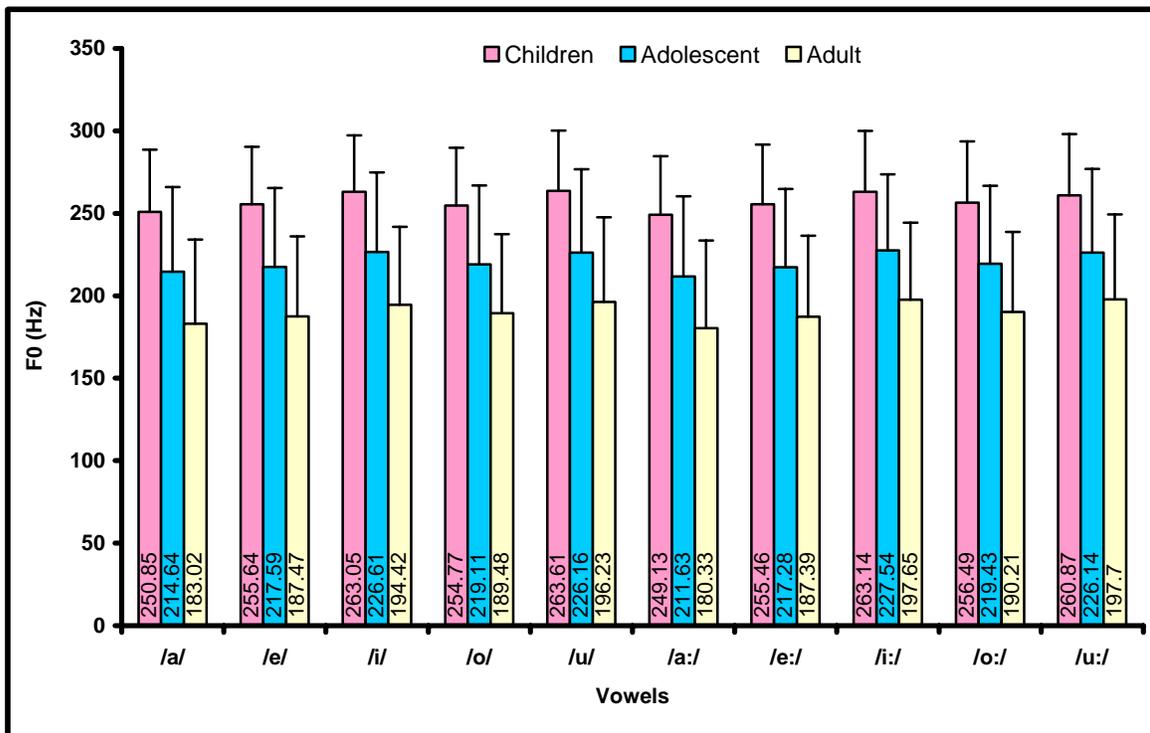


Figure 4.2.1.2: Mean F0 (Hz) and 1 SD bars across age groups

Females had higher mean F0 for all vowels as compared to males. The high back vowel /u/ had the highest mean F0 in females and the high front vowel /i/, the highest in males. High front vowel /i:/ had highest fundamental frequency in both females and males. Low mid vowel /a/ and /a:/ had lowest fundamental frequency in females and males respectively. The means and 1 SD bars of all vowels' F0 across gender groups are depicted in Figure 4.2.1.3. The means, SD and 95% confidence interval for mean of all the vowels across the two gender groups are given in Appendix VIII b (Table 4.2.1.4).

Regionally, Rayalaseema speakers had higher F0 for all short and long vowels followed by Telengana and Coastal speakers. Among the short vowels, /u/ had the highest fundamental frequency in Coastal and Telengana speakers while /i/ in Rayalaseema speakers. Long vowel /i:/ had the highest fundamental frequency in Coastal, Rayalaseema and Telengana. Short and long vowels /a/ and /a:/ had lowest fundamental frequency in Coastal, Rayalaseema and Telengana speakers. The means and 1 SD bars of all vowels' F0 across regional groups are depicted in Figure 4.2.1.4. The means, SD and 95% confidence interval for mean of all the vowels across the three region groups are given in Appendix VIII b (Table 4.2.1.5).

Scrutiny of data on preceding consonant context revealed that front high vowels /i/ and /i:/ had higher mean F0 when preceded by nasal consonants as compared to stop consonants; front mid vowels /e/ and /e:/ had higher mean F0 when preceded by affricates as compared to stop consonants; low mid vowels /a/ and /a:/ had higher F0 when preceded by fricatives and nasals as compared to stop consonants; back mid vowel /o/ had higher F0 when preceded by stop consonant while for /o:/, it was when preceded by affricate consonants; back high vowel /u/ had higher F0 when preceded by fricative consonants while for /u:/, it was when preceded by stop consonants. Generally, vowels following affricates had higher F0 followed by nasal, fricative, stop, trill, lateral and semi vowel consonants. The means and 1 SD bars of all vowels' F0 across different preceding manner of articulation for short and long vowels are depicted in Figures 4.2.1.5a and 4.2.1.5b respectively and the values are given Appendix VIII b (Table 4.2.1.6).

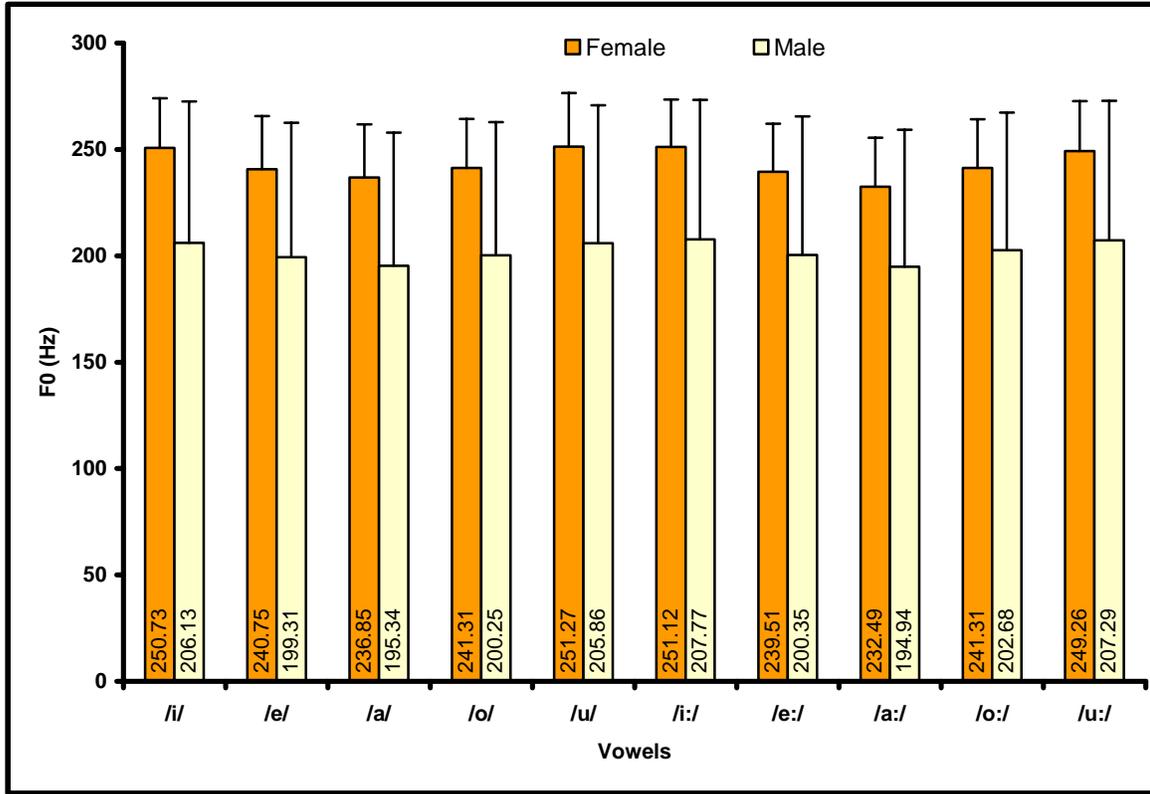


Figure 4.2.1.3: Mean F0 (Hz) and 1 SD bars across gender groups

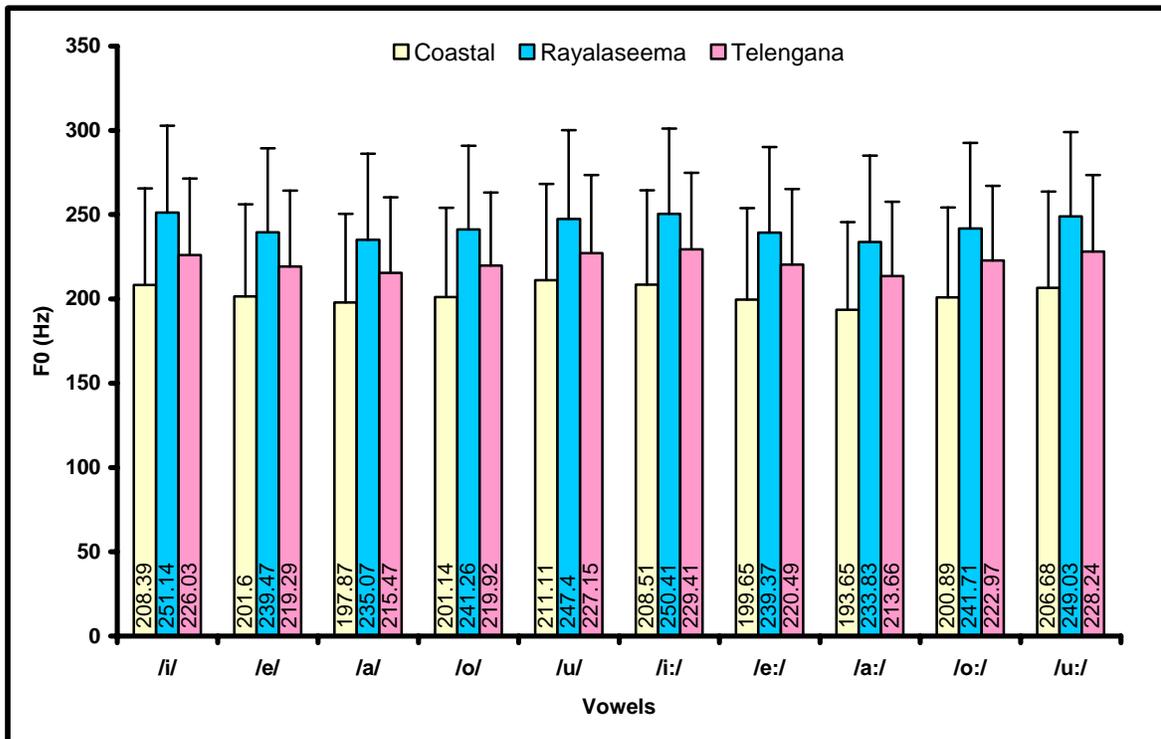


Figure 4.2.1.4: Mean F0 (Hz) and 1 SD bars across region groups

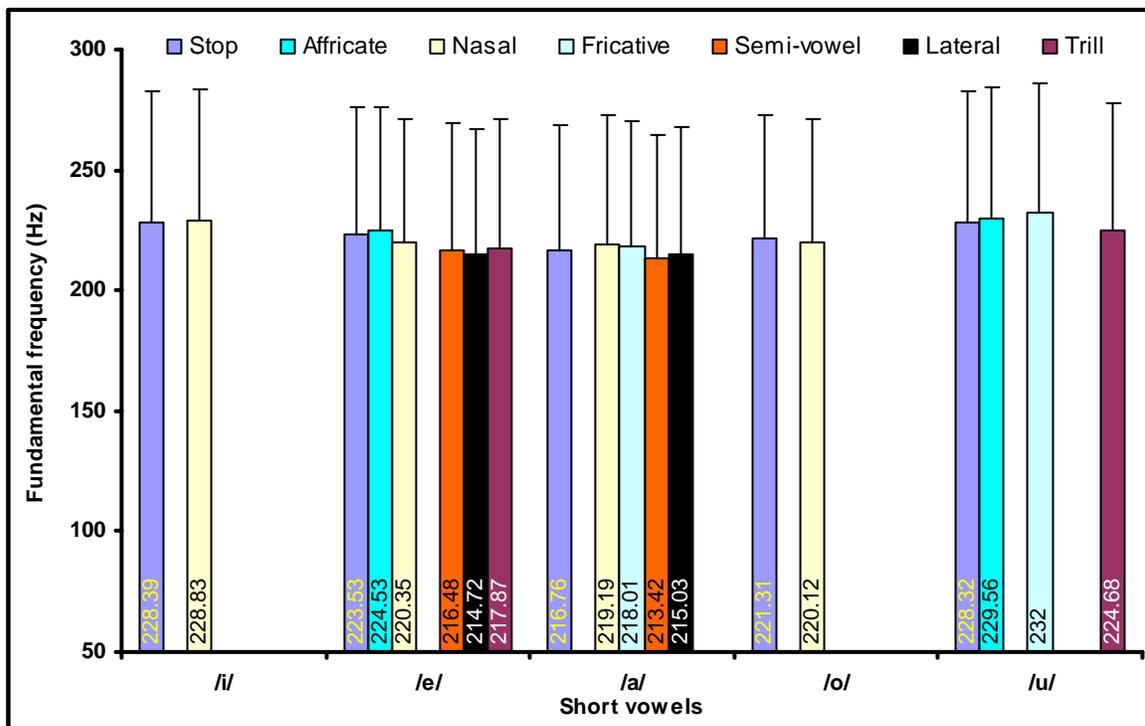


Figure 4.2.1.5a: Mean F0 (Hz) and 1 SD bars of short vowels preceded by different manner of articulation consonants

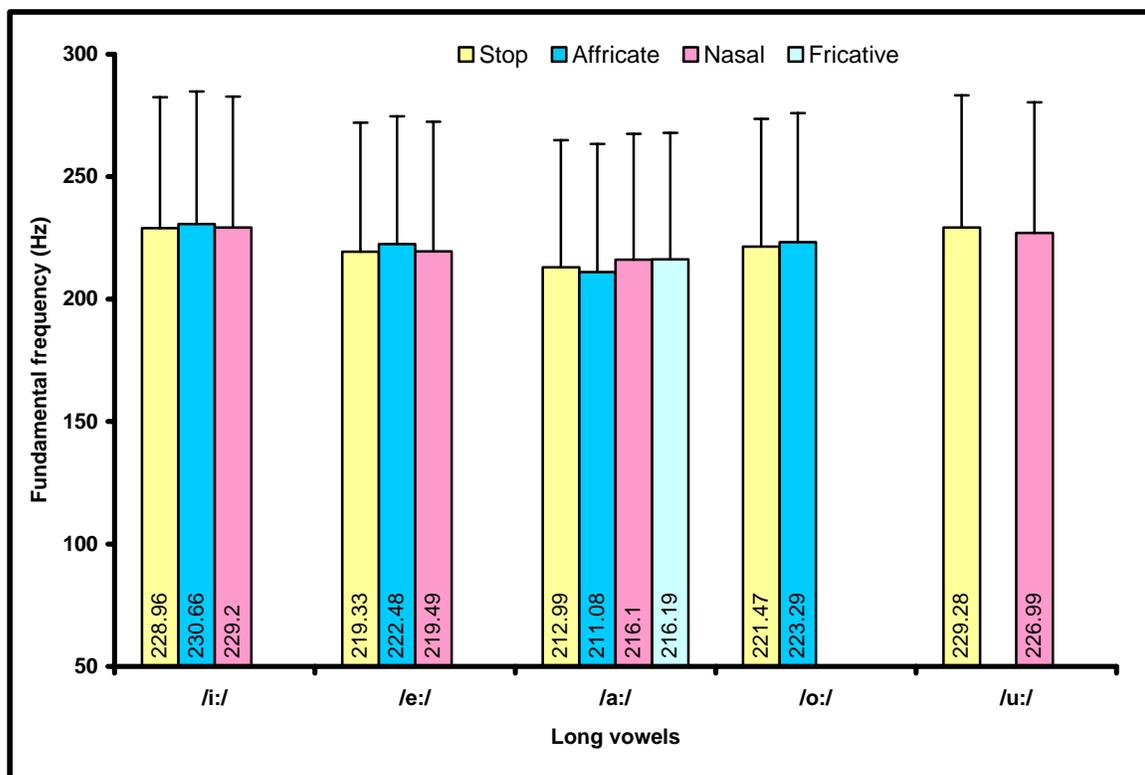


Figure 4.2.1.5b: Mean F0 (Hz) and 1 SD bars of long vowels preceded by different manner of articulation consonants

Place of articulation of the preceding consonant also has an effect on F0 in Telugu vowels. Vowels /i/, /i:/, /a:/ and /u:/ had higher mean F0 when preceded by bilabials; /o/ and /u/ when preceded by dentals; /e:/ and /o:/ when preceded by alveopalatals; /a/ when preceded by velars and /e/ when preceded by retroflex. The means and 1 SD bars of all vowels' F0 across different preceding place of articulation consonant for short and long vowels are depicted in Figures 4.2.1.6a and 4.2.1.6b respectively and the values are given in Appendix VIII b (Table 4.2.1.7).

Vowels when preceded by voiced consonants had lower F0 than when followed by voiceless consonants. The means and 1 SD bars of all vowels' F0 across voicing feature of the preceding consonant are depicted in Figure 4.2.1.7 and the values are given in Appendix VIII b (Table 4.2.1.8).

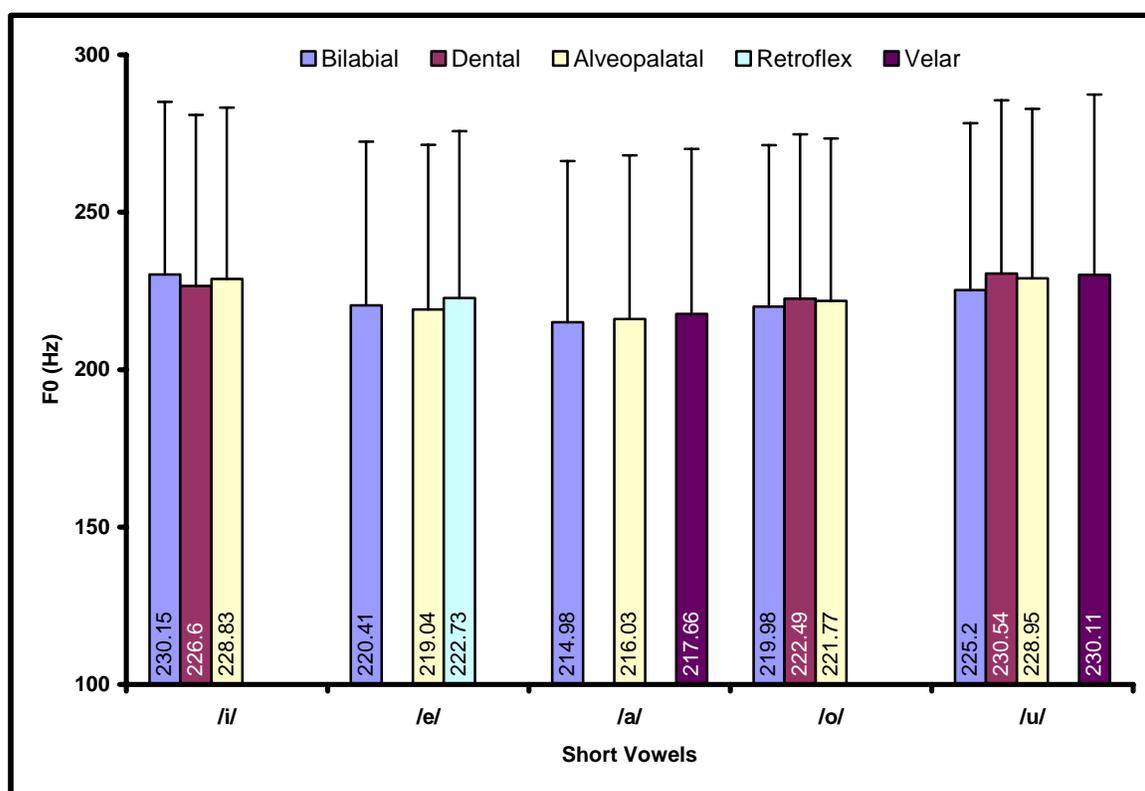


Figure 4.2.1.6a: Mean F0 (Hz) and 1 SD bars of short vowels preceded by different place of articulation consonants

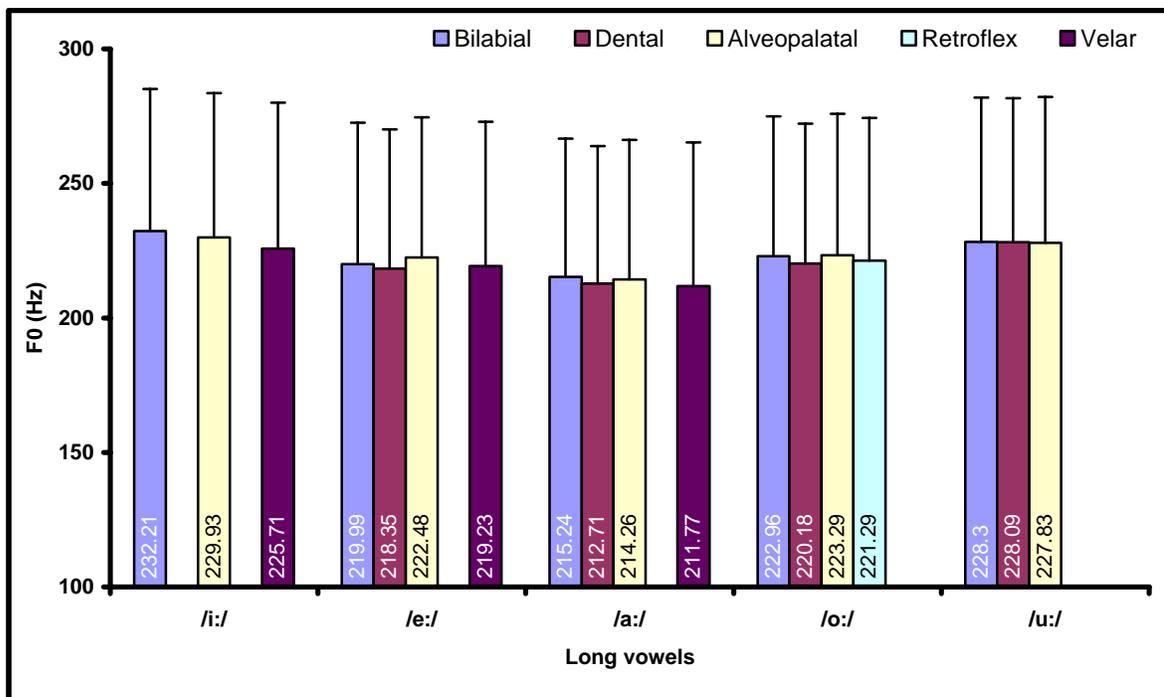


Figure 4.2.1.6b: Mean F0 (Hz) and 1 SD bars of long vowels preceded by different place of articulation consonants

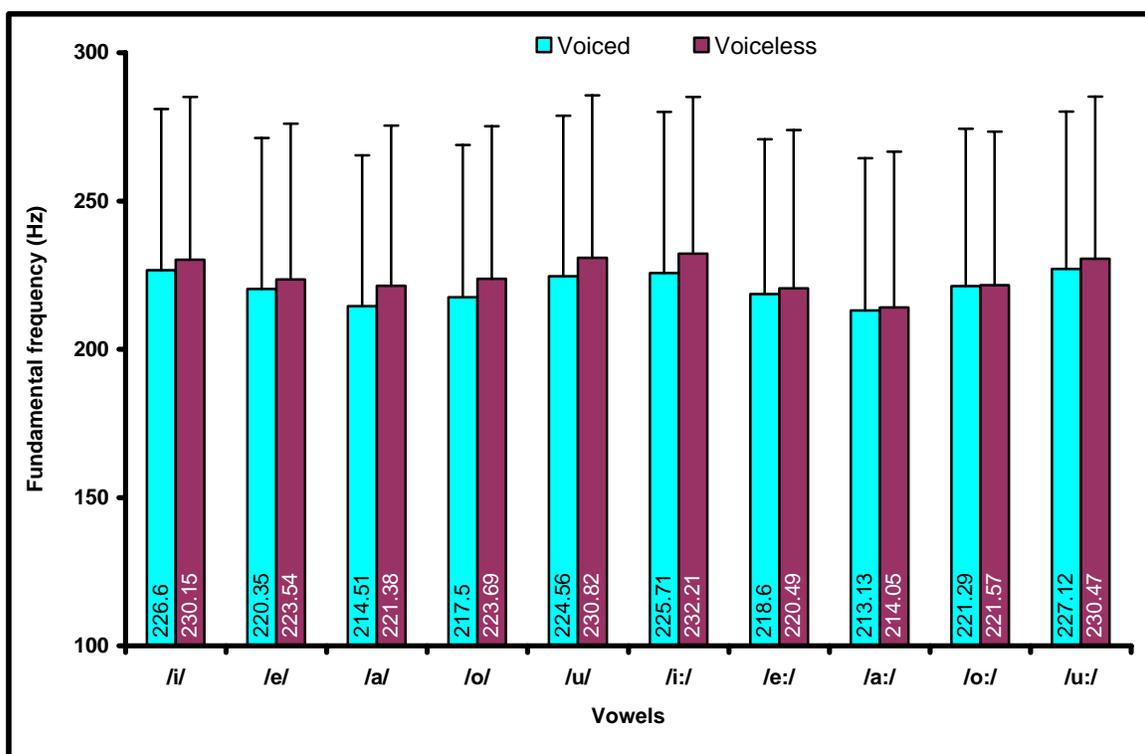


Figure 4.2.1.7: Mean F0 (Hz) and 1 SD bars of vowels preceded by different voicing feature of consonants

Questions that cropped up to further understand the variations in the fundamental frequency observed in the analysis were (1) Do age, gender and region have any association with fundamental frequency and if so what kind of association? (2) Which of the vowels studied have significant difference in fundamental frequency among the age, gender and region groups? Random intercept model 3 was used (as described in the method) to understand if there was any association between F0 and age, gender and region groups. The results are given in Table 4.2.1.a.

Table 4.2.1.a: Statistical analysis using random intercept model for F0

N=4320				
Covariates	Estimate	Std. Error	Wald ratio	P value*
Constant (β_{0ij})	326.59	2.87	113.79	< 0.01
Age (β_{1ijk})	-4.33	0.09	-48.11	< 0.01
Gender (β_{2ijk})	-37.56	1.19	-31.56	< 0.01
Region (β_{3ijk})	8.58	0.73	11.75	< 0.01
Variance components				
Random Error:	1499.40			
Consonant Level:	23.18			
Individual level:	16.49			
Total variation:	1539.07			
$-2*\loglikelihood(IGLS) = 43714.23$				
<i>*significant at 0.05 level</i>				

Model: Fundamental frequency (F0) = 326.59 – 4.33age – 37.56gender + 8.58region.

From Table 4.2.1.a, it's observed that, there is a significant association between F0 and age, gender and region with age and gender having negative association with F0.

Further to study as to which of the vowels differed significantly among the age and region groups, Tukey HSD was done and the results suggested that F0 of all vowels showed statistically significant difference between children, adolescents and adults (Table 4.2.1.b). Within the region groups, all vowels had statistically significant difference in F0 between Coastal, Rayalaseema and Telengana speakers, except for front vowel /i/ between

Coastal and Telengana speakers (Table 4.2.1.c). Student's *t*-test to study as to which of the vowels significantly differed with the gender groups are depicted in Table 4.2.1.d.

Table 4.2.1.b: Post hoc results for each vowel between age groups for F0

N=4320				
Vowel	(I) Age Group	(J) Age Group	Mean Difference (I-J)	Sig.
/i/	Children	Adolescent	36.4494(*)	< 0.01
	Children	Adult	66.6316(*)	< 0.01
	Adolescent	Adult	30.1822(*)	< 0.01
/e/	Children	Adolescent	38.0486(*)	< 0.01
	Children	Adult	68.1694(*)	< 0.01
	Adolescent	Adult	30.1208(*)	< 0.01
/a/	Children	Adolescent	36.2208(*)	< 0.01
	Children	Adult	67.8446(*)	< 0.01
	Adolescent	Adult	31.6238(*)	< 0.01
/o/	Children	Adolescent	35.6672(*)	< 0.01
	Children	Adult	65.2933(*)	< 0.01
	Adolescent	Adult	29.6261(*)	< 0.01
/u/	Children	Adolescent	37.4517(*)	< 0.01
	Children	Adult	67.3779(*)	< 0.01
	Adolescent	Adult	29.9262(*)	< 0.01
/i:/	Children	Adolescent	35.6026(*)	< 0.01
	Children	Adult	65.4922(*)	< 0.01
	Adolescent	Adult	29.8896(*)	< 0.01
/e:/	Children	Adolescent	38.1725(*)	< 0.01
	Children	Adult	68.0679(*)	< 0.01
	Adolescent	Adult	29.8954(*)	< 0.01
/a:/	Children	Adolescent	37.5033(*)	< 0.01
	Children	Adult	68.8038(*)	< 0.01
	Adolescent	Adult	31.3005(*)	< 0.01
/o:/	Children	Adolescent	37.0622(*)	< 0.01
	Children	Adult	66.2840(*)	< 0.01
	Adolescent	Adult	29.2218(*)	< 0.01
/u:/	Children	Adolescent	34.7340(*)	< 0.01
	Children	Adult	63.1691(*)	< 0.01
	Adolescent	Adult	28.4351(*)	< 0.01

*significant at 0.05 level

Table 4.2.1.c: Post hoc results for each vowel between region groups for F0

N=4320

Vowel	(I) Age Group	(J) Age Group	Mean Difference (I-J)	Sig.
/i/	Coastal	Rayalaseema	-42.7419(*)	< 0.01
	Coastal	Telengana	-17.6331	0.105
	Rayalaseema	Telengana	25.1089	0.011
/e/	Coastal	Rayalaseema	-37.8736(*)	< 0.01
	Coastal	Telengana	-17.6829(*)	0.004
	Rayalaseema	Telengana	20.1908(*)	0.001
/a/	Coastal	Rayalaseema	-37.1982(*)	< 0.01
	Coastal	Telengana	-17.5957(*)	0.002
	Rayalaseema	Telengana	19.6025(*)	< 0.01
/o/	Coastal	Rayalaseema	-40.1170(*)	< 0.01
	Coastal	Telengana	-18.7864(*)	0.009
	Rayalaseema	Telengana	21.3306(*)	0.002
/u/	Coastal	Rayalaseema	-36.3025(*)	< 0.01
	Coastal	Telengana	-16.0484(*)	0.004
	Rayalaseema	Telengana	20.2540(*)	< 0.01
/i:/	Coastal	Rayalaseema	-41.8978(*)	< 0.01
	Coastal	Telengana	-20.9027	0.013
	Rayalaseema	Telengana	20.9951	0.013
/e:/	Coastal	Rayalaseema	-39.7149(*)	< 0.01
	Coastal	Telengana	-20.8319(*)	0.001
	Rayalaseema	Telengana	18.8830(*)	0.004
/a:/	Coastal	Rayalaseema	-40.1844(*)	< 0.01
	Coastal	Telengana	-20.0118(*)	< 0.01
	Rayalaseema	Telengana	20.1725(*)	< 0.01
/o:/	Coastal	Rayalaseema	-40.8191(*)	< 0.01
	Coastal	Telengana	-22.0791(*)	0.006
	Rayalaseema	Telengana	18.7400	0.025
/u:/	Coastal	Rayalaseema	-42.3416(*)	< 0.01
	Coastal	Telengana	-21.5518	0.011
	Rayalaseema	Telengana	20.7898	0.014

*significant at 0.05 level

Table 4.2.1.d: Student's *t*-test results for all vowels between two gender groups.

Vowel	Mean Difference	df	N=4320
			t
/i/	44.5927	213	6.590*
/e/	41.4408	321.992	9.634*
/a/	41.5095	372.688	10.440*
/o/	41.0531	223.901	8.207*
/u/	45.4130	414.841	11.676*
/i:/	43.3594	175.625	7.516*
/e:/	39.1510	264.994	8.327*
/a:/	37.5414	447.992	10.417*
/o:/	38.6287	178.234	6.765*
/u:/	41.9717	179.405	7.229*

*significant at 0.05 level

From the Table 4.2.1.d, it's observed that, all vowels had statistically significant differences in F0 between females and males.

From the results, it is inferred that there is a significant association between age, gender and region with F0. As age increased, there was a significant variation in F0. Except for the vowel /i/ between Coastal and Telengana speakers, all other vowels in all age, gender groups had significant differences in F0. It is also observed that, consonants contribute more for the variations of F0 of vowels along with individual variations.

The findings of the current study although supporting the theory proposed by Mohr (1971) that build of air pressure behind the vowel constriction is the causative factor for variations in the F0, do not support the fact that back vowels have low F0.

In the current study, high vowels /i/ and /u/ had higher F0 and low vowel /a/ and /a:/, low F0. Similar findings are noted in the literature for English (Lehiste & Peterson, 1961; O'Shaughnessy, 1976; Peterson & Barney, 1952; Whalen & Levitt, 1995; Yoshiyuki, 1982a), Hebrew (Most et.al., 2000) and Kannada (Venkatesh, 1995). The current findings support the theories proposed by Taylor (1933), Ladefoged (1964) and Lehiste (1970) that

high vowels have high F0 due to mechanical pull of the tongue and transference of muscle tension.

In the current study, it was observed that as the age increases, F0 reduces. The reduction in F0 as the age progresses depicts the developmental trend as reported in English (Crelin, 1987; Eguchi & Hirish, 1969; Kent, 1976; Pickett, 1996; Robb & Saxman, 1985), Kannada (Rashmi, 1985; Samuel, 1973; Sreedevi, 2000; Usha, 1978), and in Malayalam (Ampathu, 1998). The changes in F0 can be attributed to the anatomical and physiological changes that occur in vocal folds (Crelin, 1987; Pickett, 1996).

In English, Kent & Read (1995) commented that F0 varies with reference to gender and in Hebrew, Most et.al., (2000) reported of significant gender variations. In Indian languages, Venkatesh (1995) and Sreedevi (2000) in Kannada; Ampathu (1998) and Riyamol (2007) in Malayalam reported of females having higher F0 than males. The current study endorses the findings of the above mentioned studies.

It is noted in the current study that, regions have an effect on the fundamental frequency of vowels. Venkateswara Sastry (1990-91) reported of stress and linguistic variations among the regions which could be considered as the contributing factors for the variations in F0 among the regions of this study and lending support to the reports of Umeda (1981) and Vorperian et.al., (2009) that anatomical variations could also be a contributing factor. It's hence felt that understanding of the linguistic aspects of the language and anatomical variations between the regions could help in a better understanding of this aspect.

Vowels having higher F0 when preceded by voiced stops have been reported by Dyhr (1990); Honda & Fujimura (1991); House & Fairbanks (1953) and Lehiste & Peterson (1961). However, Umeda (1981) reported that voiceless stops had higher F0 than voiceless fricatives. In the current study, although variations in F0 are observed with different preceding consonants, these findings are not same as is English. It is observed that most of the vowels had higher F0 when preceded by fricatives, affricates and nasals than stop consonants. Only detailed analysis using specific context will strengthen the findings and evolve clarity on this issue. As the following consonant and vowel influences

are not controlled in the current study, inferring or generalizing the findings may not be appropriate and should be done with caution.

4.2.1.2 Summary of F0

From the current study, it can be concluded that, in Telugu:

- High vowels, /i/ and /u/ have higher F0 and low vowel /a/ and /a:/, low F0.
- Short vowels have higher F0 than long vowels.
- Back vowels have higher F0 followed by front and central vowels.
- F0 was highest in children followed by adolescent and adults for all short and long vowels.
- Children and adults have highest F0 for short vowel /u/. Long vowel /i:/, highest F0 in all age groups.
- Short and long vowel /a/ and /a:/ have lowest F0 in all age, gender and region groups.
- Females have higher F0 for all short and long vowels as compared to males.
- Among the short vowel /u/ has the highest F0 in females and /i/ in males.
- Long vowel /i:/ has highest F0 in both genders.
- Rayalaseema speakers have higher F0 for all short and long vowels followed by Telengana and Coastal speakers.
- Short vowel /u/ has highest fundamental frequency in Coastal and Telengana speakers while /i/ in Rayalaseema speakers.
- Long vowel /i:/ has highest fundamental frequency in Coastal, Rayalaseema and Telengana.
- Vowels when preceded by voiced consonants have lower F0 than when followed by voiceless consonants.
- Vowels following affricates have higher F0 followed by nasal, fricatives, stops, trill, lateral and semi vowel.
- Vowels followed by dental consonants have higher F0 followed by alveopalatal, retroflex, bilabial and velar consonants.
- Central vowels when preceded by nasal and fricatives consonants have highest fundamental frequency and lowest when preceded by stops.

- Back vowels when preceded by fricatives have highest F0 and lowest when preceded by nasals.
- Back vowels have highest fundamental frequency when preceded by velar and lowest when preceded by bilabial consonants.

4.2.2.1 First Formant Frequency (F1)

Scrutiny of the F1 data revealed that low mid vowel /a/ and /a:/ had the highest mean F1 and back high vowel /u/ and /u:/, the lowest mean F1. Except for vowel /a/, mean F1 decreased with increase in phonetic length of the vowel. Central vowels had higher mean F1 followed by front and back vowels. The mean F1 and 1 SD bars of all vowels are depicted in Figure 4.2.2.1. The means, SD and 95% confidence interval for mean of all the vowels and for central, front and back vowels across the age groups are given in Appendix VIII c (Tables 4.2.2.1 and 4.2.2.2 respectively).

In the current study, it was observed that as age increases, mean F1 decreased. Children had higher mean F1 followed by adolescents and adults for all vowels. It was also observed that, the low mid vowel /a/ and /a:/ had higher mean F1 values and high back vowels /u/ and /u:/, lower mean F1 values. Except for vowel /a/, mean F1 decreased with increase in phonetic length of the vowel in all age groups. The mean F1 and 1 SD bars of all vowels across age groups are depicted in Figure 4.2.2.2. The means, SD and 95% confidence interval for mean of all the vowels across the three age groups are given in Appendix VIII c (Table 4.2.2.3).

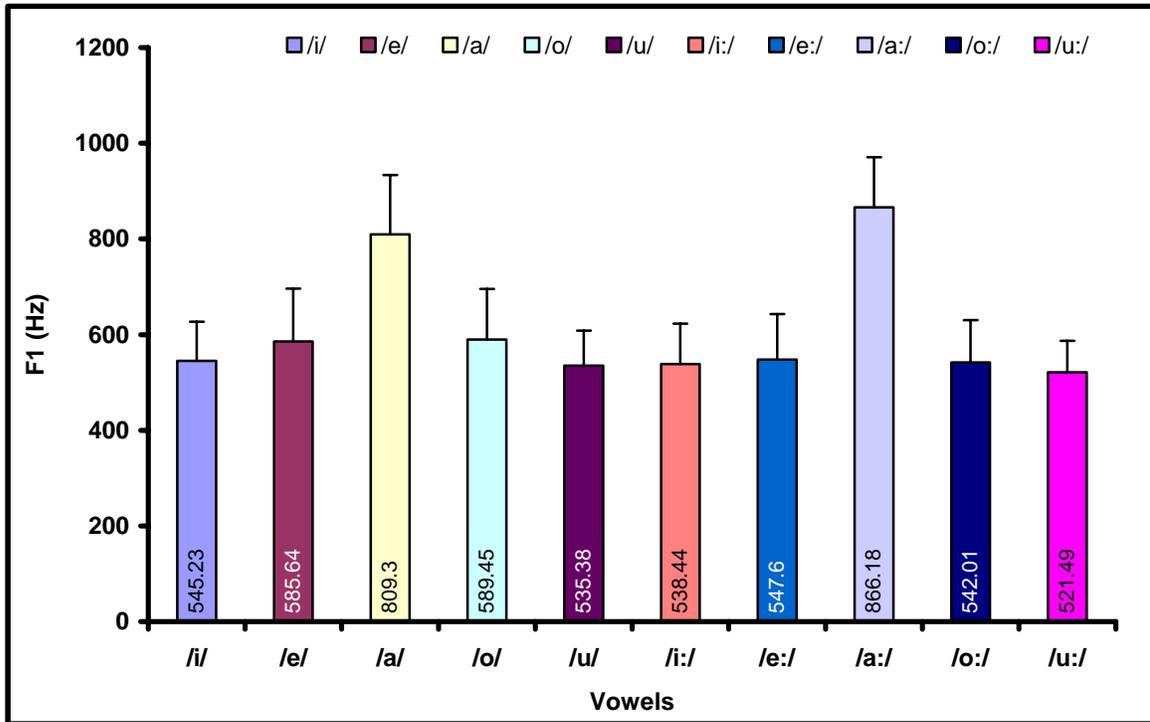


Figure 4.2.2.1: Mean F1 (Hz) and 1 SD bars of all vowels

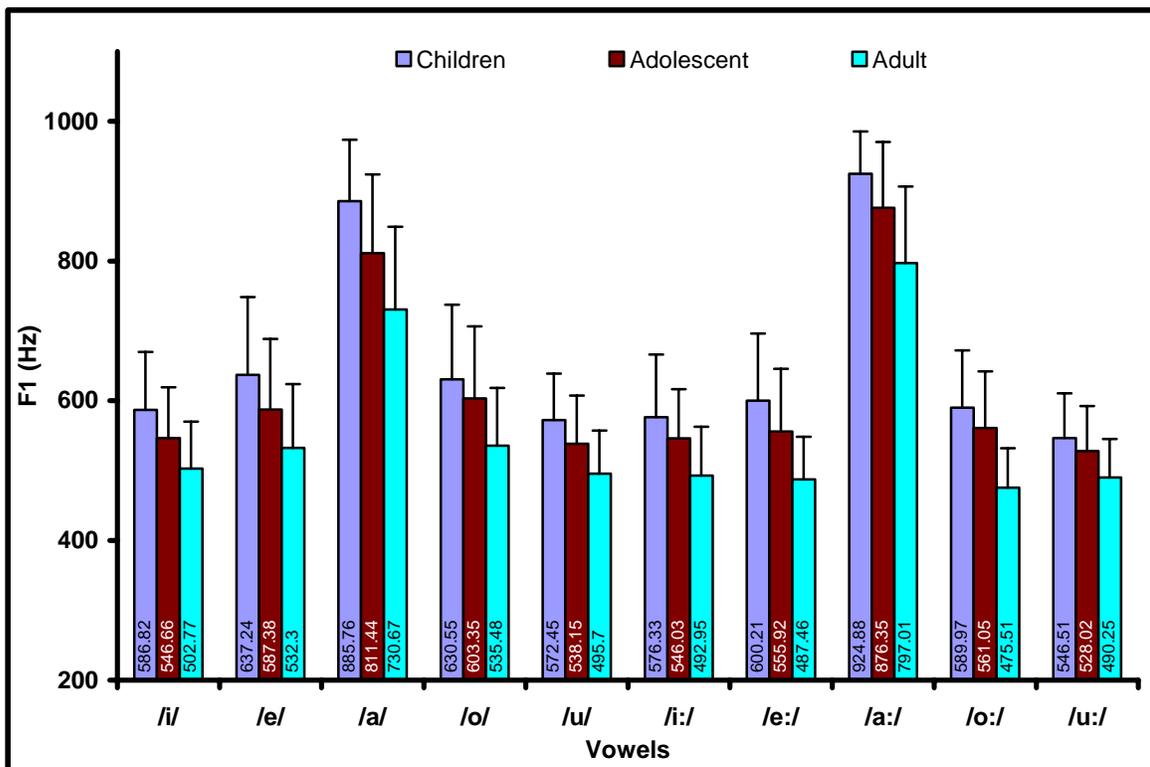


Figure 4.2.2.2: Mean F1 (Hz) and 1 SD bars across age groups

Females had higher mean F1 values when compared to males for all vowels. Low mid vowels /a/ and /a:/ had higher F1 while back high vowels /u/ and /u:/ had lower mean F1 in both genders. Except for vowel /a/, mean F1 decreased with increase in phonetic length of the vowel in all age groups. Central vowel /a/ had higher mean F1 followed by front vowel /i/ and back vowel /u/. The mean F1 and 1 SD bars of all vowels across gender groups are depicted in Figure 4.2.2.3. The means, SD and 95% confidence interval for mean of all the vowels across the gender groups are given in Appendix VIII c (Table 4.2.2.4).

It has been observed in this study that, dialect has an effect on the first formant. Accordingly, it was observed that, for vowels /o/, /i:/, /a:/, /o:/, and /u:/, Telengana speakers had higher mean F1 followed by Rayalaseema and Coastal speakers; for vowel /e:/, speakers from Coastal region had higher mean F1 followed by Rayalaseema and Telengana and for /a/, speakers from Telengana had higher mean F1 followed by Coastal and Rayalaseema speakers. Low mid vowel /a/ had higher F1 and back high vowel /u:/ had lower F1 across the regions except for Telengana, where /e:/ had lower F1. Across all regions, F1 reduced with increase in phonetic length except for vowel /a/. The mean F1 and 1 SD bars of all vowels across regional groups are depicted in Figure 4.2.2.4. The means, SD and 95% confidence interval for mean of all the vowels across the three region groups are given in Appendix VIII c (Table 4.2.2.5).

Front vowels /i/, /i:/, /e/, /e:/, mid vowel /a/ and back vowels /o/ and /u:/, had higher mean F1 when preceded by nasal consonants than stops. Vowels /u/ and /a:/ had higher mean F1 when preceded by affricates than stop consonants. Only back long vowel /o:/ had higher mean F1 when preceded by stop consonants. Mid vowel /a/ had higher mean F1 when preceded by lateral followed by nasal, stop, semivowel and fricative consonants. The mean F1 and 1 SD bars of short and long vowels across different manner of articulation of preceding consonant are depicted in Figures 4.2.2.5a and 4.2.2.5b respectively. The means and SD of all the vowels across the different manner of articulation consonants are given in Appendix VIII c (Table 4.2.2.6).

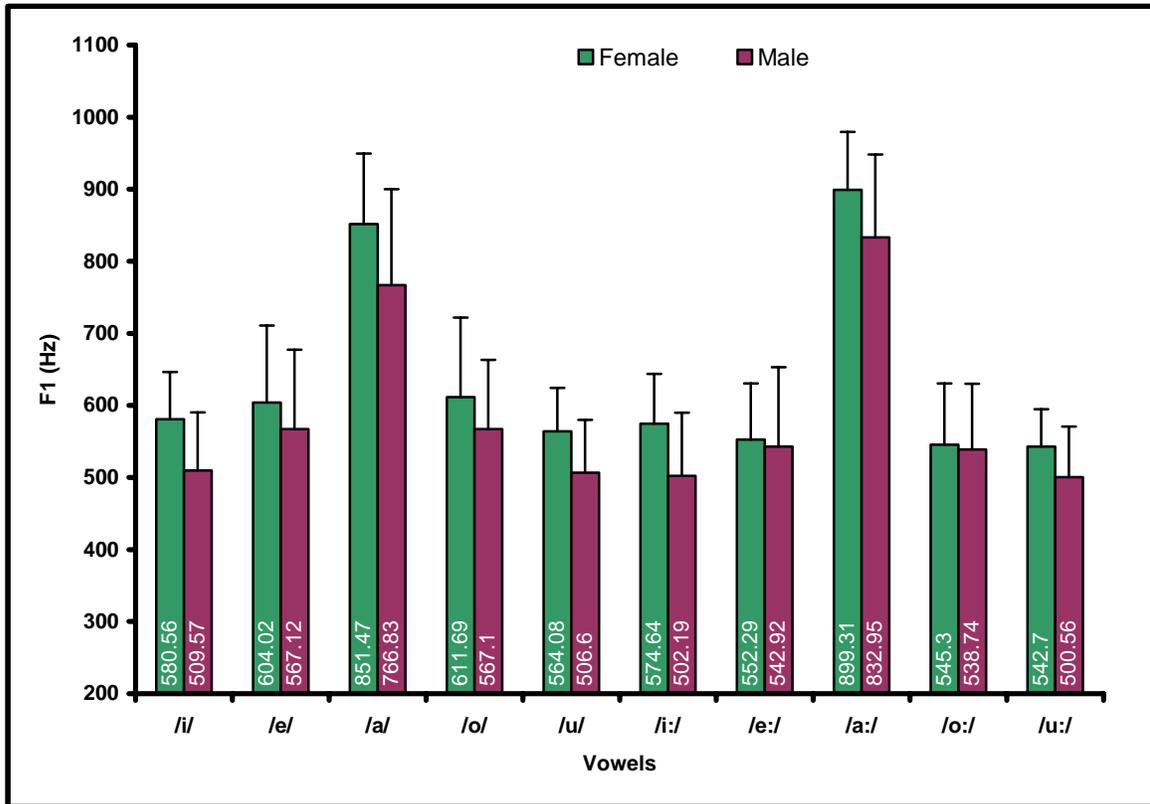


Figure 4.2.2.3: Mean F1 (Hz) and 1 SD bars across gender groups

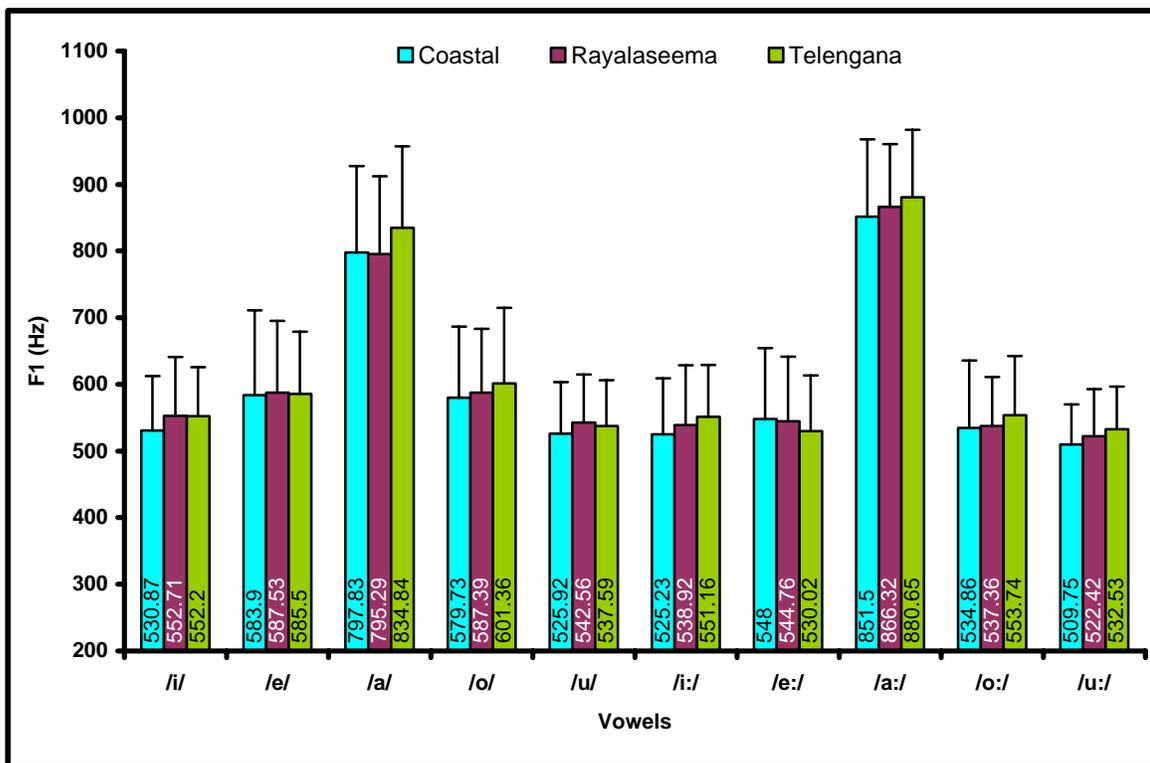


Figure 4.2.2.4: Mean F1 (Hz) and 1 SD bars across region groups

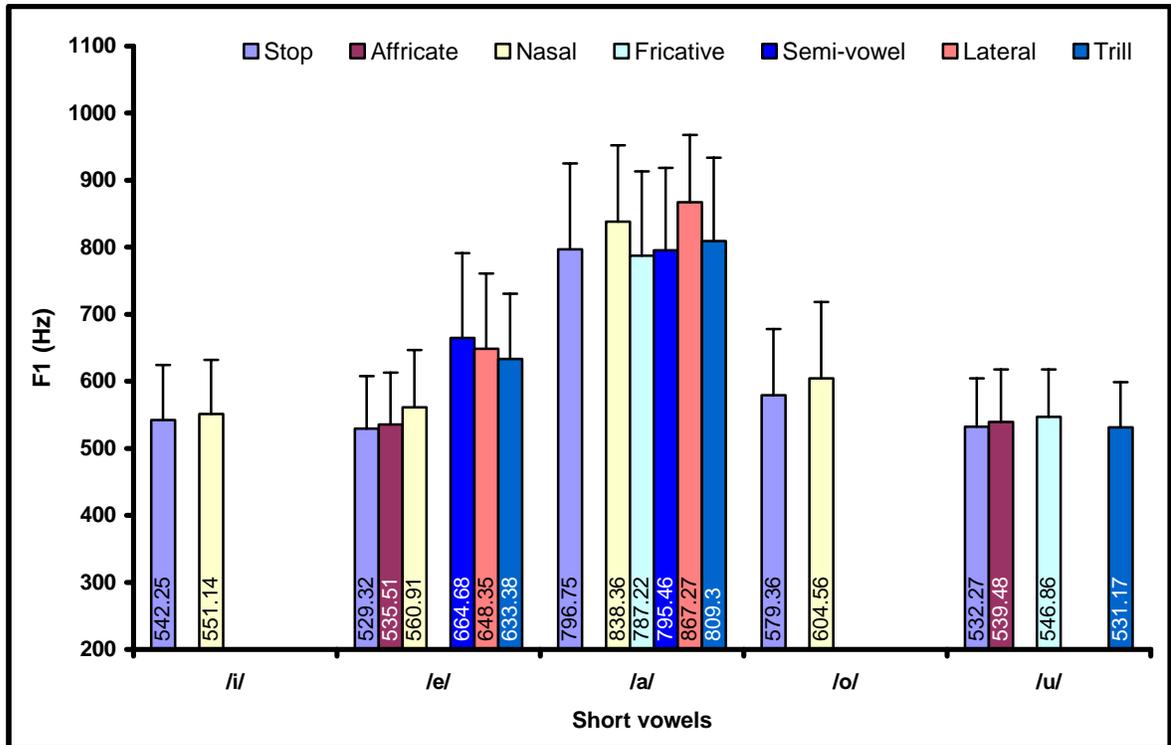


Figure 4.2.2.5a: Mean F1 (Hz) and 1 SD bars of short vowels preceded by different manner of articulation consonants

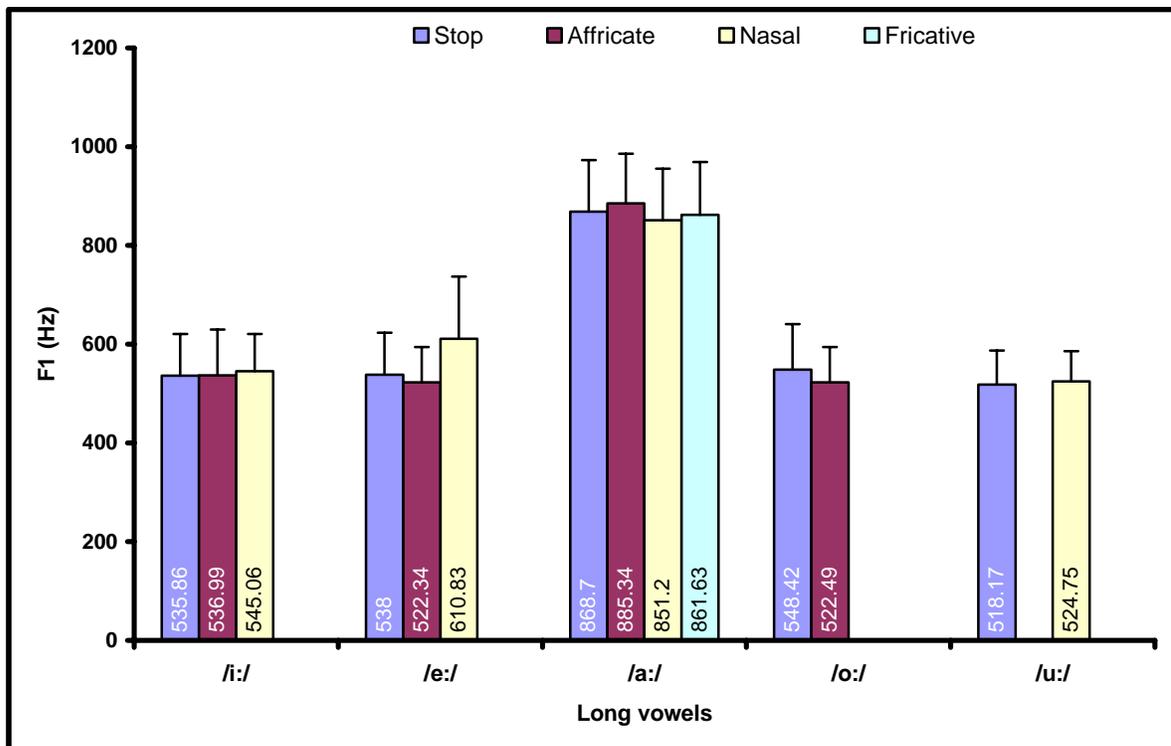


Figure 4.2.2.5b: Mean F1 (Hz) and 1 SD bars of long vowels preceded by different manner of articulation consonants

It's to be noted that, place of articulation of the preceding consonants also had an effect on F1 of the vowel. All vowels had higher mean F1 when preceded by alveopalatal consonants as compared to bilabials except for mid vowels /e:/ and /o:/. Short and long vowels /o/, /u/; long vowel /a:/ had higher mean F1 when preceded by dental consonants as compared to bilabial consonants; however, /i/ and /e:/ had higher mean F1 when preceded by bilabial consonants as compared to dental consonants. The mean F1 and 1 SD bars of short and long vowels across different place of articulation of preceding consonant are depicted in Figures 4.2.2.6a and 4.2.2.6b respectively. The means and SD of all the vowels across the different places of articulation consonants are given in Appendix VIII c (Table 4.2.2.7).

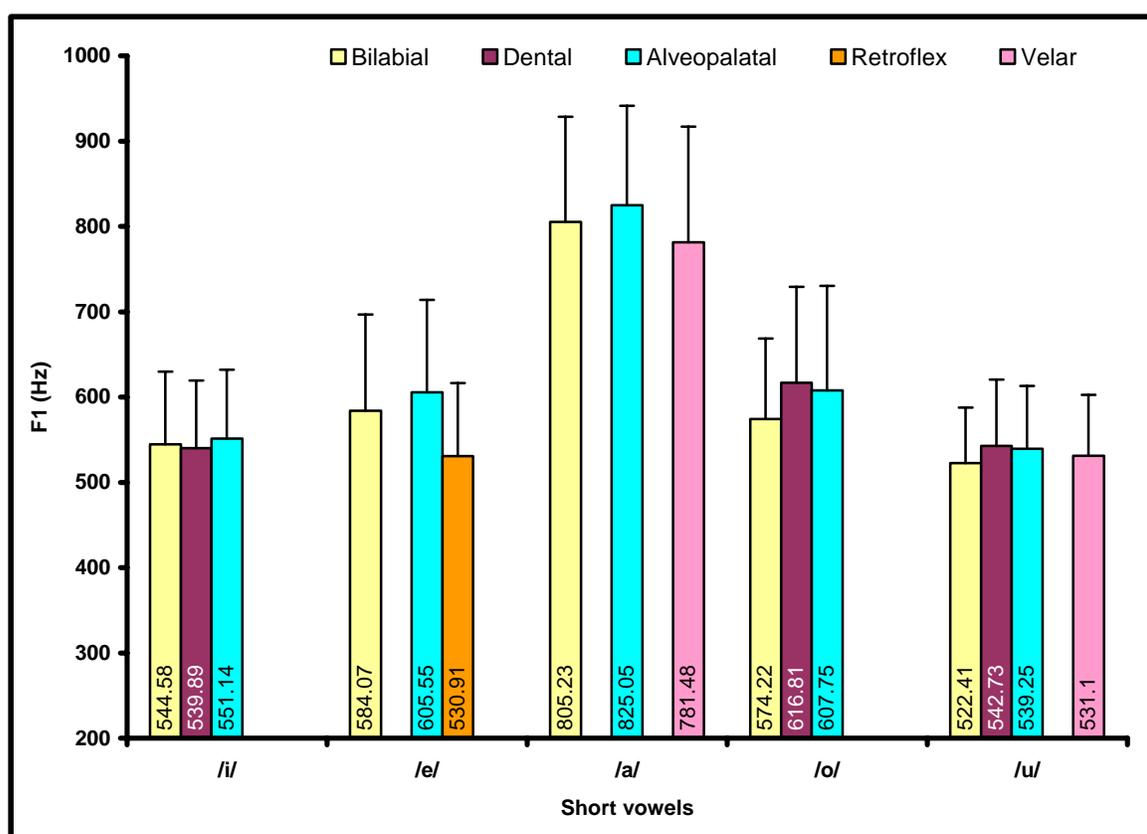


Figure 4.2.2.6a: Mean F1 (Hz) and 1 SD bars of short vowels preceded by different place of articulation consonants.

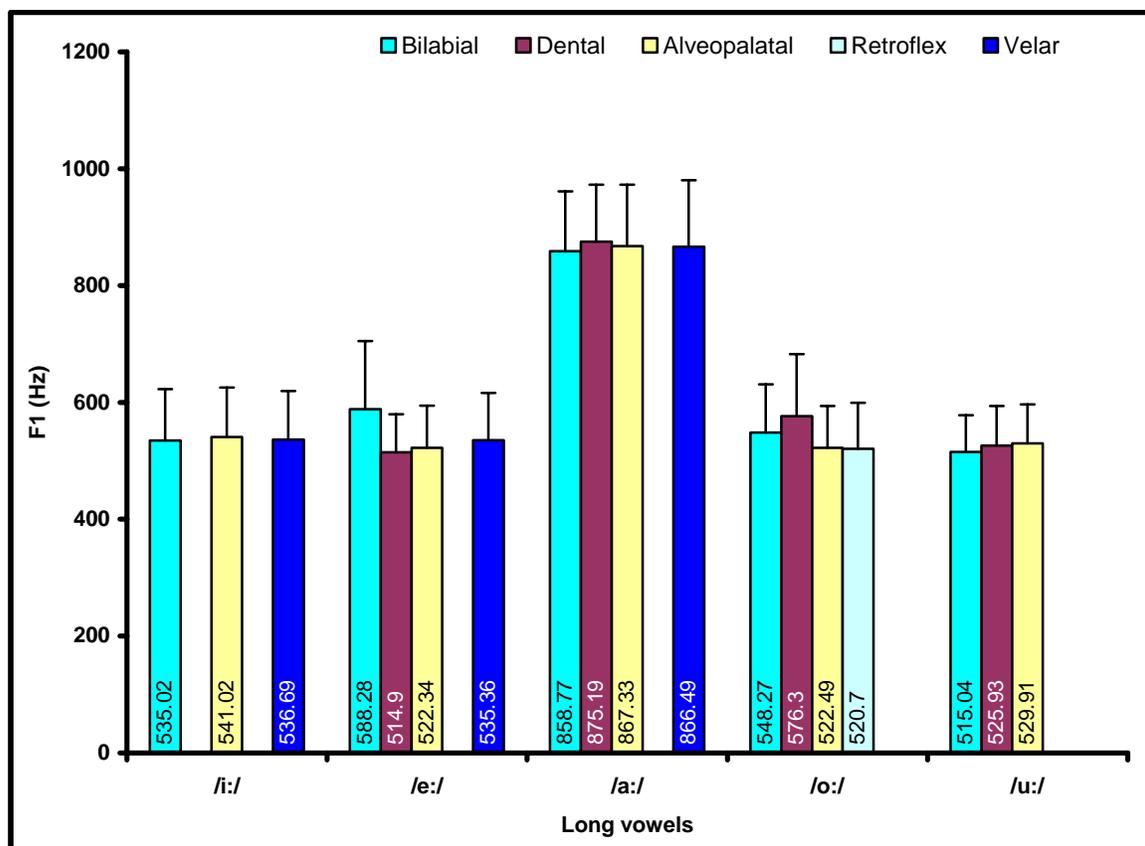


Figure 4.2.2.6b: Mean F1 (Hz) and 1 SD bars of long vowels preceded by different place of articulation consonants

Among the short vowels, mid and low vowels (/e/, /a/ and /u/) had higher mean F1 when preceded by voiced consonants, while high vowels (/i/ and /u/) had higher mean F1 when preceded by voiceless consonants. The reverse was observed in long vowels, i.e., mid and low vowels (/e:/, /a:/ and /u:/) had higher mean F1 when preceded by voiceless consonants while for high vowels (/i:/ and /u:/), it was when preceded by voiced consonants. The mean F1 and 1 SD bars of all vowels across voicing feature of the preceding consonant are depicted in Figure 4.2.2.7. The means and SD of all the vowels across the different voiced and voiceless consonants are given in Appendix VIII c (Table 4.2.2.8).

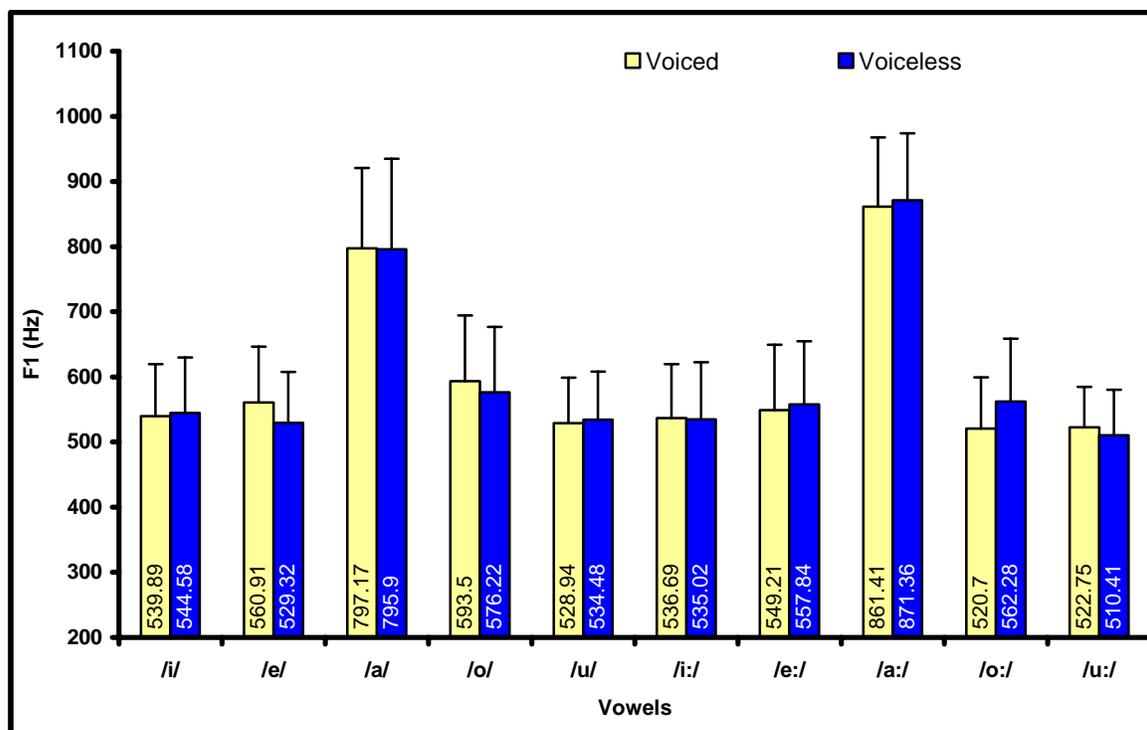


Figure 4.2.2.7: Mean F1 (Hz) and 1 SD bars of vowels preceded by different voicing feature of consonants.

The following questions were attempted to further understand the variations in the F1 observed in the analysis. (1) Do age, gender and region have any association with F1, if so what kind of association? (2) Which of the vowels studied have significant difference in F1 among the age, gender and region groups? Random intercept model 3 was used (as described in the method) to understand if there was any association between F1 and age, gender and region groups. The results are given in Table 4.2.2.a. It is observed that, there is a significant association between F1 and age, gender and region. Further, age and gender have negative association with F1.

Further to study which of the vowels differed significantly among the age and region groups, Tukey HSD was done and the results suggested that mean F1 of all vowels showed statistically significant difference between children, adolescents and adults (Table 4.2.2.b) except for back vowels /o/ and /u:/ between children and adolescents. Within the region groups, all vowels had statistically no significant difference in F1 between Coastal, Rayalaseema and Telengana speakers, except for mid vowel /a/ and /a:/ between Coastal – Telengana, Rayalaseema – Telengana and Coastal – Telengana speakers respectively

(Table 4.2.2.c). Student's *t*-test was done to study which of the vowels significantly differed with the gender groups. The results are given in Table 4.2.2.d.

Table 4.2.2.a: Statistical analysis using random intercept model for F1

N=4320				
Covariates	Estimate	Std. Error	Wald ratio	P value*
Constant (β_{0ij})	775.26	22.74	34.09	< 0.01
Age (β_{1ijk})	-6.65	0.19	-35	< 0.01
Gender (β_{2ijk})	-45.11	2.5	-18.04	< 0.01
Region (β_{3ijk})	8.13	1.53	5.31	< 0.01
Variance components				
Random Error:	6080.89			
Consonant Level:	1247.05			
Individual level:	16021.15			
Total variation:	23349.09			
$-2*\log likelihood(IGLS) = 50286.04$				
<i>*significant at 0.05 level</i>				

Model: First formant frequency (F1) = 775.26 – 6.65age – 45.11gender + 8.13region.

Table 4.2.2.b: Post hoc results for each vowel between age groups for F1

N=4320

Vowel	(I) Age Group	(J) Age Group	Mean Difference (I-J)	Sig.
/i/	Children	Adolescent	40.16(*)	0.004
	Children	Adult	84.05(*)	< 0.01
	Adolescent	Adult	43.89(*)	0.001
/e/	Children	Adolescent	49.86(*)	< 0.01
	Children	Adult	104.94(*)	< 0.01
	Adolescent	Adult	55.08(*)	< 0.01
/a/	Children	Adolescent	74.32(*)	< 0.01
	Children	Adult	155.09(*)	< 0.01
	Adolescent	Adult	80.77(*)	< 0.01
/o/	Children	Adolescent	27.20	0.085
	Children	Adult	95.07(*)	< 0.01
	Adolescent	Adult	67.87(*)	< 0.01
/u/	Children	Adolescent	34.30(*)	< 0.01
	Children	Adult	76.74(*)	< 0.01
	Adolescent	Adult	42.45(*)	< 0.01
/i:/	Children	Adolescent	30.30	0.019
	Children	Adult	83.38(*)	< 0.01
	Adolescent	Adult	53.08(*)	< 0.01
/e:/	Children	Adolescent	44.29(*)	< 0.01
	Children	Adult	112.75(*)	< 0.01
	Adolescent	Adult	68.46(*)	< 0.01
/a:/	Children	Adolescent	48.53(*)	< 0.01
	Children	Adult	127.87(*)	< 0.01
	Adolescent	Adult	79.34(*)	< 0.01
/o:/	Children	Adolescent	28.92	0.020
	Children	Adult	114.46(*)	< 0.01
	Adolescent	Adult	85.55(*)	< 0.01
/u:/	Children	Adolescent	18.48	0.095
	Children	Adult	56.26(*)	< 0.01
	Adolescent	Adult	37.77(*)	< 0.01

*significant at 0.05 level

Table 4.2.2.c: Post hoc results for each vowel between region groups for F1

N=4320

Vowel	(I) Age Group	(J) Age Group	Mean Difference (I-J)	Sig.
/i/	Coastal	Rayalaseema	-21.85	0.244
	Coastal	Telengana	-21.33	0.263
	Rayalaseema	Telengana	0.52	0.999
/e/	Coastal	Rayalaseema	-3.63	0.951
	Coastal	Telengana	-1.60	0.990
	Rayalaseema	Telengana	2.03	0.984
/a/	Coastal	Rayalaseema	2.54	0.978
	Coastal	Telengana	-37.01(*)	0.010
	Rayalaseema	Telengana	-39.55(*)	0.005
/o/	Coastal	Rayalaseema	-7.66	0.841
	Coastal	Telengana	-21.63	0.257
	Rayalaseema	Telengana	-13.97	0.565
/u/	Coastal	Rayalaseema	-16.64	0.047
	Coastal	Telengana	-11.67	0.221
	Rayalaseema	Telengana	4.97	0.758
/i:/	Coastal	Rayalaseema	-13.69	0.496
	Coastal	Telengana	-25.93	0.084
	Rayalaseema	Telengana	-12.24	0.571
/e:/	Coastal	Rayalaseema	3.25	0.956
	Coastal	Telengana	-2.01	0.983
	Rayalaseema	Telengana	-5.26	0.887
/a:/	Coastal	Rayalaseema	-14.81	0.265
	Coastal	Telengana	-29.15(*)	0.006
	Rayalaseema	Telengana	-14.33	0.287
/o:/	Coastal	Rayalaseema	-2.50	0.979
	Coastal	Telengana	-18.88	0.303
	Rayalaseema	Telengana	-16.38	0.405
/u:/	Coastal	Rayalaseema	-13.18	0.342
	Coastal	Telengana	-23.28	0.037
	Rayalaseema	Telengana	-10.11	0.527

*significant at 0.05 level

Table 4.2.2.d: Student's *t*-test results for all vowels between two gender groups for F1

Vowel	Mean Difference	df	t
/i/	70.99	204	7.06*
/e/	36.89	500	3.81*
/a/	84.64	523	8.66*
/o/	44.59	349	4.07*
/u/	57.47	617	10.88*
/i:/	72.51	286	8.07*
/e:/	9.37	386	1.02
/a:/	66.35	638	8.96*
/o:/	6.56	285	0.63
/u:/	42.14	264	5.77*

*significant at 0.05 level

From Table 4.2.2.d, it's observed that, all vowels had statistically significant differences in F1 between females and males except for /e:/ and /o:/.

From the results, it is inferred that, there is a significant association between age, gender and region for F1. As age increased, there was a significant decrease in F1 and also significant variations among the regions and gender groups. From the statistical analysis, it could also be inferred that, individual level variations contribute much to F1 as compared to consonant contexts.

The current study reveals that F1 varied depending upon the elevation of the tongue, the volume and constriction of the vocal tract. Higher the elevation of the tongue in the vocal tract, the lower the first formant. Similar results have been reported in the literature (Fant, 1960; Joos, 1948; Whalen et.al., 2004). Front vowels having lower F1 as compared to central vowels support the rules given by Pickett (1996); however, it does not support the case of back vowels having lower F1. It appears that, elevation of the tongue plays a major role in the F1 variations as observed in the current study. Tongue position appears to be higher for the production of vowel /i/ as compared to vowel /u/; however, almost same tongue height is maintained for the production of mid vowels /e/ and /o/ with

variation in place of constriction. The findings did not differ much between the production of short and long vowels. The results of the current study support the findings of Nagamma Reddy (1999) that short vowels in Telugu have higher F1 than long vowels, excepting vowel /a/ and the findings of Jenson & Menon (1972) in Malayalam. The observed variations between the short and long vowels could be due to lesser time taken by the tongue to reach the appropriate position before the production of the next consonant for the production of short vowels.

The findings that as age progresses, F1 decreases has been reported in English (Peterson & Barney, 1952; Eguchi & Hirish, 1969; Kent, 1976), Hebrew (Most et.al., 2000), New Zealand English (Watson, Palethorpe & Harrington, 2004) and Indian languages (Sreedevi, 2000; Ampathu, 1998). It may be inferred that F1 also varied on the length and resonance of the vocal tract, which changes over the age. (Monsen & Engerbretson, 1983; Watson et.al., 2004). Most et.al., (2000) recommended cultural, language specific analysis for formants as differences could exist. F1 variations were observed from children to adult, for most of the vowels; however, this was observed in Hebrew only till adolescence. (Most et.al., 2000).

It is observed from the analysis of the current study that regional variations were observed across the speakers for F1. Most et.al., (2000) had commented that regional, cultural variations for formants can exist. The variations in F1 can further be attributed to the anatomical and dialectal differences in the different regions as stated in the literature (Venkateswara Sastry, 1990-91). Further research to understand these differences is warranted.

The variability of F1 in different consonant contexts has been studied and reported in English (Black, 1939; Stevens & House, 1963; Hillenbrand et.al., 1995), and Telugu (Nagamma Reddy, 1999). Similar to English (Stevens & House, 1963), F1 of vowels varied when preceded by different place of articulation, manner of articulation and voicing characteristics in Telugu also.

4.2.2.2 Summary of F1

From the current study, it can be concluded that, in Telugu:

- Low mid vowels had the highest F1 and back high vowels had the lowest F1.
- First formant increased with increase in phonetic length of the vowel except for vowel /a/.
- Central vowels had higher F1 followed by front and back.
- Children had higher F1 followed by adolescents and adults.
- The low mid vowels had higher F1 and high back vowels, lower F1 values across age groups.
- Females had higher F1 values when compared to males for all vowels.
- Low mid vowels had higher F1 while back high vowels had lower F1 in both genders.
- Telengana speakers had higher F1 followed by Rayalaseema and Coastal speakers for vowels /o/, /i:/, /a:/, /o:/, and /u:/.
- Short vowels had higher F1 when preceded by voiced consonants, except /i/ and /u/.
- Long vowels had higher F1 when preceded by voiceless consonants, except /i:/ and /u:/.
- Vowels following lateral consonants had higher F1 followed by semivowels, fricatives, nasals, stops, affricatives and trills.
- Vowels when preceded by velar consonants had higher F1 followed by alveopalatal, bilabial, dental and retroflex consonants.
- Central vowels had higher F1 compared to back vowels when preceded by stop, nasal and fricative consonants.
- Central vowels when preceded by nasal consonants had higher F1 followed by stop and fricative consonants.
- Back vowels had higher F1 when preceded by fricative consonants followed by stop and nasal consonants.
- Central and back vowels had higher F1 values when preceded by dental consonants followed by bilabial and velar consonants.

4.2.3.1 Second Formant Frequency (F2)

Current study revealed that long vowels had higher mean F2 as compared to short vowels. High front vowel /i/ and /i:/ had the highest mean F2 and back high vowel /u/ and /u:/, the lowest. The mean F2 decreased as the tongue constriction varied from front to back. Front vowels had higher F2 followed by central and back. The mean F2 and 1 SD bars of all vowels are depicted in Figure 4.2.3.1. The means, SD and 95% confidence interval for mean of all the vowels and for central, front and back vowels across the age groups are given in Appendix VIII d (Tables 4.2.3.1 and 4.2.3.2 respectively).

It was observed that, as age increases, F2 decreased. Children had higher F2 followed by adolescents and adults. Front high vowel /i/ and /i:/ have higher mean F2 values and high back vowel /u/ and /u:/, lower mean F2 values across the age groups. Vowels /e/, /a/, /o/, /u/, /a:/, /o:/, /u:/ had reduced mean F2 from children to adults. Vowels /i/, /i:/ and /e:/ in children had lower mean F2 values as compared to adolescents. On comparing the data between the short and long vowels it was found that, for vowels /e/, /o/ and /u/, the mean F2 values increased with increase in phonetic length in children and adolescents groups; however, the mean F2 values decreased for vowels /a/, /o/ and /u/ in adults as phonetic length increased. Only vowel /e/ had consistently increased mean F2 values as phonetic length increased in all age groups. The mean F2 and 1 SD bars of all vowels across different age groups are depicted in Figure 4.2.3.2. The means, SD and 95% confidence interval for mean of all the vowels for all three age groups are given in Appendix VIII d (Table 4.2.3.3).

Gender wise, females had higher mean F2 values when compared to males for all vowels. The high front vowel /i/ and /i:/ had higher mean F2 while back high vowel /u/ and /u:/ had lower F2 in both the genders. On scrutiny of the data between the short and long vowels, it was observed that, for vowels /i/, /a/ and /o/, F2 decreased with increase in phonetic length in females, while in males, it was observed for only vowels /i/ and /e/. Only front vowels /i/ & /i:/ and back vowels /u/ & /u:/ followed a consistent pattern with increase in phonetic length in both genders. The mean F2 and 1 SD bars of all vowels across gender groups are depicted in Figure 4.2.3.3. The means, SD and 95% confidence

interval for mean of all the vowels for two gender groups are given in Appendix VIII d (Table 4.2.3.4).

Regional variations of second formant were observed more in short vowels than long vowels. From the data, it was observed that, for vowels /i/, /e/ and /a/, Rayalaseema speakers had higher mean F2 while for vowel /o/ and /u/, Telengana speakers had higher mean F2. Telengana speakers had consistently higher mean F2 for long vowels /e:/, /a:/, /o:/ and /u:/ except for /i:/, Coastal speakers had higher mean F2. Across the regions, it was observed that, high front vowel /i/ had higher mean F2 and back high vowel had lower mean F2 in both short and long vowels. Further, only long vowels /e:/ and /u:/ had consistently higher mean F2 values as compared to their counterparts across all regions. The mean F2 and 1 SD bars of all vowels across different regional groups are depicted in Figure 4.2.3.4. The means, SD and 95% confidence interval for mean of all the vowels for all three region groups are given in Appendix VIII d (Table 4.2.3.5).

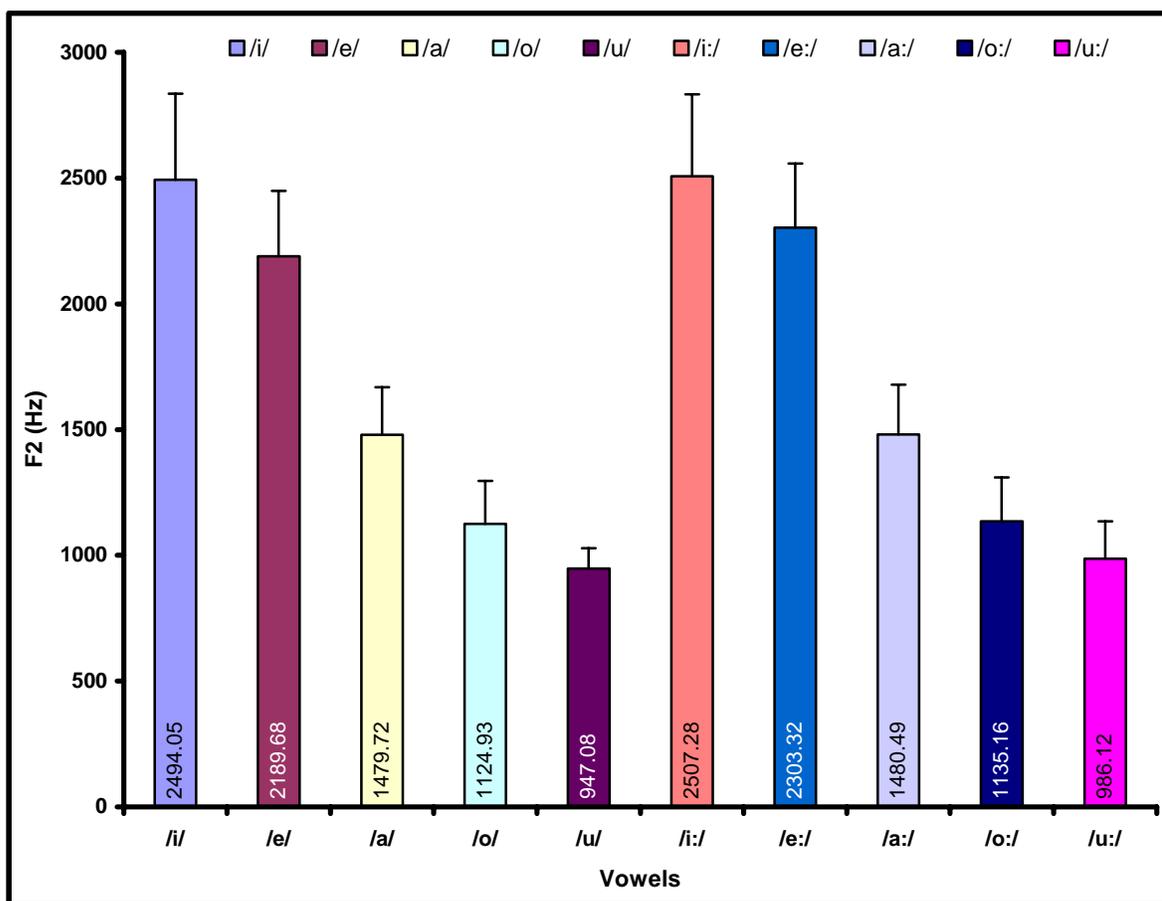


Figure 4.2.3.1: Mean F2 (Hz) and 1 SD bars of all vowels

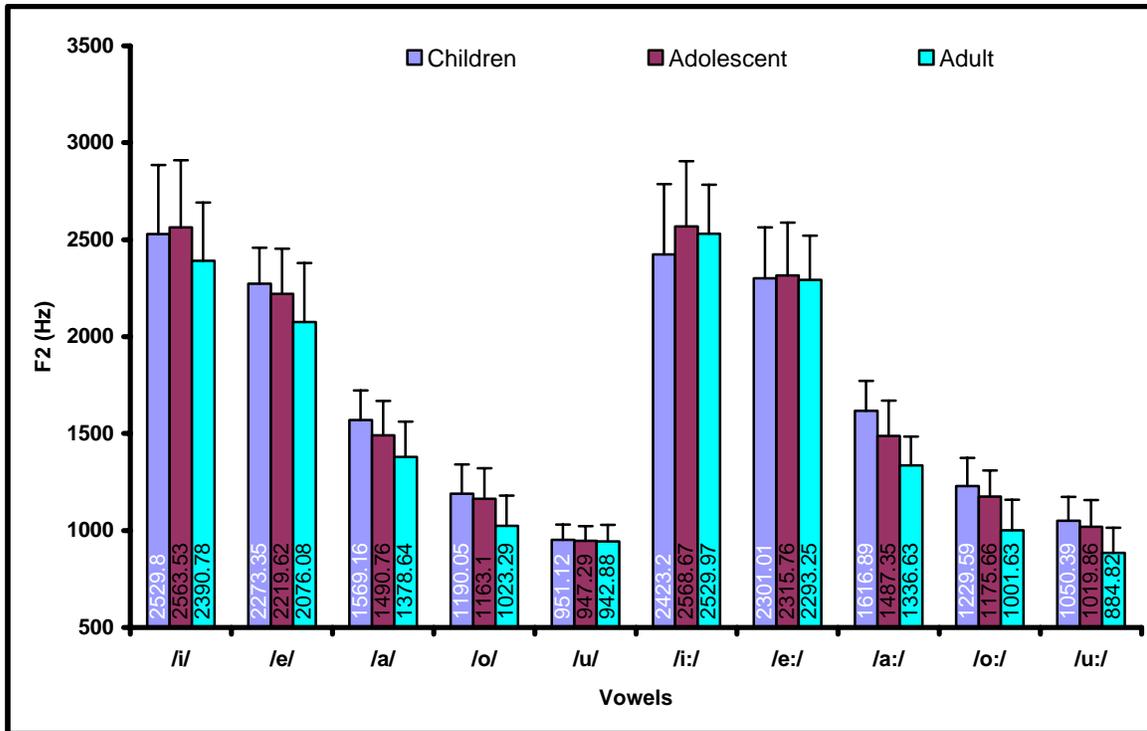


Figure 4.2.3.2: Mean F2 (Hz) and 1 SD bars across age groups

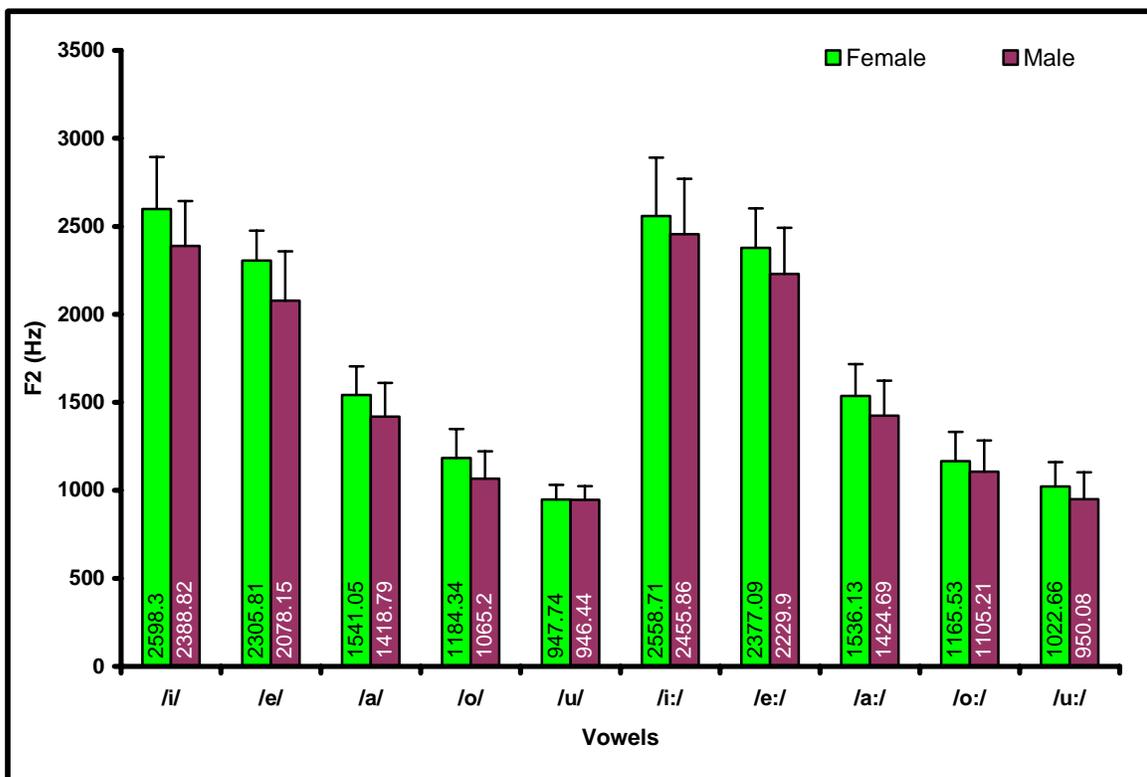


Figure 4.2.3.3: Mean F2 (Hz) and 1 SD bars across gender groups

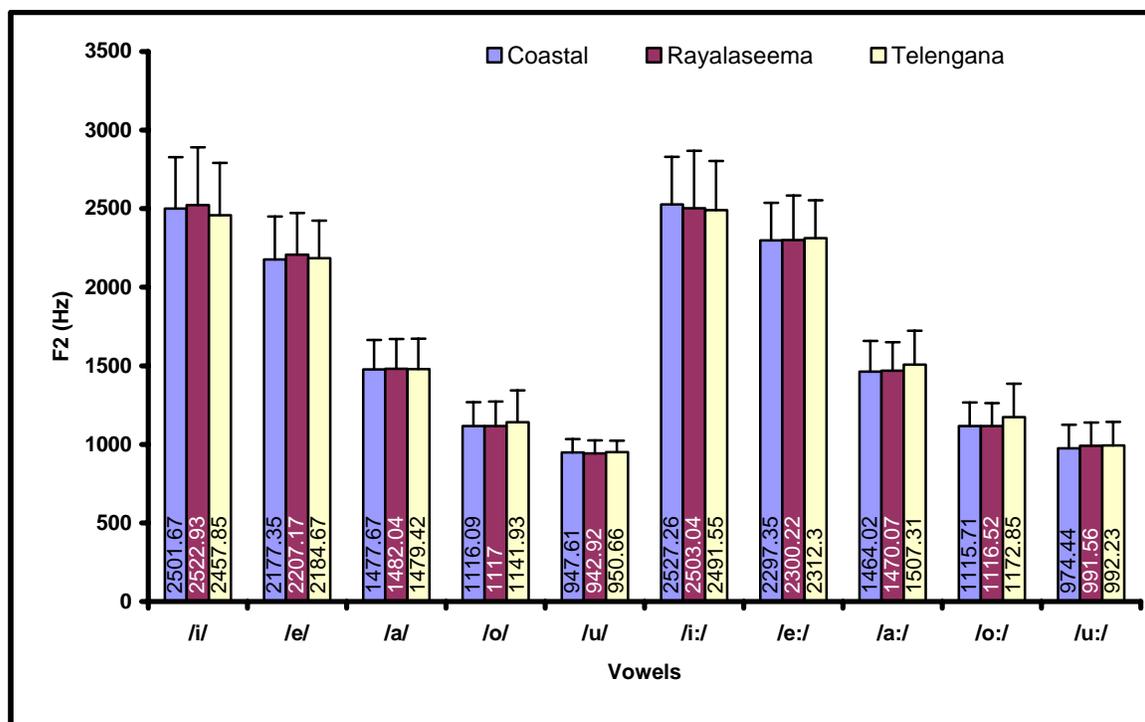


Figure 4.2.3.4: Mean F2 (Hz) and 1 SD bars across region groups

Manner of articulation of the preceding consonant had an effect on F2 of the following vowel in Telugu. In the current study, it was observed that front short vowels /i/ and /e/ had higher mean F2 when preceded by nasal consonants as compared to stop consonants, while the opposite was noticed for their counterpart (long vowels). All long vowels had higher mean F2 values when preceded by affricates as compared to stops except for vowel /u:/. On further inspection of the data, it was observed that, central vowels when preceded by stop consonants had higher mean F2 followed by fricative and nasal consonants; however, back vowels had higher the F2 when preceded by nasal consonants followed by stop and fricative consonants. The mean F2 and 1 SD bars of short and long vowels across different manner of articulation of the preceding consonant are depicted in Figures 4.2.3.5a and 4.2.3.5b respectively. The means and SD of all the vowels for different preceding manner of articulation of the consonants are given in Appendix VIII d (Table 4.2.3.6).

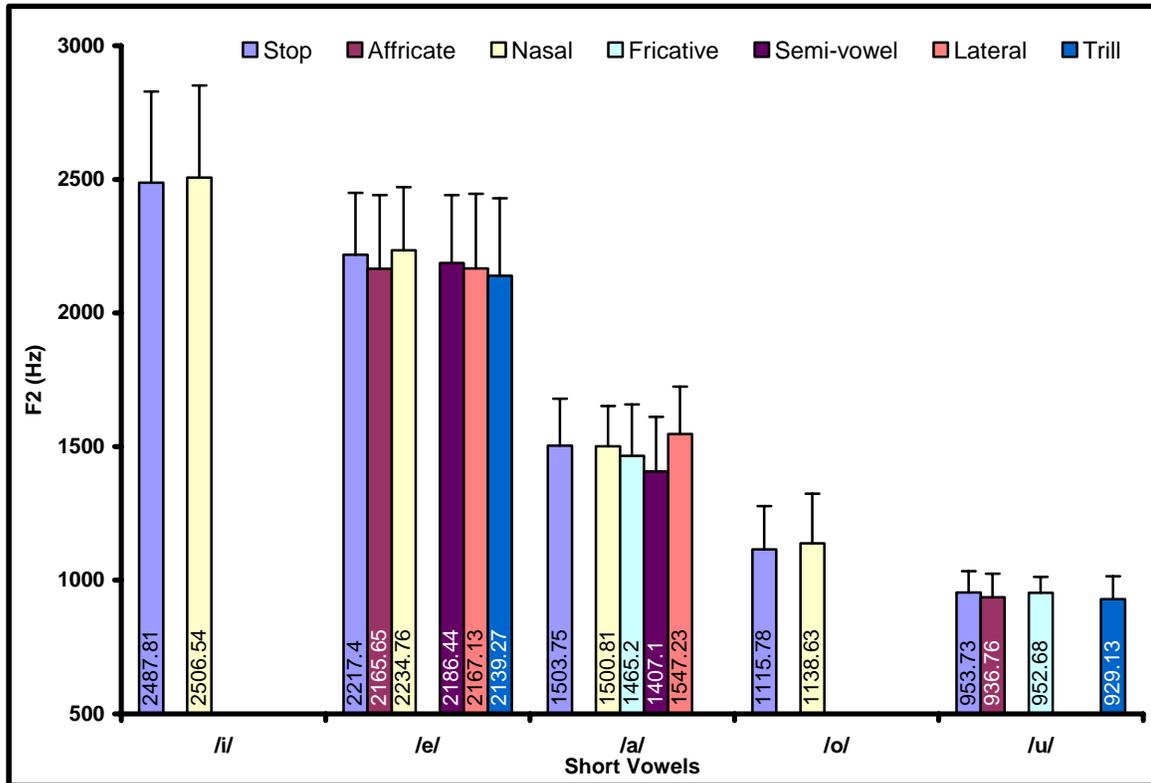


Figure 4.2.3.5a: Mean F2 (Hz) and 1 SD bars of short vowels preceded by different manner of articulation consonants

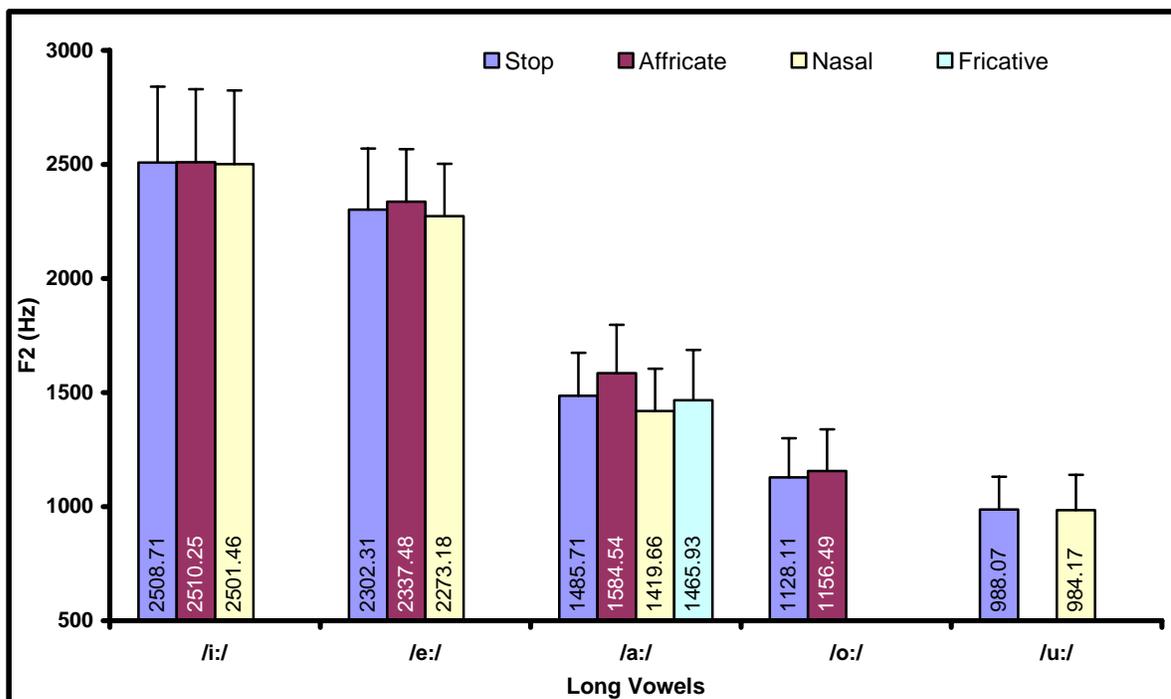


Figure 4.2.3.5b: Mean F2 (Hz) and 1 SD bars of long vowels preceded by different manner of articulation consonants.

Place of articulation of the preceding consonant also had an influence on the F2 of the following vowel in Telugu. Vowels /i/, /e/ /u/ and /i:/ had higher mean F2 when preceded by bilabials as compared to alveopalatals. Vowels /o/, /u/, /e:/, /a:/. /o:/ and /u:/ had higher mean F2 when preceded by dentals as compared to bilabials. Central vowels had higher mean F2 when preceded by velar consonants followed by dental and bilabial consonants, but back vowels had higher mean F2 when preceded by dental consonants followed by bilabial and velar consonants. Short and long vowels /i/ had higher mean F2 when preceded by bilabials as compared to alveopalatals. Short and long mid vowels /a/ and /a:/ had higher mean F2 when preceded by velars as compared to bilabials. Short and long back vowels /o/, /o:/. /u/ and /u:/ had higher mean F2 when preceded by dentals as compared to bilabials. The mean F2 and 1 SD bars of short and long vowels across different place of articulation of the preceding consonant are depicted in Figures 4.2.3.6a and 4.2.3.6b. The means and SD of all the vowels for different preceding place of articulation consonants are given in Appendix VIII d (Table 4.2.3.7).

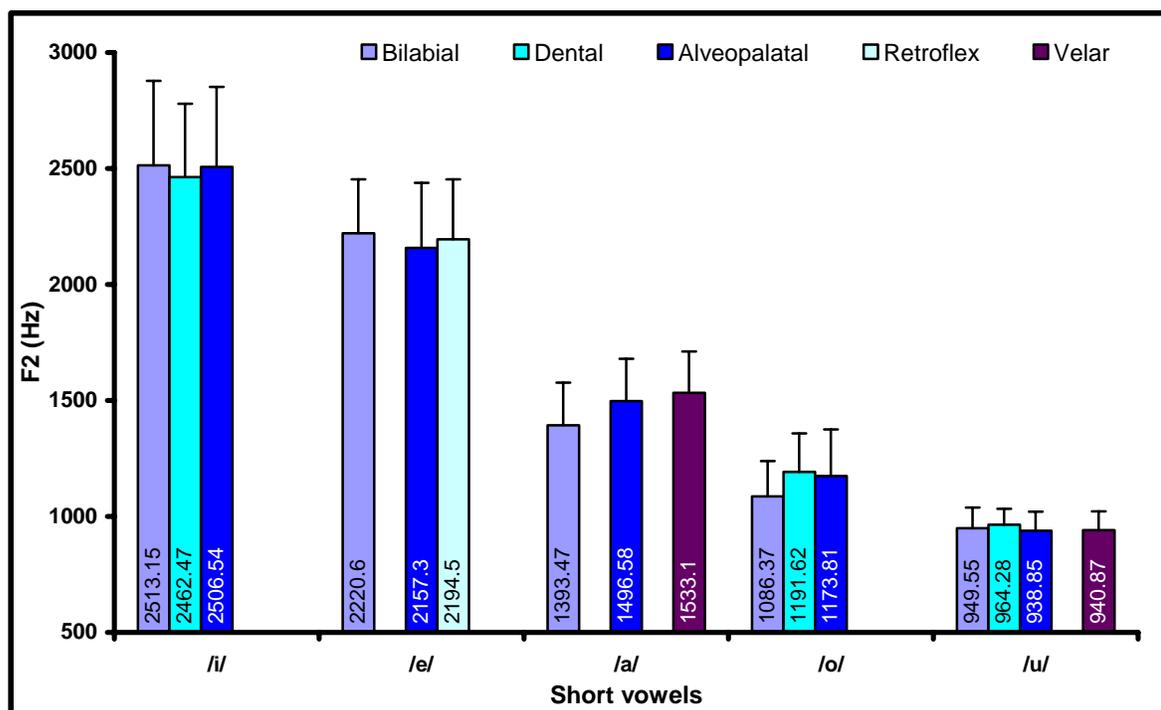


Figure 4.2.3.6a: Mean F2 (Hz) and 1 SD bars of short vowels preceded by different place of articulation consonants

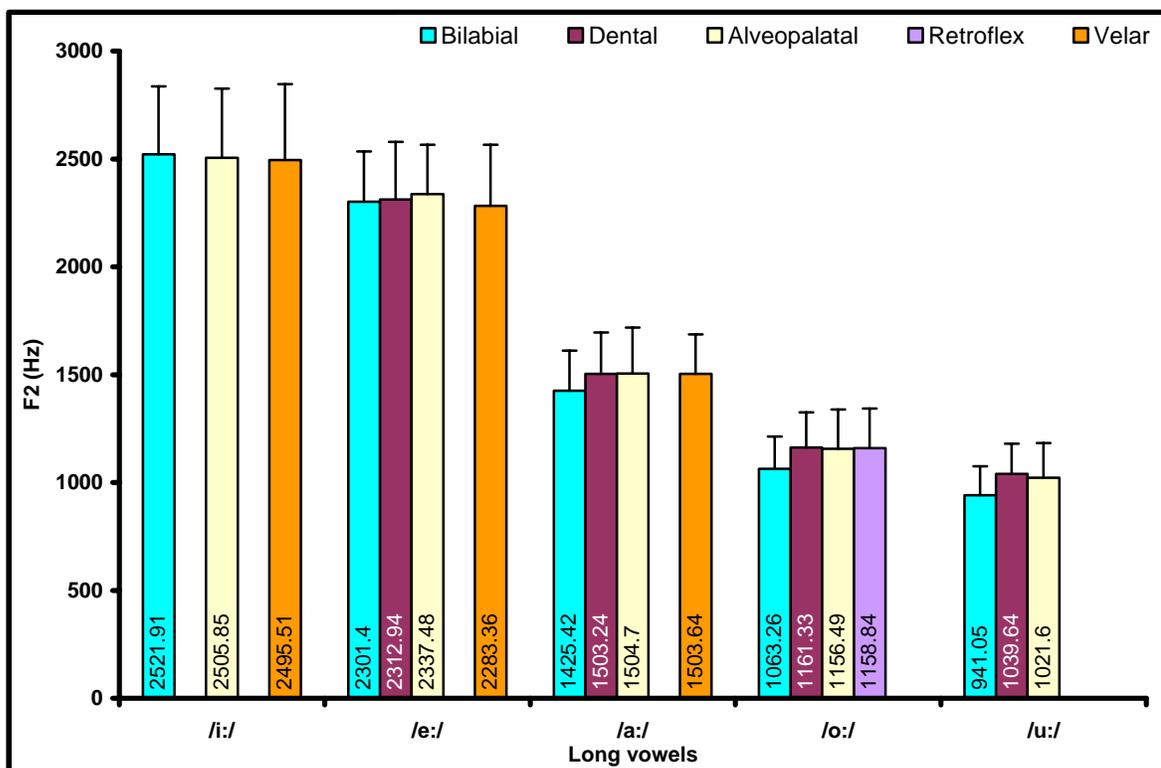


Figure 4.2.3.6b: Mean F2 (Hz) and 1 SD bars of long vowels preceded by different place of articulation consonants

Vowels when preceded by voiceless consonants had higher mean F2 than when preceded by voiced consonants except for /e/ and /a/ among short vowels and /o:/ and /u:/ among long vowels. The mean F2 and 1 SD bars of all vowels across the voicing feature of the preceding consonant are depicted in Figure 4.2.3.7. The means and SD of all the vowels for different voiced and voiceless consonants are given in Appendix VIII d (Table 4.2.3.8).

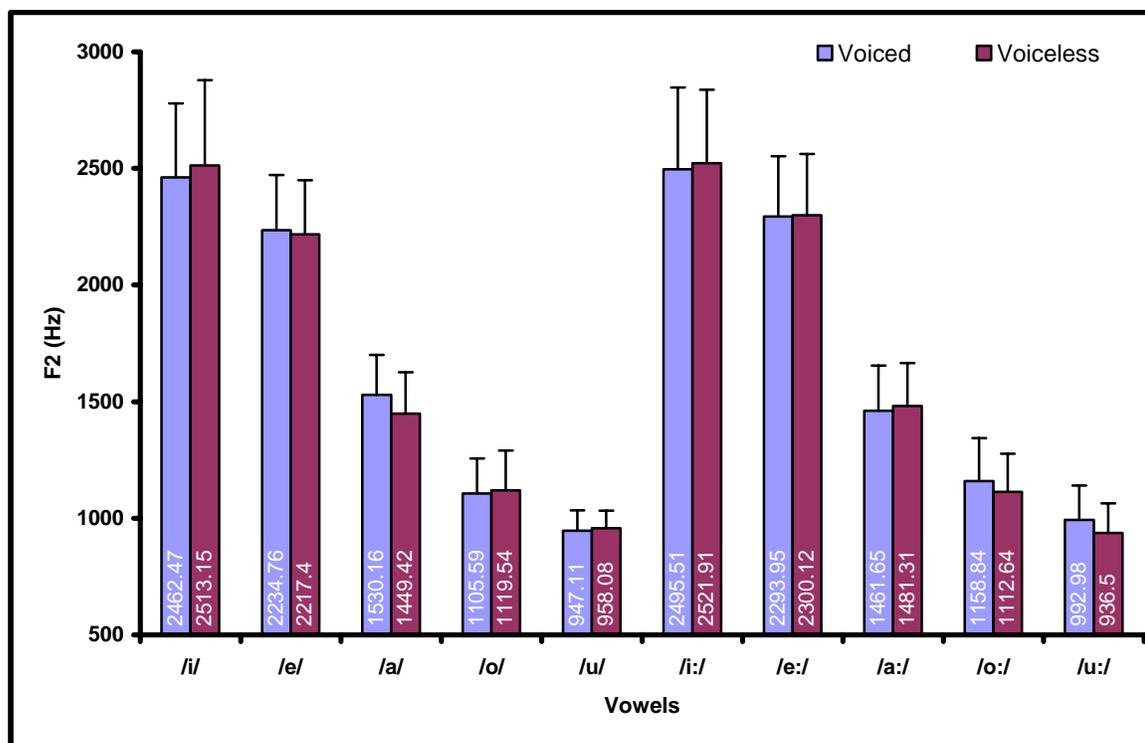


Figure 4.2.3.7: Mean F2 (Hz) of vowels preceded by different voicing feature of consonants

Do age, gender and region have any association with F2 and if so what kind of association and which of the vowels studied have significant difference in F2 among the age, gender and region groups were the questions posed to further understand the variations in the F2 observed in the analysis. Random intercept model 3 was used (as described in the method) to understand if there was any association between F2 and age, gender and region groups. The results are given in Table 4.2.3.a.

Table 4.2.3.a: Statistical analysis using random intercept model for F2

N=4320				
Covariates	Estimate	Std. Error	Wald ratio	P value*
Constant (β_{0ij})	1856.94	99.89	18.59	< 0.01
Age (β_{1ijk})	-8.84	0.47	-18.81	< 0.01
Gender (β_{2ijk})	-102.66	5.97	-17.19	< 0.01
Region (β_{3ijk})	3.79	3.64	1.04	0.15
Variance components				
Random Error:	34461.97			
Consonant Level:	7129.79			
Individual level:	337364.30			
Total variation:	378956.06			
$-2*\log likelihood(IGLS) = 57632.38$				
<i>*significant at 0.05 level</i>				

Model: Second formant frequency (F2) = 1856.94 – 8.84age – 102.66gender + 3.79region

From Table 4.2.3.a, it is observed that, there is a significant association between F2 and age, gender and region. Further, age and gender have negative association with F2.

Further to study which of the vowels differed significantly among the age and region groups, Tukey HSD was done and the results suggested that F2 of all vowels showed statistically significant difference between children, adolescents and adults (Table 4.2.3.b) except for front and back vowels /i/, /e/, /o/ and /u:/ between children and adolescents; /u/ and /e:/ in all age groups and /i:/ in children – adults and adolescents – adult groups. Within the region groups, all the vowels had statistically no significant difference in F2 between Coastal, Rayalaseema and Telengana speakers, except for mid vowel /a:/ between Coastal – Telengana (Table 4.2.3.c). Student's *t*-test was done to study which of the vowels significantly differed with the gender groups. The results are given in Table 4.2.3.d.

Table 4.2.3.b: Post hoc results for each vowel between age groups for F2

N=4320				
Vowel	(I) Age Group	(J) Age Group	Mean Difference (I-J)	Sig.
/i/	Children	Adolescent	-33.72	0.822
	Children	Adult	139.02(*)	0.038
	Adolescent	Adult	172.74(*)	0.007
/e/	Children	Adolescent	53.73	0.114
	Children	Adult	197.27(*)	< 0.01
	Adolescent	Adult	143.54(*)	< 0.01
/a/	Children	Adolescent	78.40(*)	< 0.01
	Children	Adult	190.51(*)	< 0.01
	Adolescent	Adult	112.11(*)	< 0.01
/o/	Children	Adolescent	26.95	0.377
	Children	Adult	166.76(*)	< 0.01
	Adolescent	Adult	139.81(*)	< 0.01
/u/	Children	Adolescent	3.83	0.876
	Children	Adult	8.24	0.544
	Adolescent	Adult	4.41	0.839
/i:/	Children	Adolescent	-145.47(*)	0.005
	Children	Adult	-106.76	0.057
	Adolescent	Adult	38.70	0.682
/e:/	Children	Adolescent	-14.76	0.877
	Children	Adult	7.75	0.964
	Adolescent	Adult	22.51	0.736
/a:/	Children	Adolescent	129.53(*)	< 0.01
	Children	Adult	280.26(*)	< 0.01
	Adolescent	Adult	150.73(*)	< 0.01
/o:/	Children	Adolescent	53.93(*)	0.030
	Children	Adult	227.96(*)	< 0.01
	Adolescent	Adult	174.03(*)	< 0.01
/u:/	Children	Adolescent	34.53	0.165
	Children	Adult	169.56(*)	< 0.01
	Adolescent	Adult	135.04(*)	< 0.01

*significant at 0.05 level

Table 4.2.3.c: Post hoc results for each vowel between region groups for F2

N=4320

Vowel	(I) Age Group	(J) Age Group	Mean Difference (I-J)	Sig.
/i/	Coastal	Rayalaseema	-21.26	0.928
	Coastal	Telengana	43.82	0.725
	Rayalaseema	Telengana	65.07	0.498
/e/	Coastal	Rayalaseema	-65.07	0.498
	Coastal	Telengana	-29.83	0.546
	Rayalaseema	Telengana	29.83	0.546
/a/	Coastal	Rayalaseema	-4.37	0.972
	Coastal	Telengana	-1.75	0.995
	Rayalaseema	Telengana	2.62	0.990
/o/	Coastal	Rayalaseema	-.91	0.999
	Coastal	Telengana	-25.84	0.478
	Rayalaseema	Telengana	-24.93	0.502
/u/	Coastal	Rayalaseema	4.69	0.821
	Coastal	Telengana	-3.05	0.919
	Rayalaseema	Telengana	-7.74	0.583
/i:/	Coastal	Rayalaseema	24.22	0.865
	Coastal	Telengana	35.72	0.730
	Rayalaseema	Telengana	11.50	0.968
/e:/	Coastal	Rayalaseema	-2.88	0.995
	Coastal	Telengana	-14.96	0.874
	Rayalaseema	Telengana	-12.08	0.915
/a:/	Coastal	Rayalaseema	-6.05	0.940
	Coastal	Telengana	-43.29(*)	0.044
	Rayalaseema	Telengana	-37.24	0.097
/o:/	Coastal	Rayalaseema	-.81	0.999
	Coastal	Telengana	-57.14	0.060
	Rayalaseema	Telengana	-56.33	0.065
/u:/	Coastal	Rayalaseema	-17.12	0.712
	Coastal	Telengana	-17.79	0.691
	Rayalaseema	Telengana	-.67	0.999

*significant at 0.05 level

Table 4.2.3.d: Student's *t*-test results for all vowels between two gender groups for F2

Vowel	Mean Difference	df	t
/i/	209.48	203.737	4.679*
/e/	233.66	407.832	11.269*
/a/	122.88	557.402	8.245*
/o/	119.14	355	6.991*
/u/	1.30	636	0.204
/i:/	102.85	285.293	2.705*
/e:/	147.19	427	6.239*
/a:/	111.45	709.980	7.862*
/o:/	60.32	284	2.961*
/u:/	72.58	282	4.220*

*significant at 0.05 level

From the Table 4.2.3.d, it is observed that all the vowels had statistically significant difference in F2 between females and males except for back high vowel /u/.

From the results, it is inferred that there is a significant association between age, gender and region with F2. As age increased, there was a significant decrease in F2 and also significant variation among the region and gender groups. However, individual vowel variations within the region groups were not significant; they tend to be significant with influence of consonant and individual level variations. It is also inferred that, individual variations contribute higher than consonant contexts for the F2 of the vowels in Telugu.

From the results of the current study it is observed that, F2 varied depending upon the transition of the tongue in the vocal tract. The current findings support the rules given by Pickett (1996) that, the frequency of F2 is lowered by back tongue constriction and F2 is raised by a front tongue constriction. Similar results are noted in the literature *viz.*, Joos (1948), Peterson & Barney (1952), Fant (1960), Hasegawa-Johnson, Pizza, Alwan, Cha & Hake, (2003), Whalen et.al., (2004), Riyamol (2007), Nagamma Reddy (1999). The results of the current study support the findings of Nagamma Reddy (1998), that long vowels have higher F2 than short vowels. It was observed that, F2 variations based on the tongue

transition, causing variations in the vocal tract length were concurrent with the findings observed in all the languages.

The findings in the current study of F2 decreasing as age progressed has been reported in English (Peterson & Barney, 1952; Eguchi & Hirish, 1969; Kent, 1976) in Hebrew (Most et.al., 2000), in New Zealand English (Watson et.al., 2004) and in Indian languages (Sreedevi, 2000; Ampathu, 1998). It may be inferred that F2 variations are consistent with age related changes in the vocal tract length and resonance (Monsen & Engerbretson, 1983; Watson et.al., 2004) and get established during adolescence (Most et.al., 2000). The results of the current study are not in consonance with the findings of Peterson and Barney (1952), especially vowel /a:/ having higher F2 than /e/. This probably could be due to the tongue position and its variations due to linguistic differences. Nagamma Reddy (1999) in her study in understanding coarticulatory effects in Telugu did comment that, F2 in vowel /a/ was reduced when followed by /i/. In the current study, most of the words where vowel /a/ was studied had /i/ as the following vowel.

Gender variations (females having higher F2 compared to males) as observed in the current study, were also reported in English (Peterson & Barney, 1952; Kent, 1976; Cox, 2004) in Hebrew (Most et.al., 2000), in Mexican Hakka Chinese (Man, 2007) in Indian languages (Sreedevi, 2000; Riyamol, 2007), suggesting it as an universal phenomenon. In the literature, the variations among the gender were attributed to the vocal tract anatomy and physiology.

From the current study, it may be inferred that, regional variations do occur across the speakers for F2, though statistically not significant. Most et.al., (2000) had commented that regional, cultural variations for formants can exist. The variations in F2 can be attributed to the anatomical (Watson et.al., 2004) and dialectal differences (Venkateswara Sastry, 1990-91) in the different regions. Although Nagamma Reddy (1999) did palatographical studies to understand the tongue movement in Telugu, regional variations were not reported. Further research to understand these differences could throw light on the

anatomical and physiological variations if any that could contribute to variations between the regions.

Influence of preceding consonant on F2 of the following vowel was observed in English (Black, 1939; Stevens & House, 1963; Hillenbrand et.al., 1995; Nagamma Reddy, 1999). As commented by Stevens & House (1963), F2 of the vowel differed considerably from one to another and the consonantal context did cause systematic shift in the vowel formant frequencies depending upon the place, manner and voicing characteristics of the consonant.

4.2.3.2 Summary of F2

From the current study, it can be concluded that, in Telugu:

- The long vowels had higher F2 compared to short vowels.
- High front vowel /i/ and /i:/ had the highest F2 and back high vowel /u/ and /u:/ the lowest F2, in all age, gender and region groups.
- Front vowels had higher F2 followed by central and back.
- F2 decreased as age increased.
- Children had higher F2 followed by adolescents and adults.
- Females had higher F2 values when as compared to males for all vowels.
- Regional variation of second formant was observed more in short vowels than for long vowels.
- Rayalaseema speakers had higher F2 for vowels /i/, /e/ and /a/ while Telengana speakers had higher F2 for vowel /o/ and /u/.
- Telengana speakers had consistently higher F2 for long vowels /e:/, /a:/, /o:/ and /u:/ except for /i:/ where speakers from Coastal region had higher F2.
- Vowels when preceded by voiced consonants had higher F2 than when followed by voiceless consonants.
- Vowels following lateral consonants had higher F2 followed by affricatives, semivowels, nasals, stops, trills and fricatives.
- Vowels when preceded by Velar consonants had higher F2 followed by retroflex, alveopalatal, bilabial and dental consonants.

- Central vowels when preceded by stop consonants had higher F2 followed by fricative and nasal consonants.
- Back vowels had higher F2 when preceded by nasal consonants followed by stop and fricative consonants.
- Central vowels had higher F2 when preceded by velar consonants followed by dental and bilabial consonants.
- Back vowels had higher F2 when preceded by dental consonants followed by bilabial and velar consonants.

4.2.4 Third Formant Frequency (F3)

Long vowels had higher mean F3 compared to short vowels. High front vowel /i/ and /i:/ had the highest mean F3 and back high vowel /u/ and /u:/, the lowest F3. Front vowels had higher mean F3 followed by central and back vowels. As the phonetic length of the vowel increased, mean F3 increased for all the vowels. The mean F3 and 1 SD bars of all vowels are depicted in Figure 4.2.4.1. The means, SD and 95% confidence interval for mean of all the vowels; and for central, front and back vowels across the age groups are given in Appendix VIII e (Tables 4.2.4.1 and 4.2.4.2 respectively).

It was observed that as age increased, F3 decreased. Children have higher F3 followed by adolescents and adults. It was noted that, the front high vowel /i/ and /i:/ have higher mean F3 values and high back vowel /u/ and /u:/, lower mean F3 values across the age groups. As the phonetic length of the vowel increased, mean F3 increased for all vowels except for /a/ and /o/ in children and /u/ in adolescents. The mean F3 and 1 SD bars of all vowels across different age groups are depicted in Figure 4.2.4.2. The means, SD and 95% confidence interval for mean of all the vowels for all the three age groups are given in Appendix VIII e (Table 4.2.4.3).

As a gender, females had higher F3 values when compared to males for all vowels. The high front vowel /i/ and /i:/ had higher mean F3 while back high vowel /u/ and /u:/, lower mean F3 in both the genders. Observation of the data based on phonetic length, indicated enhanced mean F3 values as the phonetic length increased, except for mid vowel /a/ in females. The mean F3 and 1 SD bars of all vowels across gender groups are depicted

in Figure 4.2.4.3. The means, SD and 95% confidence interval for mean of all the vowels for the two gender groups are given in Appendix VIII e (Table 4.2.4.4).

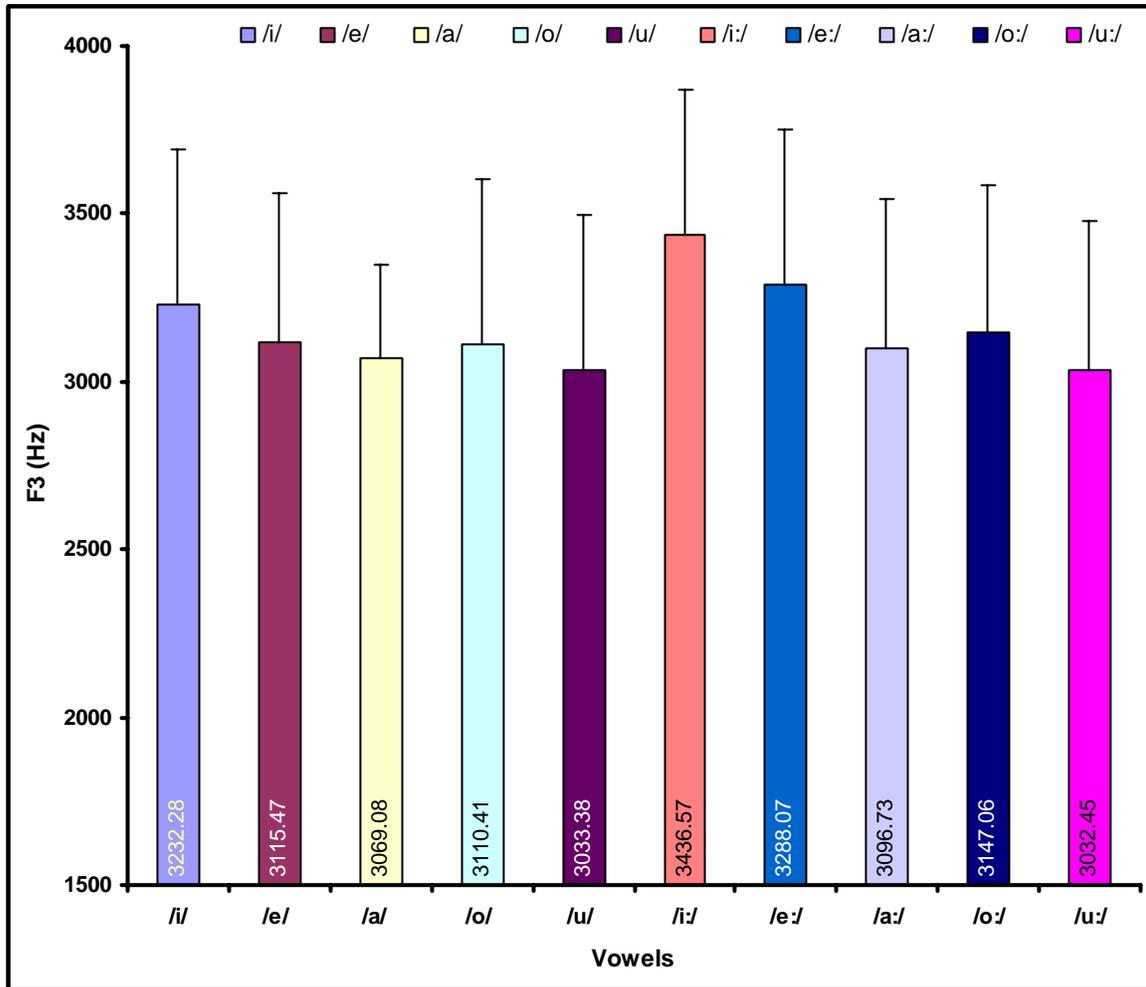


Figure 4.2.4.1: Mean F3 (Hz) and 1 SD bars of all vowels

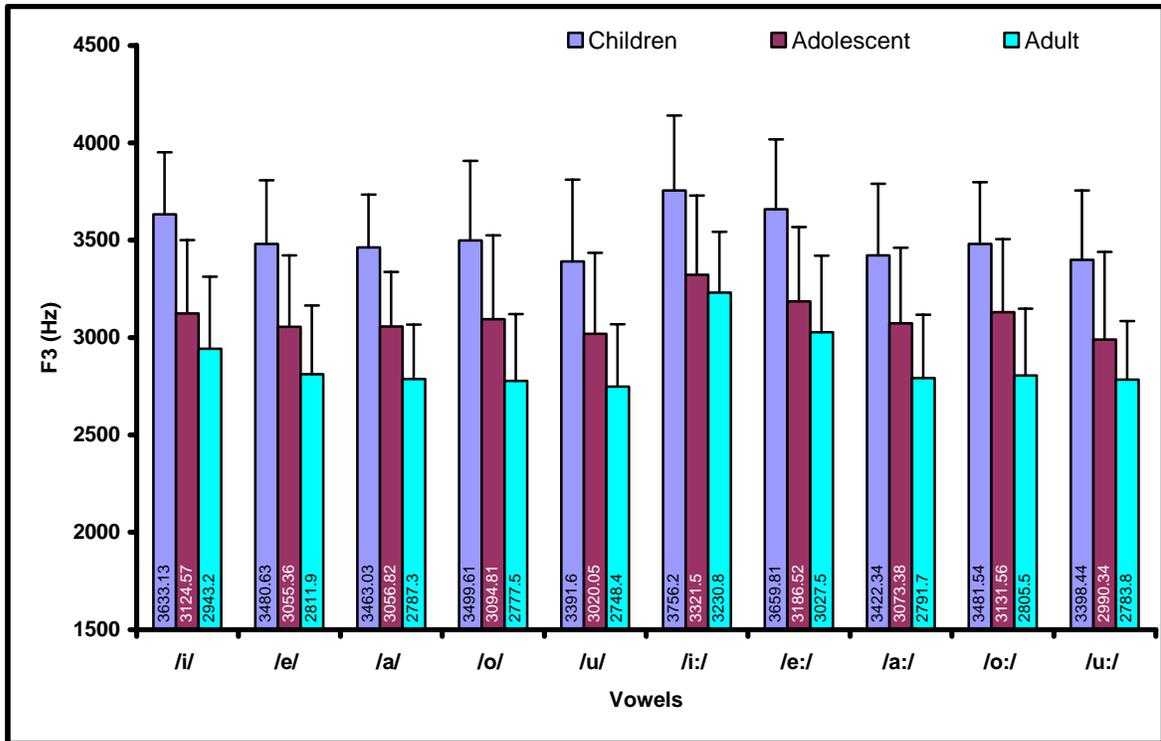


Figure 4.2.4.2: Mean F3 (Hz) and 1 SD bars across age groups

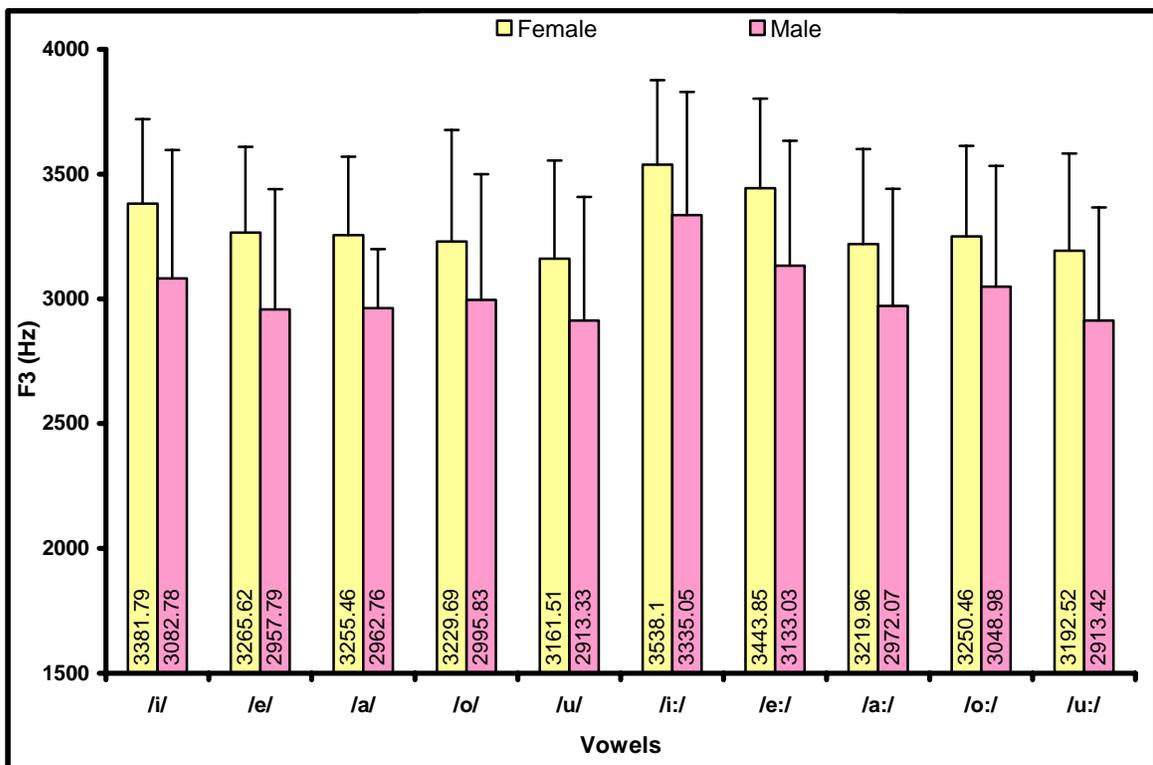


Figure 4.2.4.3: Mean F3 (Hz) and 1 SD bars across gender groups

As a regional group, speakers from Rayalaseema region had higher F3 followed by Telengana and Coastal speakers for all the vowels. It was also seen that, front high vowels /i/ and /i:/ had higher mean F3 while back high vowels /u/ and /u:/, lower mean F3. On scrutiny of the data based on phonetic length, it was noted that, as phonetic length increased, mean F3 increased in all regions except for mid vowel (/a/) in Coastal speakers, back vowel (/o/) in Rayalaseema speakers and mid & back vowels (/a/ & /u/) in Telengana speakers. The mean F3 and 1 SD bars of all vowels across different regional groups are depicted in Figure 4.2.4.4. The means, SD and 95% confidence interval for mean of all the vowels for all the three region groups are given in Appendix VIII e (Table 4.2.4.5).

There was an effect on the F3 of the following vowel in Telugu by the manner of articulation of the preceding consonant. Front and mid vowels (/i/, /e/, /a/, /i:/, /e:/, and /a:/) had higher mean F3 when preceded by nasal consonants as compared to stop consonants, while for back vowels (/o/ & /u:/) the reverse was seen. It was also observed that vowels (/e/, /u/, /i:/, /e:/, /a:/ and /o:/) had higher mean F3 when preceded by stop consonants as compared to affricates. Both /e/ and /a/ had higher mean F3 when preceded by semivowel followed by lateral and stop consonants. Short vowels /a/ and /u/ had higher mean F3 when preceded by fricatives as compared to stop consonants. The mean F3 and 1 SD bars of short and long vowels across different manner of articulation of the preceding consonant are depicted in Figures 4.2.4.5a and 4.2.4.5b respectively. The means and SD of all the vowels preceded by different (manner of articulation) consonants are given in Appendix VIII e (Table 4.2.4.6).

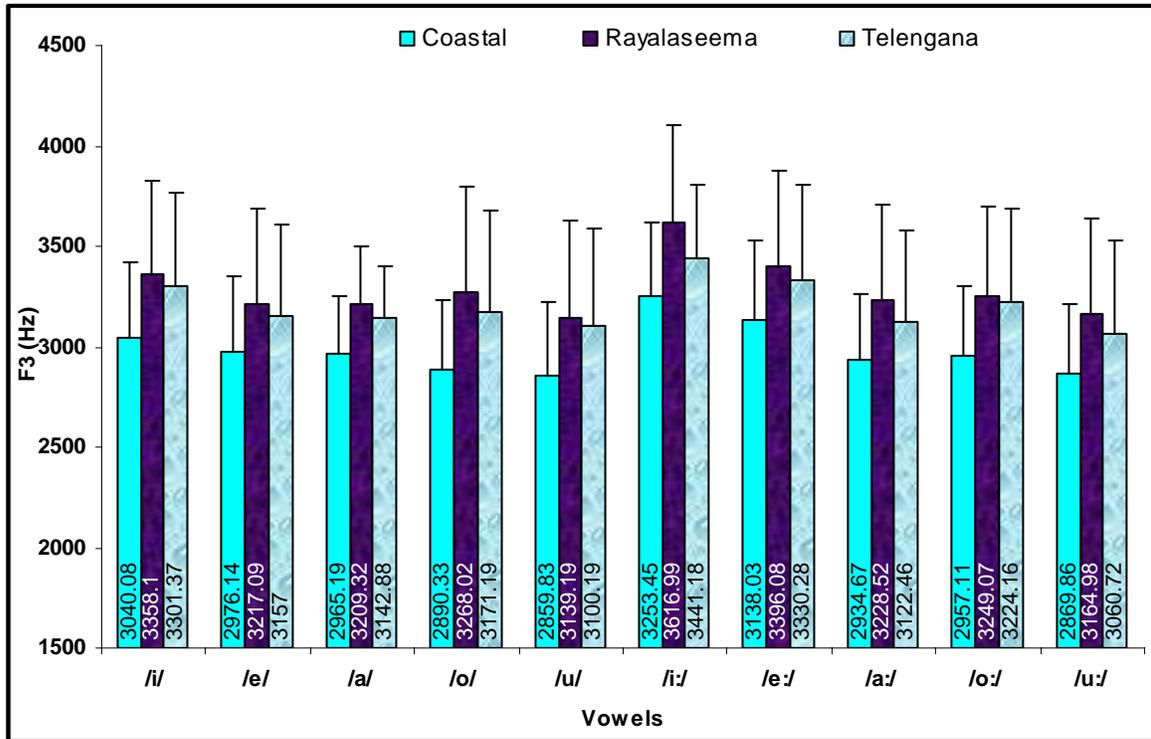


Figure 4.2.4.4: Mean F3 (Hz) and 1 SD bars across region groups

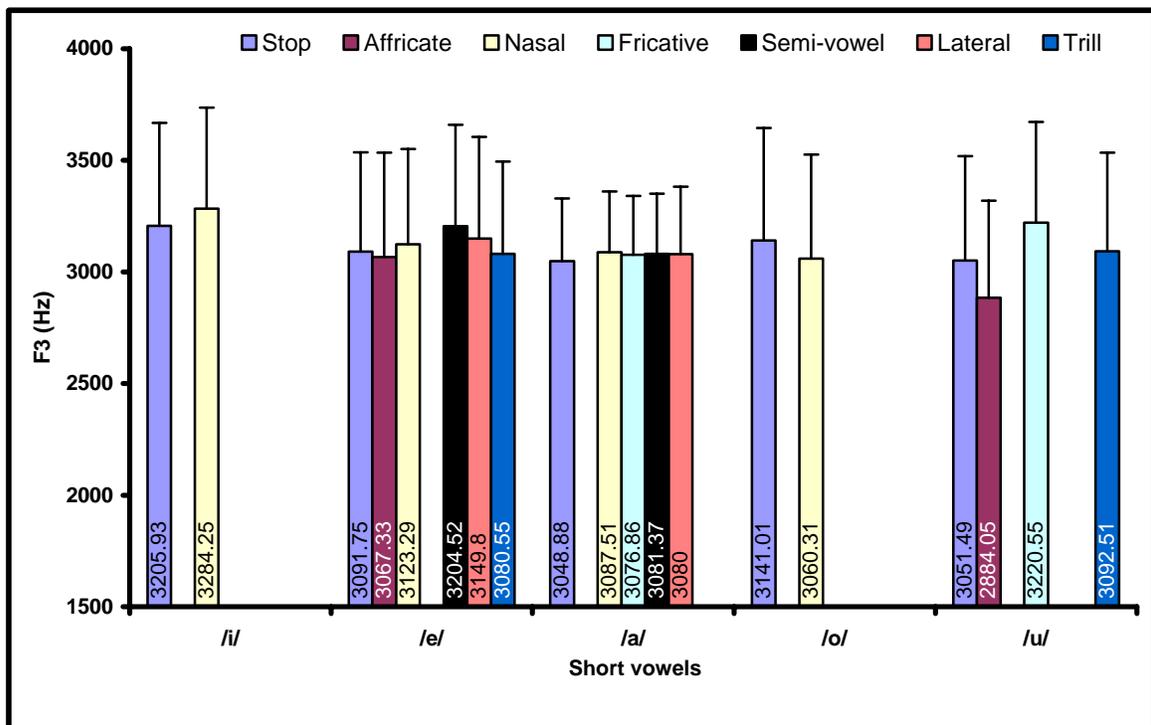


Figure 4.2.4.5a: Mean F3 (Hz) and 1 SD bars of short vowels preceded by different manner of articulation consonants

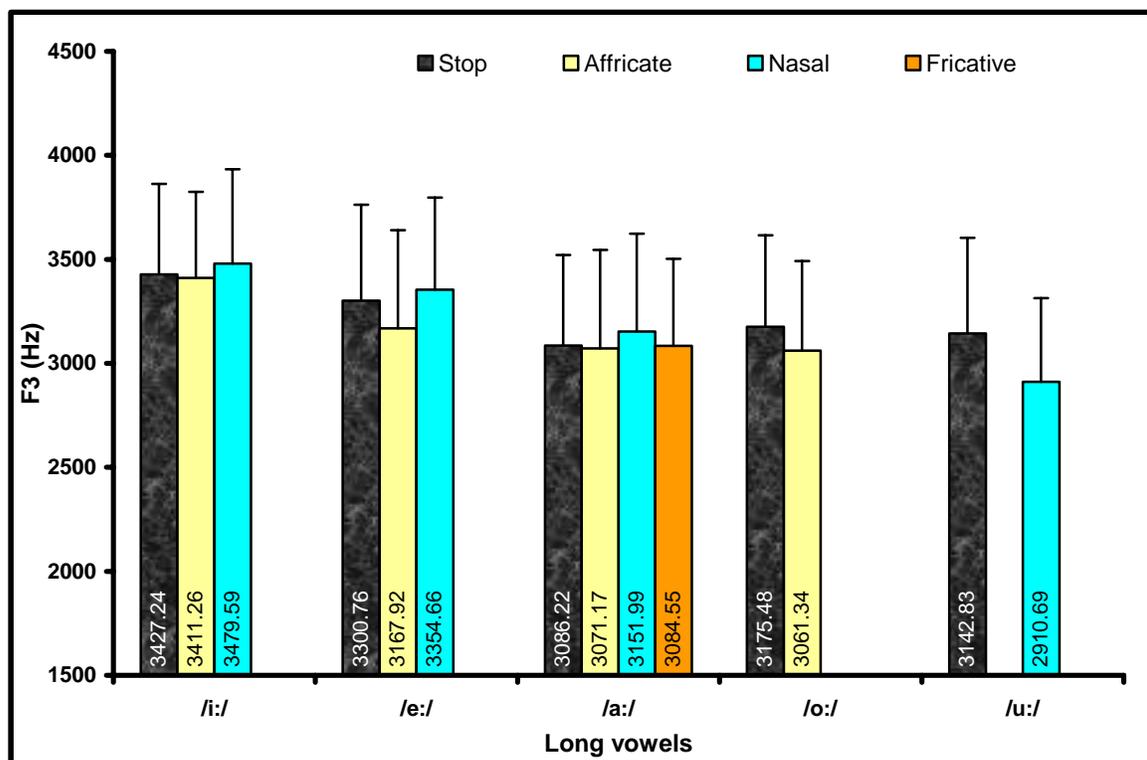


Figure 4.2.4.5b: Mean F3 (Hz) and 1 SD bars of long vowels preceded by different manner of articulation consonants

Place of articulation of the preceding consonant also had an influence on the F3 of the following vowel in Telugu. Vowels /e/, /a/, /i:/, /e:/, /a:/, /o:/ and /u:/ had higher mean F3 when preceded by bilabials as compared to alveopalatals; however, front and back short vowels /i/, /o/ and /u/ had higher mean F3 when preceded by alveopalatals. Vowels /i/, /o/, /u/, /a:/ and /u:/ had higher mean F3 when preceded by dentals as compared to bilabials; however, front and back long vowels /e:/ and /o:/ had higher mean F3 when preceded by bilabials. Vowels /a/, /u/, /i:/ and /a:/ had higher mean F3 when preceded by alveopalatals as compared to velar consonants while front mid long vowel /e:/, higher mean F3 when preceded by velars. Front and mid vowels /a/, /i:/ and /a:/ had higher mean F3 when preceded by bilabials followed by alveopalatals and velar consonants, while back vowel /u/, higher mean F3 when preceded by alveopalatals followed by velar and bilabials. Short and long mid vowels /a/ and /a:/ had higher mean F3 when preceded by bilabials as compared to velars. Short and long back vowels /o/, /u/ and /u:/ had higher mean F3 when preceded by dentals as compared to bilabials while /o:/ had higher mean F3 when preceded by bilabials. The mean F3 and 1 SD bars of short and long vowels across different place of

articulation of the preceding consonant are depicted in Figures 4.2.4.6a and 4.2.4.6b respectively. The means and SD of all the vowels preceded by different (place of articulation) consonants are given in Appendix VIII e (Table 4.2.4.7).

Short vowels had higher mean F3 when preceded by voiced consonants except for /o/ while long vowels had higher mean F3 when preceded by voiceless consonants except for /a:/. Front short vowels (/i/ & /e/) had higher mean F3 when preceded by voiced consonants while long vowels (/i:/ & /e:/) had higher mean F3 when preceded by voiceless consonants. The mean F3 and 1 SD bars of all vowels across voicing feature of the preceding consonant are depicted in Figure 4.2.4.7. The means and SD of all the vowels for different voiced and voiceless consonants are given in Appendix VIII e (Table 4.2.4.8).

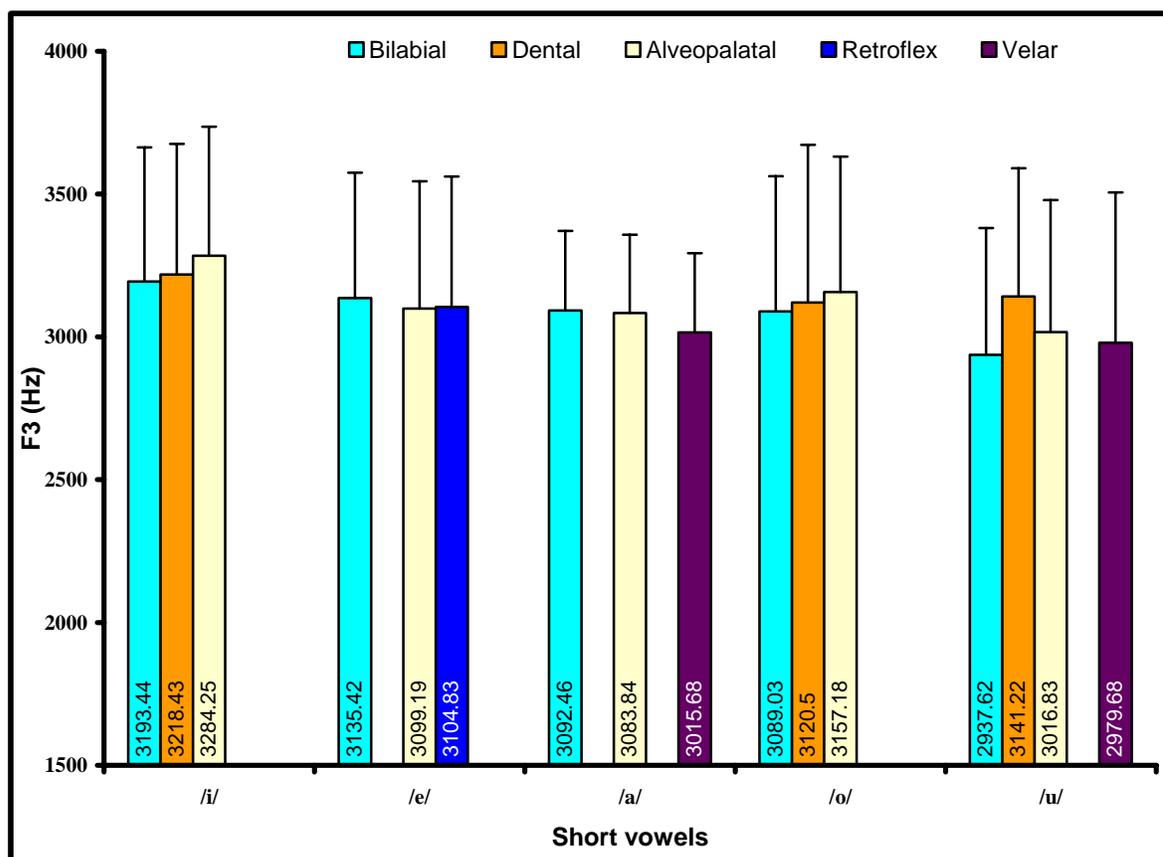


Figure 4.2.4.6a: Mean F3 (Hz) and 1 SD bars of short vowels preceded by different place of articulation consonants

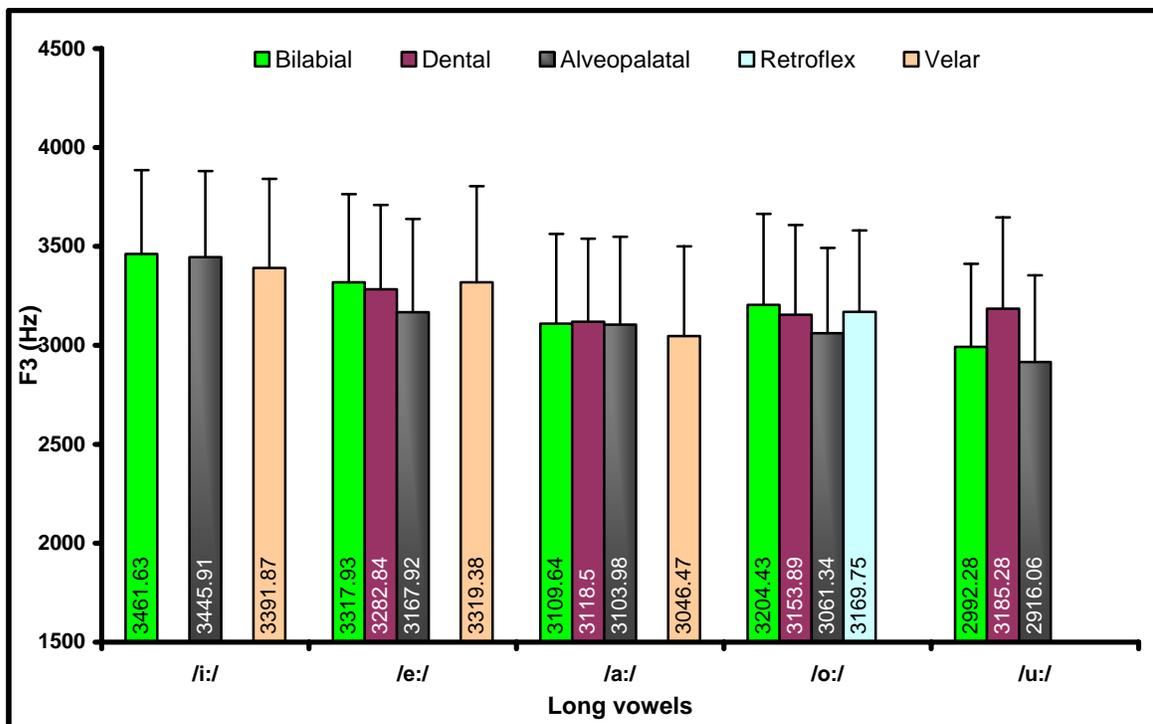


Figure 4.2.4.6b: Mean F3 (Hz) and 1 SD bars of long vowels preceded by different place of articulation consonants

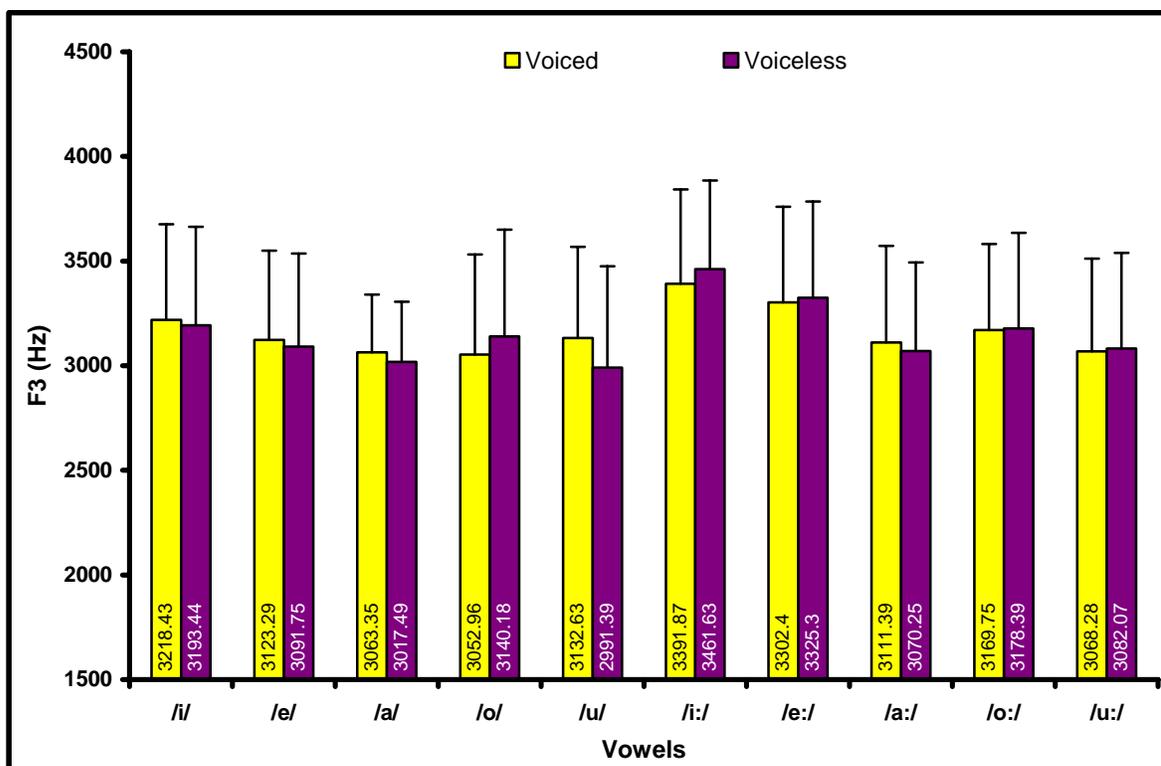


Figure 4.2.4.7: Mean F3 (Hz) and 1 SD bars of vowels preceded by different voicing feature of consonants

Queries on whether age, gender and region have any association with F3 and if so the kind of association and which of the vowels studied have significant difference in F3 among the age, gender and region groups were addressed to further understand the variations in the F3 observed in the analysis. Random intercept model 3 was used (as described in the method) to understand if there was any association between F3 and age, gender and region groups. The results are given in Table 4.2.4.a. and it is observed that, there is a significant association between F3 and age, gender and region, with age and gender have negative association with F3.

Table 4.2.4.a: Statistical analysis using random intercept model for F3

N=4320				
Covariates	Estimate	Std. Error	Wald ratio	P value*
Constant (β_{0ij})	3427.99	49.67	69.02	< 0.01
Age (β_{1ijk})	-215.87	18.72	-11.53	< 0.01
Gender (β_{2ijk})	-5.82	2.36	-2.47	0.01
Region (β_{3ijk})	83.00	6.82	12.17	< 0.01
Variance components				
Random Error:	99282.01			
Consonant Level:	51653.04			
Individual level:	42397.89			
Total variation:	193332.94			
$-2*\log likelihood(IGLS) = 57059.31$				
<i>*significant at 0.05 level</i>				

Model: Third formant frequency (F3) = 3427.99 – 215.87age – 5.82gender + 83.00region

Further to study which of the vowels differed significantly among the age and region groups, Tukey HSD was done and the results suggested that F3 of all vowels showed statistically significant difference between children, adolescents and adults (Table 4.2.4.b) except for mid vowel /a/ between all age groups and /i:/ between adolescents and adults. Within the region groups, majority of vowels (/i/, /e/, /o/, /u/, /e:/, /o:/ and /u:/) did not significantly differ in F3 between Rayalaseema and Telengana speakers and in all regional groups for mid vowel /a/ (Table 4.2.4.c). Student's *t*-test reflected that all vowels

had statistically significant difference in F3 between females and males except for mid low vowel /a/ (Table 4.2.4.d).

Table 4.2.4.b: Post hoc results for each vowel between age groups for F3

N=4320				
Vowel	(I) Age Group	(J) Age Group	Mean Difference (I-J)	Sig.
/i/	Children	Adolescent	508.56(*)	< 0.01
	Children	Adult	689.90(*)	< 0.01
	Adolescent	Adult	181.35(*)	0.007
/e/	Children	Adolescent	425.27(*)	< 0.01
	Children	Adult	668.71(*)	< 0.01
	Adolescent	Adult	243.44(*)	< 0.01
/a/	Children	Adolescent	6.20	0.975
	Children	Adult	-24.27	0.681
	Adolescent	Adult	-30.47	0.549
/o/	Children	Adolescent	404.80(*)	< 0.01
	Children	Adult	722.09(*)	< 0.01
	Adolescent	Adult	317.29(*)	< 0.01
/u/	Children	Adolescent	371.56(*)	< 0.01
	Children	Adult	643.22(*)	< 0.01
	Adolescent	Adult	271.66(*)	< 0.01
/i:/	Children	Adolescent	434.69(*)	< 0.01
	Children	Adult	525.39(*)	< 0.01
	Adolescent	Adult	90.70	0.213
/e:/	Children	Adolescent	473.29(*)	< 0.01
	Children	Adult	632.29(*)	< 0.01
	Adolescent	Adult	159.01(*)	< 0.01
/a:/	Children	Adolescent	348.96(*)	< 0.01
	Children	Adult	630.62(*)	< 0.01
	Adolescent	Adult	281.66(*)	< 0.01
/o:/	Children	Adolescent	349.98(*)	< 0.01
	Children	Adult	676.06(*)	< 0.01
	Adolescent	Adult	326.08(*)	< 0.01
/u:/	Children	Adolescent	408.10(*)	< 0.01
	Children	Adult	614.67(*)	< 0.01
	Adolescent	Adult	206.57(*)	0.003

*significant at 0.05 level

Table 4.2.4.c: Post hoc results for each vowel between region groups for F3

N=4320

Vowel	(I) Age Group	(J) Age Group	Mean Difference (I-J)	Sig.
/i/	Coastal	Rayalaseema	-318.02(*)	< 0.01
	Coastal	Telengana	-261.29(*)	0.001
	Rayalaseema	Telengana	56.73	0.723
/e/	Coastal	Rayalaseema	-240.95(*)	< 0.01
	Coastal	Telengana	-180.86(*)	0.001
	Rayalaseema	Telengana	60.09	0.425
/a/	Coastal	Rayalaseema	-14.13	0.879
	Coastal	Telengana	2.31	0.997
	Rayalaseema	Telengana	16.44	0.839
/o/	Coastal	Rayalaseema	-377.69(*)	< 0.01
	Coastal	Telengana	-280.86(*)	< 0.01
	Rayalaseema	Telengana	96.82	0.310
/u/	Coastal	Rayalaseema	-279.36(*)	< 0.01
	Coastal	Telengana	-240.36(*)	< 0.01
	Rayalaseema	Telengana	39.01	0.712
/i:/	Coastal	Rayalaseema	-363.54(*)	< 0.01
	Coastal	Telengana	-187.73(*)	0.005
	Rayalaseema	Telengana	175.80(*)	0.010
/e:/	Coastal	Rayalaseema	-258.05(*)	< 0.01
	Coastal	Telengana	-192.25(*)	0.001
	Rayalaseema	Telengana	65.80	0.434
/a:/	Coastal	Rayalaseema	-293.85(*)	< 0.01
	Coastal	Telengana	-187.79(*)	< 0.01
	Rayalaseema	Telengana	106.06(*)	0.021
/o:/	Coastal	Rayalaseema	-291.96(*)	< 0.01
	Coastal	Telengana	-267.05(*)	< 0.01
	Rayalaseema	Telengana	24.91	0.917
/u:/	Coastal	Rayalaseema	-295.12(*)	< 0.01
	Coastal	Telengana	-190.86(*)	0.031
	Rayalaseema	Telengana	104.26	0.344

*significant at 0.05 level

Table 4.2.4.d: Student's *t*-test results for all vowels between two gender groups for F3

Vowel	Mean Difference	df	t
/i/	299.01	183	5.026*
/e/	307.83	428	8.097*
/a/	12.70	502	0.533
/o/	233.86	294	4.239*
/u/	248.19	478	6.180*
/i:/	203.05	249	4.042*
/e:/	310.82	387	7.370*
/a:/	247.89	657	7.618*
/o:/	201.48	250	3.847*
/u:/	279.10	198	4.717*

*significant at 0.05 level

From the results, it is inferred that there is a significant association between age, gender and region with F3. As age increased, there was a significant decrease in F3 and also significant variation among the region and gender groups. However, individual vowel variations within the region groups are not significant; they tend to be significant with influence of consonant and individual level variations. It can also be inferred that, consonants were contributing more than individual variations to F3 changes.

The results indicate that F3 varied depending upon the transition of the tongue in the vocal tract. The findings of the current study endorse the reports by Pickett (1996), Monsen & Engebretson (1983); Peterson & Barney (1952) that, the frequency of F3 is lowered by back tongue constriction and raised by a front tongue constriction and relative volume of the vocal tract. Similar results have been reported by Joos (1948), Peterson & Barney (1952), Fant (1960), Kent (1976), Kent & Read (1995), Hasegawa-Johnson et.al., (2003), Whalen et.al., (2004), Riyamol (2007), Nagamma Reddy, (1999). The results support the findings of Nagamma Reddy (1998), that long vowels have higher F3 than short vowels. It was observed that, F3 variations based on the tongue transition, causing variations in the vocal tract length were concurrent with the findings observed in all the languages.

The findings of the current study that as age progresses, F3 decreases has also been reported in English (Peterson & Barney, 1952; Eguchi & Hirish, 1969; Kent, 1976), in Hebrew (Most et.al., 2000), in New Zealand English (Watson et.al., 2004) and in Indian languages (Sreedevi, 2000; Ampathu, 1998). It may be inferred that F3 variations are consistent with age related changes in the vocal tract length and resonance (Monsen & Engerbretson, 1983; Watson et.al., 2004). Nagamma Reddy (1999) in her study in understanding coarticulatory effects in Telugu did comment that, F3 in vowel /a/ was reduced when followed by /i/. In the current study, most of the words where vowel /a/ was studied had /i/ as the following vowel.

Gender variations (females having higher F3 as compared to males) as observed in the current study, were reported in English (Peterson & Barney, 1952; Kent, 1976; Cox, 2004) in Hebrew (Most et.al., 2000), in Mexican Hakka Chinese (Man, 2007) and in Indian languages (Sreedevi, 2000; Riyamol, 2007), suggesting it as an universal phenomenon in the languages studied. In the literature, the variations among the gender were attributed to the vocal tract anatomy and physiology and its resonance characteristics.

Based on the current analysis, it could be inferred that, regional variations are observed across the speakers for F3. Most et.al., (2000) had commented that regional, cultural variations for formants could exist. Venkateswara Sastry (1990-91), commented that, there are dialectal variations observed among the three regions. This could be contributing to variations in F3 along with anatomical differences, if any, in the different regions of the present study. Earlier reports of Nagamma Reddy (1999) on tongue movement using radiological and palatography studies did not reflect the variations among the different region speakers. Further research to understand these differences could clarify if anatomical and physiological variations existed between the regions.

Very few studies in the literature have reported of F3 variations with different consonant contexts. F3 is reported to be influenced by both preceding and following consonant context (Stevens & House, 1963; Nagamma Reddy, 1999; Hillenbrand et.al., 1995) as observed in this study also. Hillenbrand et.al., (1995) reported of F3 shift in

alveolar environments, also observed in the current study. However, in the current study, the consonant environment studied was alveopalatal, that resulted in higher F3 for rounded vowels in only certain contexts. This could be due to the influence of the following consonant, phonetic rules and co-articulatory effects observed in Telugu (Nagamma Reddy, 1999).

4.2.4.2 Summary of F3

In the current study, F3 data revealed that

- Long vowels had higher F3 as compared to short vowels.
- High front vowel /i/ and /i:/ had the highest F3 and back high vowel /u/ and /u:/ had the lower F3 for all age, gender and region groups.
- Front vowels had higher F3 followed by central and back vowels.
- Children had higher F3 followed by adolescents and adults.
- Females had higher F3 values when as compared to males for all vowels.
- Speakers from Rayalaseema region had higher F3 followed by Telengana and Coastal speakers for all the vowels.
- Front and mid vowels had higher F3 when preceded by nasal consonants compared to stop consonants, while for back vowels (/o/ & /u:/) the opposite was noticed.
- Vowels had higher F3 when preceded by stop consonants as compared to affricates.
- Both /e/ and /a/ had higher F3 when preceded by semivowel followed by lateral and stop consonants.
- Short vowels /a/ and /u/ had higher F3 when preceded by fricatives as compared to stop consonants.
- Vowels /e/, /a/, /i:/, /e:/, /a:/, /o:/ and /u:/ had higher F3 when preceded by bilabials as compared to alveopalatals; however, front and back short vowels /i/, /o/ and /u/ had higher F3 when preceded by alveopalatals.
- Vowels /i/, /o/, /u/, /a:/ and /u:/ had higher F3 when preceded by dentals as compared to bilabials; however front and back long vowels /e:/ and /o:/ had higher F3 when preceded by bilabials.

- Vowels /a/, /u/, /i:/ and /a:/ had higher F3 when preceded by alveopalatals as compared to velar consonants while front mid long vowel /e:/ had higher F3 when preceded by velars.
- Front and mid vowels /a/, /i:/ and /a:/ had higher F3 when preceded by bilabials followed by alveopalatals and velar consonants, while back vowel /u/ had higher F3 when preceded by alveopalatals followed by velar and bilabials.
- Short and long mid vowels had higher F3 when preceded by bilabials as compared to velars.
- Short and long back vowels /o/, /u/ and /u:/ had higher F3 when preceded by dentals as compared to bilabials while /o:/ had higher F3 when preceded by bilabials.
- Short vowels had higher F3 when preceded by voiced consonants except for /o/ while long vowels had higher F3 when preceded by voiceless consonants except for /a:/.
- Front short vowels had higher F3 when preceded by voiced consonants while long vowels when preceded by voiceless consonants.

4.2.5 Fourth Formant Frequency (F4)

On scrutiny of the collected data, it was seen that long vowels had higher F4 as compared to short vowels. High front vowels /i/ and /i:/ had the highest mean F4 and back high vowels /u/ and /u:/, the lowest mean F4. Front vowels had higher mean F4 followed by central and back vowels. As the phonetic length of the vowel increased, mean F4 increased for all vowels. The mean F4 and 1 SD bars of all vowels are depicted in Figure 4.2.5.1. The means, SD and 95% confidence interval for mean of all the vowels; and for central, front and back vowels across the age groups are given in Appendix VIII f (Tables 4.2.5.1 and 4.2.5.2 respectively).

From the data, it was observed that mean F4 decreased from children to adults. Children have higher F4 followed by adolescents and adults. It was observed that, the front high vowel /i/ and /i:/ have higher mean F4 values while high back vowel /u/ and /u:/, lower mean F4 values across the age groups. As the phonetic length of the vowel increased, mean F4 increased for all vowels across the age groups except for /a/, /o/ and /u/

in adults. The mean F4 and 1 SD bars of all vowels across different age groups are depicted in Figure 4.2.5.2. The means, SD and 95% confidence interval for mean of all the vowels for all the three age groups are given in Appendix VIII f (Table 4.2.5.3).

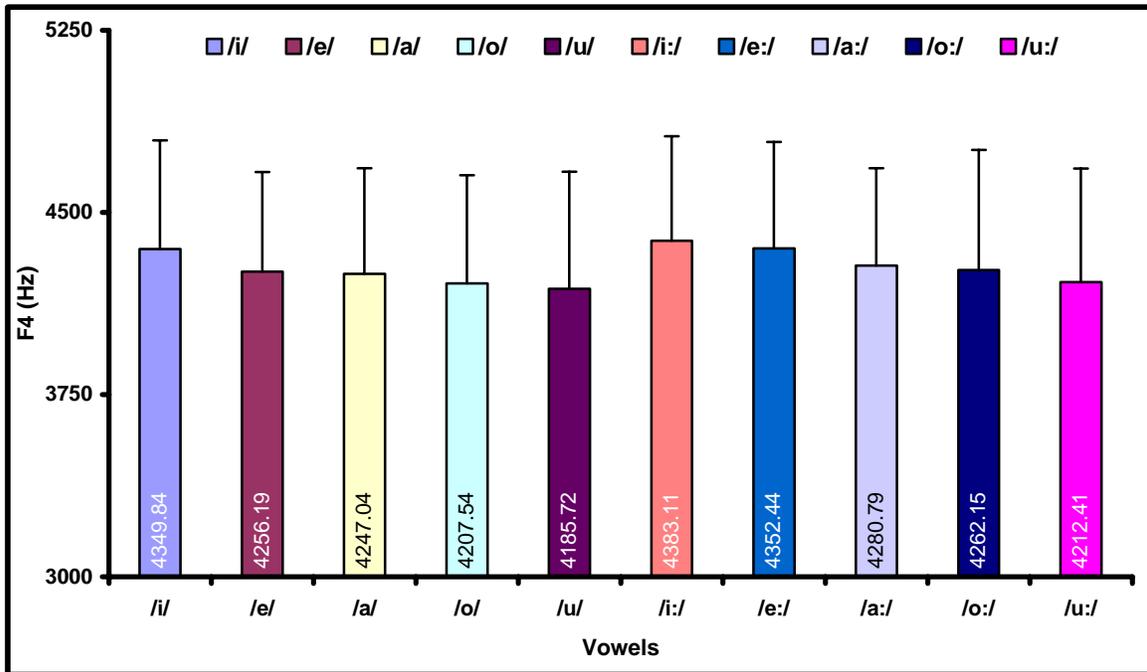


Figure 4.2.5.1: Mean F4 (Hz) and 1 SD bars of all vowels

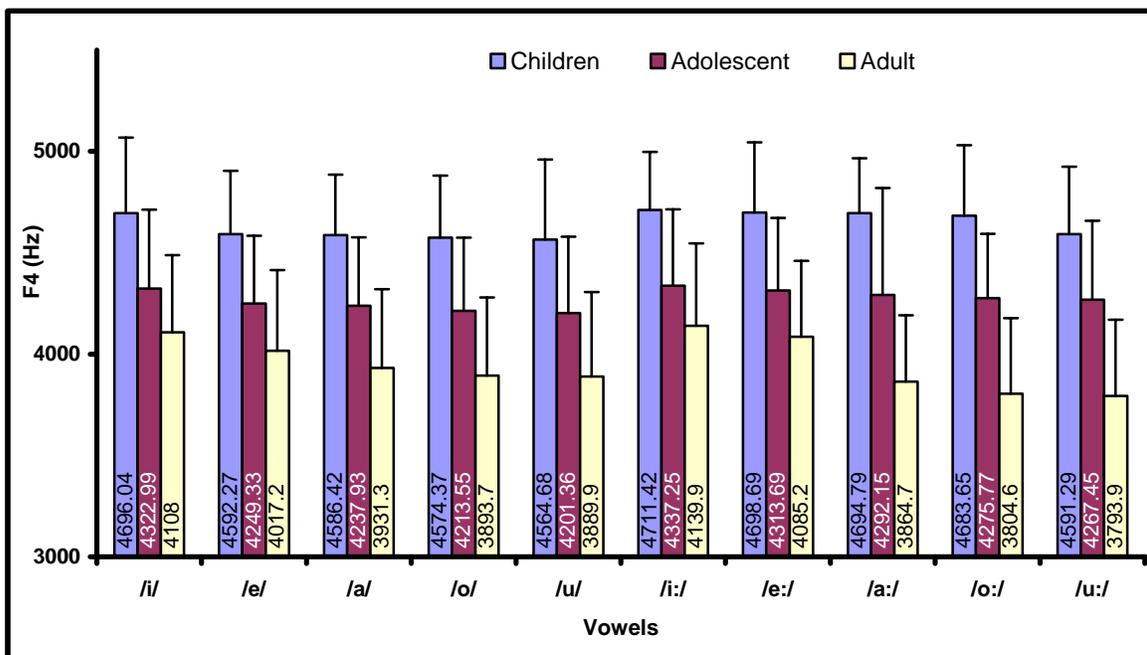


Figure 4.2.5.2: Mean F4 (Hz) and 1 SD bars across age groups

In the current study, females had higher F4 values when compared to males for all vowels. The high front vowel /i/ and /i:/ had higher F4 while back high vowel /u/ and /u:/ had lower F4 in both genders. On further observation of the data, it was found that, there was an increase in F4 values as the phonetic length increased in both genders. The mean F4 and 1 SD bars of all vowels across gender groups are depicted in Figure 4.2.5.3. The means, SD and 95% confidence interval for mean of all the vowels for the two gender groups are given in Appendix VIII f (Table 4.2.5.4).

From the data, it was observed that speakers from Rayalaseema region had higher F4 followed by Telengana and Coastal speakers for short vowels while Telengana speakers had higher mean F4 followed by Rayalaseema and Coastal speakers for long vowels. Further, it was observed that front high vowels /i/ and /i:/ had higher mean F4 while back high vowels /u/ and /u:/ had lower mean F4. On scrutiny of the data based on phonetic length, it was noted that, as phonetic length increased, mean F4 increased in all regions except for mid (/a/) in Rayalaseema speakers. The mean F4 and 1 SD bars of all vowels across regional groups are depicted in Figure 4.2.5.4. The means, SD and 95% confidence interval for mean of all the vowels for all the three region groups are given in Appendix VIII f (Table 4.2.5.5).

Manner of articulation of the preceding consonant did have an effect on F4 of the following vowel in Telugu. In the current study, it was observed that, front and mid short vowels (/i/ and /a:/) had higher mean F4 when preceded by nasal consonants as compared to stop consonants, while for vowels /e/, /o/, /i:/, /e:/, /a:/ and /u:/ the reverse was noticed. All long vowels had higher mean F4 when preceded by stop consonants as compared to nasals or affricates. From the data, it was also observed that vowels (/e/, /u/, /i:/, /e:/, /a:/ and /o:/) had higher mean F4 when preceded by stop consonants as compared to affricates. Both /e/ and /a/ had higher mean F4 when preceded by lateral followed by semivowel and stop consonants. Short vowels /a/ and /u/ had higher mean F4 when preceded by fricatives as compared to stop consonants. The mean F4 and 1 SD bars of short and long vowels across different manner of articulation of the preceding consonant are depicted in Figures 4.2.5.5a and 4.2.5.5b respectively. The means and SD of all the vowels preceded by different (manner of articulation) consonants are given in Appendix VIII f (Table 4.2.5.6).

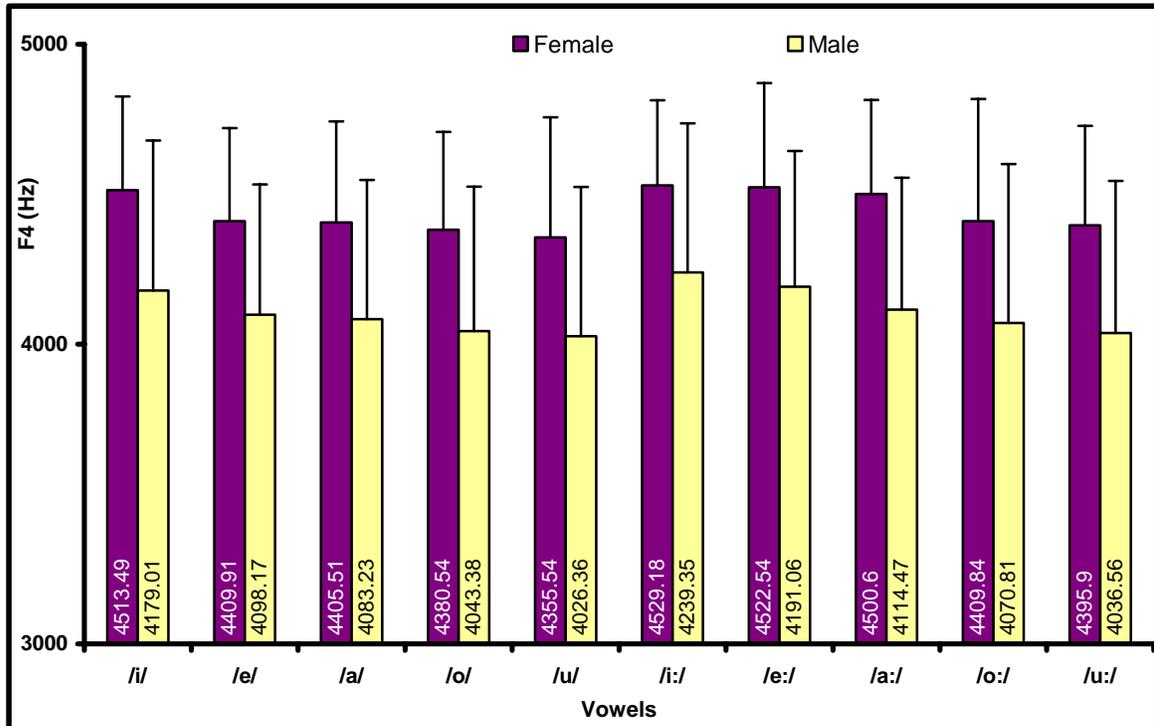


Figure 4.2.5.3: Mean F4 (Hz) and 1 SD bars across gender groups

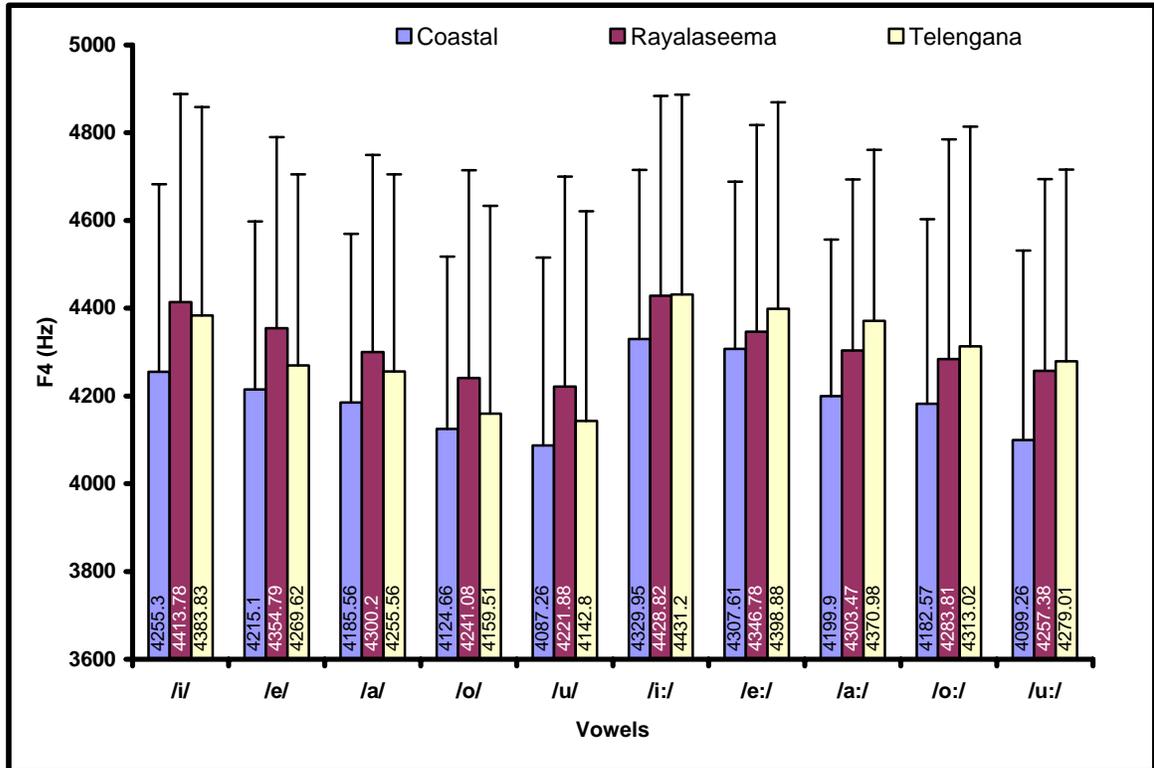


Figure 4.2.5.4: Mean F4 (Hz) and 1 SD bars across region groups

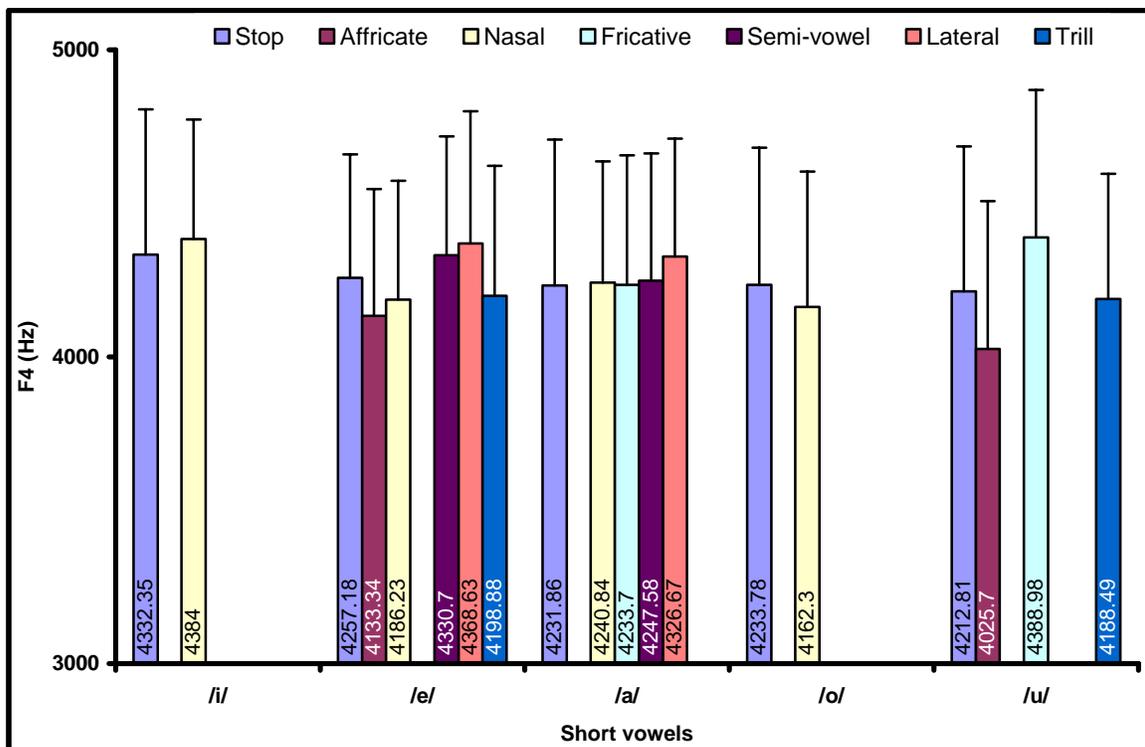


Figure 4.2.5.5a: Mean F4 (Hz) and 1 SD bars of short vowels preceded by different manner of articulation consonants

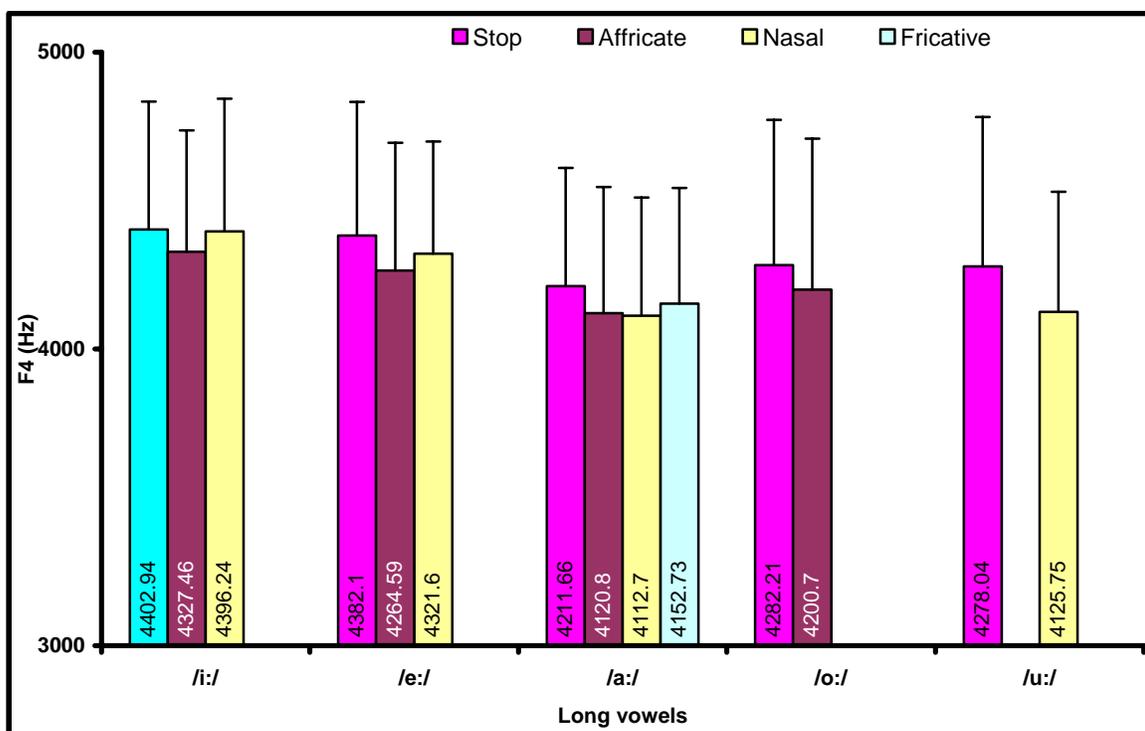


Figure 4.2.5.5b: Mean F4 (Hz) and 1 SD bars of long vowels preceded by different manner of articulation consonants

Place of articulation of the preceding consonant also had an influence on the F4 of the following vowel in Telugu. Vowels /e/, /a/, /o/, /i:/, /e:/, /a:/, /o:/ and /u:/ had higher mean F4 when preceded by bilabials as compared to alveopalatals; however, front and back short vowels /i/ and /u/ had higher mean F4 when preceded by alveopalatals. Vowels /i/, /o/, /u/, /e:/, /a:/ and /u:/ had higher mean F4 when preceded by dentals as compared to bilabials; however back long vowel /o:/ had higher mean F4 when preceded by bilabials. Vowels /u/, /i:/, /e:/ and /a:/ had higher mean F4 when preceded by velars as compared to alveopalatal consonants while mid short vowel /a/ had higher mean F4 when preceded by alveopalatals. High vowels /i/, /u/ and /u:/ had higher mean F4 when preceded by dentals as compared to bilabial or alveopalatal consonants. Short and long mid vowels /a/ and /a:/ had higher mean F4 when preceded by bilabials as compared to alveopalatals. Short and long back vowels /o/, /u/ and /u:/ had higher mean F4 when preceded by dentals as compared to alveopalatals. The mean F4 and 1 SD bars of short and long vowels across different place of articulation of the preceding consonant are depicted in Figures 4.2.5.6a and 4.2.5.6b respectively. The means and SD of all the vowels for different preceding place of articulation consonants are given in Appendix VIII f (Table 4.2.5.7).

From the data of the current study, it is observed that voicing feature of the consonants have an influence on F4 and vary between the short and long vowels. For low and high vowels (/i/, /a/ and /u/), the mean F4 reduced with increase in phonetic length, while for mid vowels (/e/ and /o/) it increased when preceded by voiced consonants. No consistency was observed in voiceless consonant context. Vowels had higher mean F4 when preceded by voiced consonants except for high vowels (/i/, /u/ and /u:/). The mean F4 and 1 SD bars of all vowels across voicing feature of the preceding consonant are depicted in Figure 4.2.5.7. The means and SD of all the vowels for different voiced and voiceless consonants are given in Appendix VIII f (Table 4.2.5.8).

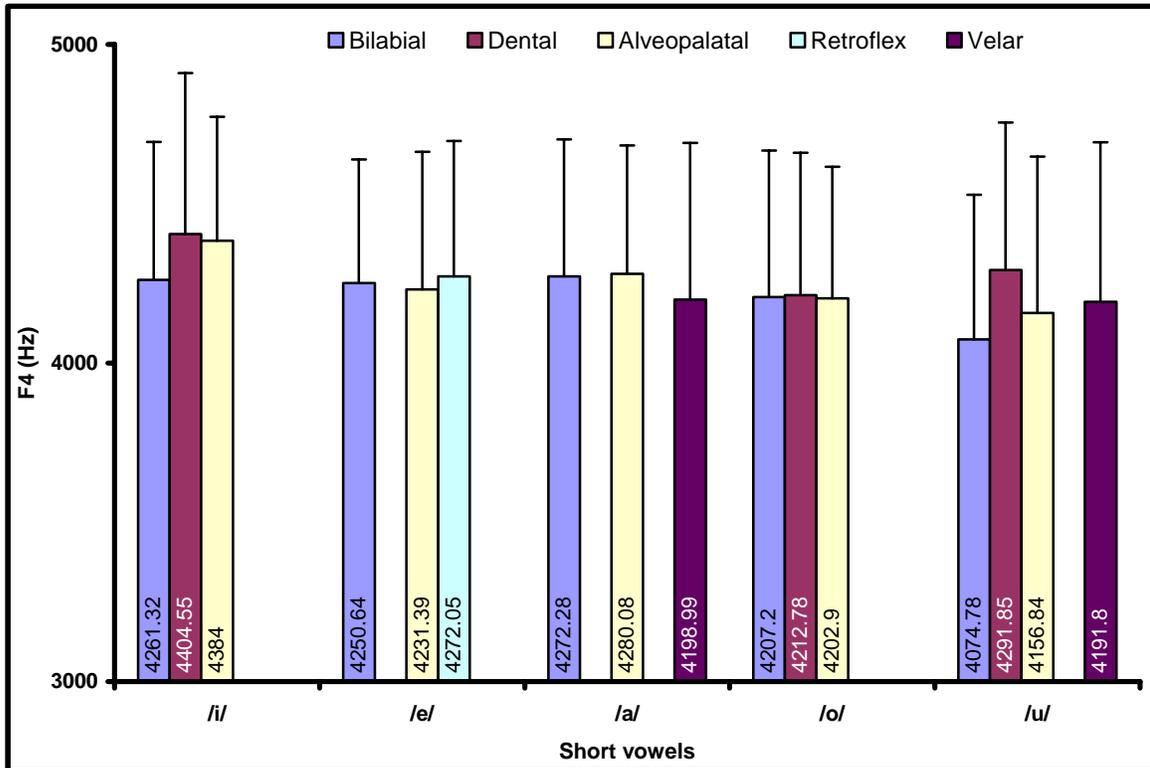


Figure 4.2.5.6a: Mean F4 (Hz) and 1 SD bars of short vowels preceded by different place of articulation consonants

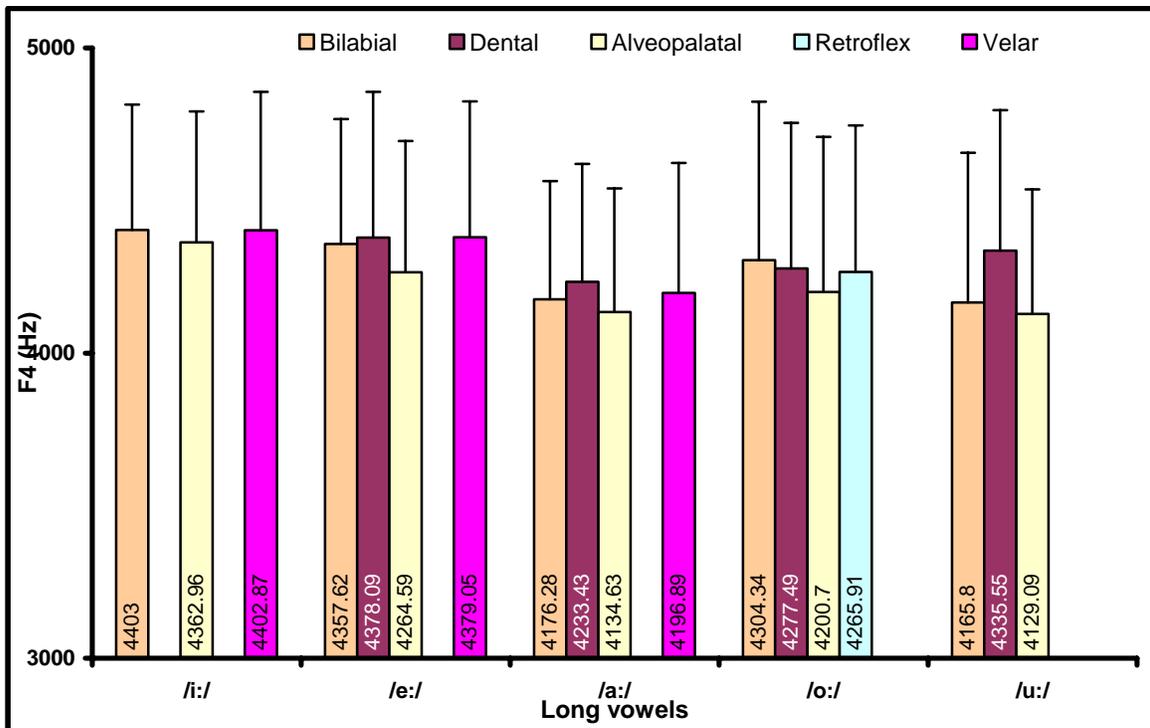


Figure 4.2.5.6b: Mean F4 (Hz) and 1 SD bars of long vowels preceded by different place of articulation consonants

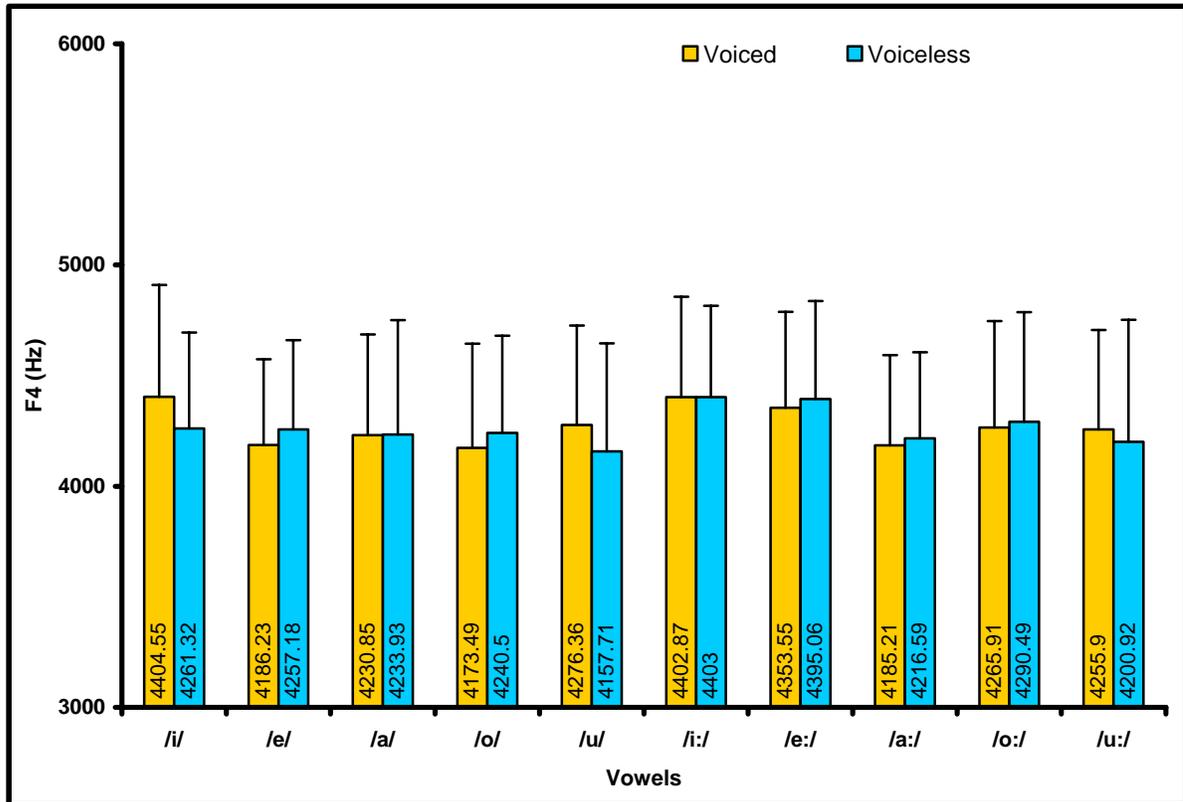


Figure 4.2.5.7: Mean F4 (Hz) and 1 SD bars of vowels preceded by different voicing feature of consonants

The questions “Do age, gender and region have any association with F4, if so what kind of association? and which of the vowels studied have significant difference in F4 among the age, gender and region groups” to further understand the variations in the F4 observed in the analysis were addressed by Random intercept model 3 (as described in the method) to understand if there was any association between F4 and age, gender and region groups. The results are given in Table 4.2.5.a.

Table 4.2.5.a: Statistical analysis using random intercept model for F4

N=4320				
Covariates	Estimate	Std. Error	Wald ratio	P value*
Constant (β_{0ij})	4816.64	27.71	173.82	< 0.01
Age (β_{1ijk})	-126.00	19.61	-6.43	< 0.01
Gender (β_{2ijk})	-25.35	2.47	-10.26	< 0.01
Region (β_{3ijk})	35.99	7.07	5.09	< 0.01
Variance components				
Random Error:	106087.80			
Consonant Level:	22349.65			
Individual level:	3526.07			
Total variation:	131963.52			
$-2*\log likelihood(IGLS) = 50081.62$				
<i>*significant at 0.05 level</i>				

Model: Fourth formant frequency (F4) = 4816.64 – 126age – 25.35gender + 35.99region

From Table 4.2.5.a, it is observed that, there is a significant association between F4 and age, gender and region. Further, age and gender have negative association with F4.

Further to study which of the vowels differed significantly among the age and region groups, Tukey HSD was administered and the results suggested that F4 of all vowels showed statistically significant difference between children, adolescents and adults (Table 4.2.5.b). Within the region groups, all vowels had statistically no significant difference in F4 between the three region groups, except for /u/ between Coastal and Telengana and /a:/ between Coastal and Rayalaseema speakers (Table 4.2.5.c). Student's *t*-test was done to study which of the vowels significantly differed with the gender groups. The results are given in Table 4.2.5.d.

Table 4.2.5.b: Post hoc results for each vowel between age groups for F4

N=4320

Vowel	(I) Age Group	(J) Age Group	Mean Difference (I-J)	Sig.
/i/	Children	Adolescent	373.05(*)	< 0.01
	Children	Adult	588.02(*)	< 0.01
	Adolescent	Adult	214.97(*)	0.004
/e/	Children	Adolescent	322.94(*)	< 0.01
	Children	Adult	525.10(*)	< 0.01
	Adolescent	Adult	202.16(*)	< 0.01
/a/	Children	Adolescent	348.48(*)	< 0.01
	Children	Adult	655.12(*)	< 0.01
	Adolescent	Adult	306.63(*)	< 0.01
/o/	Children	Adolescent	360.82(*)	< 0.01
	Children	Adult	680.69(*)	< 0.01
	Adolescent	Adult	319.87(*)	< 0.01
/u/	Children	Adolescent	363.33(*)	< 0.01
	Children	Adult	674.83(*)	< 0.01
	Adolescent	Adult	311.50(*)	< 0.01
/i:/	Children	Adolescent	374.17(*)	< 0.01
	Children	Adult	571.52(*)	< 0.01
	Adolescent	Adult	197.35(*)	0.001
/e:/	Children	Adolescent	385.00(*)	< 0.01
	Children	Adult	613.52(*)	< 0.01
	Adolescent	Adult	228.52(*)	< 0.01
/a:/	Children	Adolescent	322.64(*)	< 0.01
	Children	Adult	630.14(*)	< 0.01
	Adolescent	Adult	307.50(*)	< 0.01
/o:/	Children	Adolescent	407.88(*)	< 0.01
	Children	Adult	879.03(*)	< 0.01
	Adolescent	Adult	471.15(*)	< 0.01
/u:/	Children	Adolescent	323.84(*)	< 0.01
	Children	Adult	727.42(*)	< 0.01
	Adolescent	Adult	403.58(*)	< 0.01

*significant at 0.05 level

Table 4.2.5.c: Post hoc results for each vowel between region groups for F4

N=4320

Vowel	(I) Age Group	(J) Age Group	Mean Difference (I-J)	Sig.
/i/	Coastal	Rayalaseema	-158.47	.134
	Coastal	Telengana	-128.53	.225
	Rayalaseema	Telengana	29.94	.926
/e/	Coastal	Rayalaseema	-39.69	.707
	Coastal	Telengana	-54.51	.475
	Rayalaseema	Telengana	-14.83	.952
/a/	Coastal	Rayalaseema	-114.64	.051
	Coastal	Telengana	-70.01	.314
	Rayalaseema	Telengana	44.63	.625
/o/	Coastal	Rayalaseema	-116.42	.189
	Coastal	Telengana	-134.85	.105
	Rayalaseema	Telengana	-18.43	.959
/u/	Coastal	Rayalaseema	-134.62	.054
	Coastal	Telengana	-155.54(*)	.022
	Rayalaseema	Telengana	-20.91	.929
/i:/	Coastal	Rayalaseema	-98.86	.315
	Coastal	Telengana	-71.24	.509
	Rayalaseema	Telengana	27.62	.914
/e:/	Coastal	Rayalaseema	-39.17	.767
	Coastal	Telengana	-91.27	.202
	Rayalaseema	Telengana	-52.10	.617
/a:/	Coastal	Rayalaseema	-133.56(*)	.003
	Coastal	Telengana	-81.08	.097
	Rayalaseema	Telengana	52.48	.382
/o:/	Coastal	Rayalaseema	-101.24	.387
	Coastal	Telengana	-130.45	.207
	Rayalaseema	Telengana	-29.21	.920
/u:/	Coastal	Rayalaseema	-158.12	.139
	Coastal	Telengana	-179.75	.100
	Rayalaseema	Telengana	-21.63	.964

*significant at 0.05 level

Table 4.2.5.d: Student's *t*-test results for all vowels between two gender groups for F4

Vowel	Mean Difference	df	t
/i/	334.48	149	5.445*
/e/	326.67	390	8.990*
/a/	307.34	451	8.345*
/o/	337.16	241	6.721*
/u/	329.18	398	7.388*
/i:/	289.83	200	5.677*
/e:/	331.48	363	8.025*
/a:/	229.80	572	7.451*
/o:/	295.37	235	4.959*
/u:/	319.34	177	5.107*

*significant at 0.05 level

From Table 4.2.5.d, it is observed that, all vowels had statistically significant difference in F4 between females and males.

From the results, it is inferred that, there is a significant association between age, gender and region with F4. As age increased, there was a significant decrease in F4 and also significant variation among the region and gender groups. Individual vowel variations within the region groups were not significant; however, they tend to be significant when other individual and consonant context variations are considered. From the statistical analysis, it could also be inferred that the effect of consonant on F4 is higher than the individual variations.

From the results of the current study it is observed that, F4 varied depending upon the transition of the tongue and constriction in the vocal tract. The current findings support the studies mentioned in the literature (Pickett, 1996; Monsen & Engebretson, 1983; Peterson & Barney, 1952) which stated that, the frequency of F4 is lowered by back tongue constriction and raised by a front tongue constriction and the relative volume of the vocal tract. Similar findings are reported in the literature by Joos (1948), Peterson & Barney (1952), Fant (1960), Kent (1976), Kent & Read (1995), Hasegawa-Johnson et.al., (2003)

and Whalen et.al., (2004). F4 for vowel /e:/ was higher than the reported values by Kostić, Mitter & Krishnamurti (1977) in Telugu literature. This could be due to the heterogeneous and cross sectional sample of the current study.

The findings observed in the current study that as age progresses, F4 decreases has been reported in English (Peterson & Barney, 1952; Eguchi & Hirish, 1969; Kent, 1976). It may now be inferred that F4 variations are consistent with age related changes in the vocal tract length and resonance (Monsen & Engerbretson, 1983; Watson et.al., 2004).

Gender variations (females having higher F4 compared to males) as observed in the current study, are reported in English (Peterson & Barney, 1952; Kent, 1976), suggesting that, gender variation is an universal phenomenon. In the literature, the variations among the gender were attributed to the vocal tract anatomy and physiology and its resonance characteristics, which could be applicable to the present study also.

From the results, it may be inferred that, regional variations are observed across the speakers for F4. Most et.al., (2000) had commented that regional, cultural variations for formants can exist, but did not specify if it was applicable for F4. Venkateswara Sastry (1990-91), commented that, there are dialectal variations observed among the three regions. It's presumed that, this could be contributing to variations in F4 along with anatomical differences, if any, in the different regions. More research is warranted to know if anatomical and physiological variations do exist between the regions contributing to the differences.

Very few studies in the literature have reported of F4 variations with different consonant contexts. It is observed that, F4 of the vowel is influenced by preceding manner, place and voicing feature of the consonant. Nagamma Reddy (1999) did comment that consonant context and following vowel have an influence on temporal and spectral characteristics of the preceding vowel in Telugu with no data available with specific reference to F4 changes. Since the word list of the current study was heterogeneous, further

comments on the influence of preceding consonant on the F4 of the vowel are beyond the scope of the study. The data of the current study should hence be cautiously used.

4.2.5.2 Summary of F4

In the current study F4 data revealed

- Long vowels had higher F4 as compared to short vowels.
- High front vowels /i/ and /i:/ had the highest F4 and back high vowels /u/ and /u:/ had the lowest F4 in all gender, region and age groups.
- Front vowels had higher F4 followed by central and back vowels.
- Phonetic length of the vowel increased F4 for all vowels.
- F4 decreased from children to adults.
- Children had higher F4 followed by adolescents and adults.
- Among the age groups, as the phonetic length of the vowel increased F4 increased for all vowels across the age groups except for /a/, /o/ and /u/ in adults.
- Females had higher F4 values when as compared to males for all vowels.
- F4 increased as the phonetic length increased in both genders.
- Rayalaseema region had higher F4 followed by Telengana and Coastal speakers for short vowels
- Telengana speakers had higher F4 followed by Rayalaseema and Coastal speakers for long vowels.
- F4 increased in all regions with increase in phonetic length, except for mid (/a/) in Rayalaseema speakers.
- Front and mid short vowels (/i/ and /a:/) had higher F4 when preceded by nasal consonants as compared to stop consonants, while vowels /e/, /o/, /i:/, /e:/, /a:/ and /u:/ opposite was noticed.
- All long vowels had higher F4 when preceded by stop consonants as compared to nasals or affricates.
- Vowels (/e/, /u/, /i:/, /e:/, /a:/ and /o:/) had higher F4 when preceded by stop consonants as compared to affricates.
- Both /e/ and /a/ had higher F4 when preceded by lateral followed by semivowel and stop consonants.

- Short vowels /a/ and /u/ had higher F4 when preceded by fricatives as compared to stop consonants.
- Vowels /e/, /a/, /o/, /i:/, /e:/, /a:/, /o:/ and /u:/ had higher F4 when preceded by bilabials as compared to alveopalatals; however, front and back short vowels /i/ and /u/, higher F4 when preceded by alveopalatals.
- Vowels /i/, /o/, /u/, /e:/, /a:/ and /u:/ had higher F4 when preceded by dentals as compared to bilabials; however, back long vowel /o:/, higher F4 when preceded by bilabials.
- Vowels /u/, /i:/, /e:/ and /a:/ had higher F4 when preceded by velars as compared to alveopalatal consonants while mid short vowel /a/, higher F4 when preceded by alveopalatals.
- High vowels /i/, /u/ and /u:/ had higher F4 when preceded by dentals as compared to bilabial or alveopalatal consonants.
- Short and long mid vowels /a/ and /a:/ had higher F4 when preceded by bilabials as compared to alveopalatals.
- Short and long back vowels /o/, /u/ and /u:/ had higher F4 when preceded by dentals as compared to alveopalatals.
- Vowels had higher F4 when preceded by voiced consonants except for high vowels (/i/, /u/ and /u:/).
- In low and high vowels (/i/, /a/ and /u/), F4 reduced with increase in phonetic length, while mid vowels (/e/ and /o/) F4 increased with increase in phonetic length when preceded by voiced consonants.

4.2.6.1 Formant bandwidths (B1, B2 & B3):

Scrutiny of the collected data revealed very minimal variations in the band widths among the vowels. The front high short and long vowels /i/ and /i:/ had larger mean bandwidth for F1 compared to front mid vowel /e/. The front mid short and long vowels /e/ and /e:/ had larger mean bandwidth for F2 as compared to front high vowels /i/ and /i:/. The front high short and long vowels /o/ and /i:/ had larger mean bandwidth for F3 as compared to vowels /a/ and /o/. Central vowels had larger mean bandwidth for F1 and F2 while front vowels had larger mean bandwidth for F3. It was also observed that, mean B1

and B2 varied with increase in the phonetic length of the vowel. The mean and 1 SD bars for all vowels are depicted in Figure 4.2.6.1 for B1, Figure 4.2.6.2 for B2 and Figure 4.2.6.3 for B3. The means, SD and 95% confidence interval for mean of all the vowels; and for central, front and back vowels are given in Appendix VIII g (Tables 4.2.6.1 and 4.2.6.2) for B1; Appendix VIII h (Tables 4.2.7.1 and 4.2.7.2) for B2 and Appendix VIII i (Tables 4.2.8.1 and 4.2.8.2) for B3 respectively.

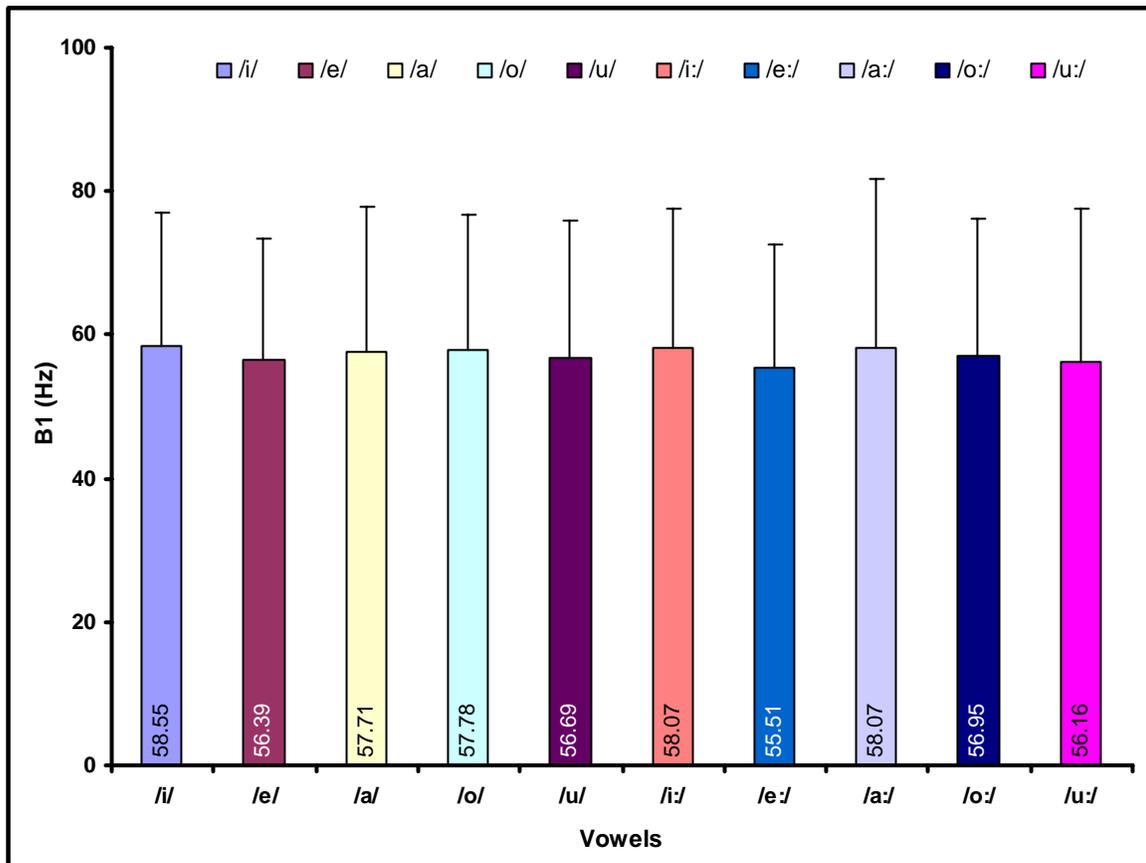


Figure 4.2.6.1: Mean B1 (Hz) and 1 SD bars of all vowels

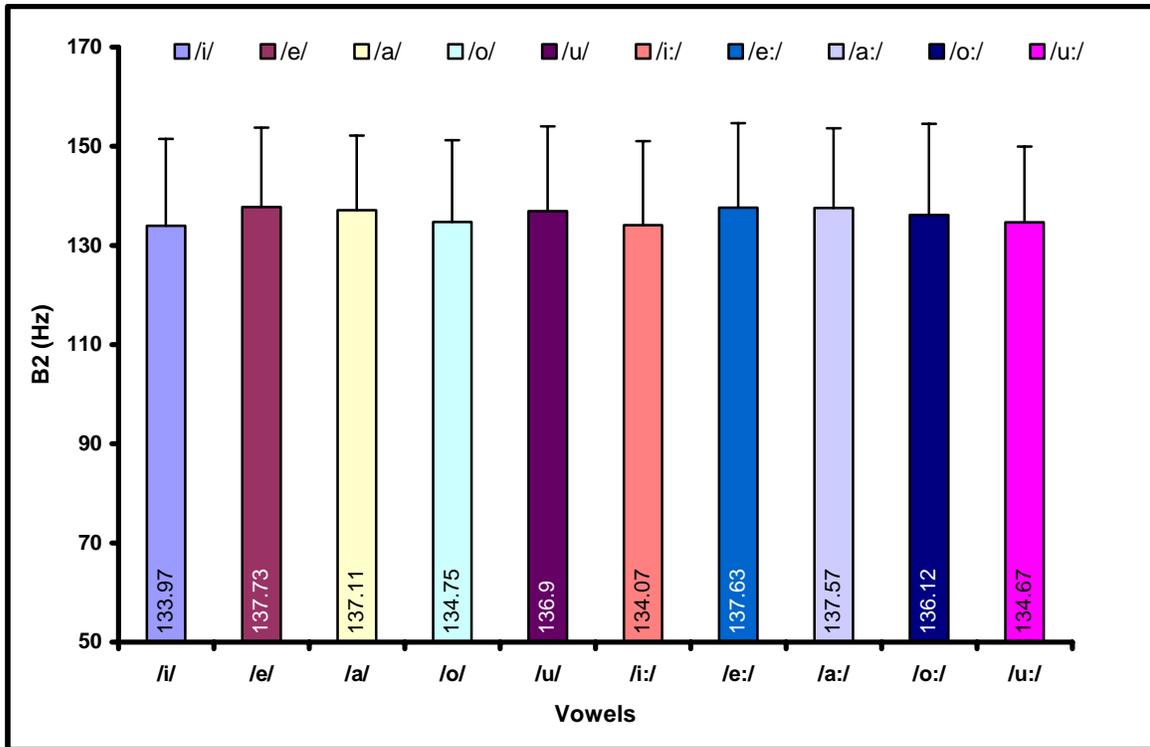


Figure 4.2.6.2: Mean B2 (Hz) and 1 SD bars of all vowels

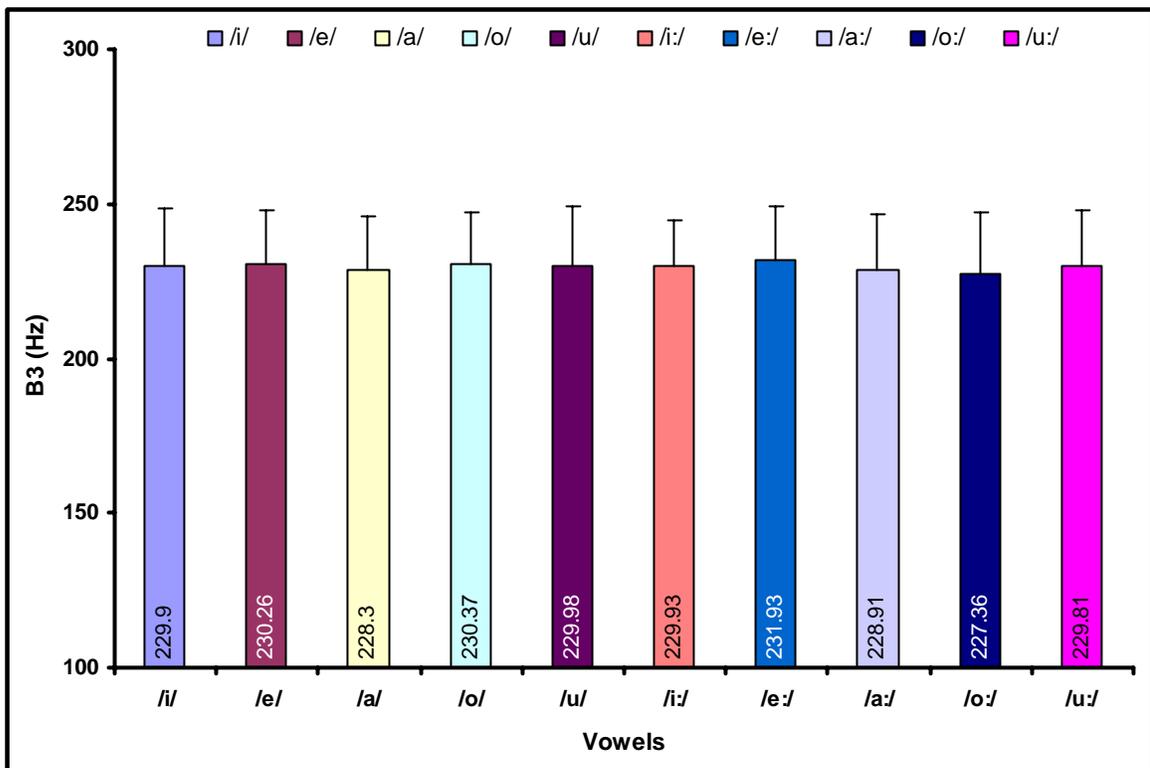


Figure 4.2.6.3: Mean B3 (Hz) and 1 SD bars of all vowels

In the current study, bandwidths (B1, B2 and B3) varied across the age group for all vowels. In children, vowels /i/ and /a:/ had larger mean B1 and vowels /e/ and /e:/ had small mean B1; vowels /e/ and /e:/ had larger mean B2 and vowels /o/ and /o:/ had small mean B2; vowels /e/ and /u:/ had larger mean B3 and vowels /a/ and /o:/ had small mean B3. In adolescents, /a/ and /i:/ had larger mean B1 while /u/ and /u:/ had lower values; vowels /u/ and /a:/ had larger mean B2 while it was lower for /o/ and /i:/; vowels /u/ and /e:/ had larger mean B3 while for /o/ and /u:/ it was lower. Adults had larger mean B1 values for vowels /o/ and /o:/ and smaller for /a/ and /u:/; vowels /a/ and /o:/ had larger mean B2 and smaller for /i/ and /i:/; larger mean B3 values for vowels /o/ and /e:/ and smaller for /a/ and /a:/. The mean and 1 SD bars of all vowels are depicted in Figure 4.2.6.4 for B1, Figure 4.2.6.5 for B2 and Figure 4.2.6.6 for B3. The means, SD and 95% confidence interval for mean of all the vowels for all the three age groups are given in Appendix VIII g (Table 4.2.6.3) for B1, Appendix VIII h (Table 4.2.7.3) for B2 and Appendix VIII i (Table 4.2.8.3) for B3.

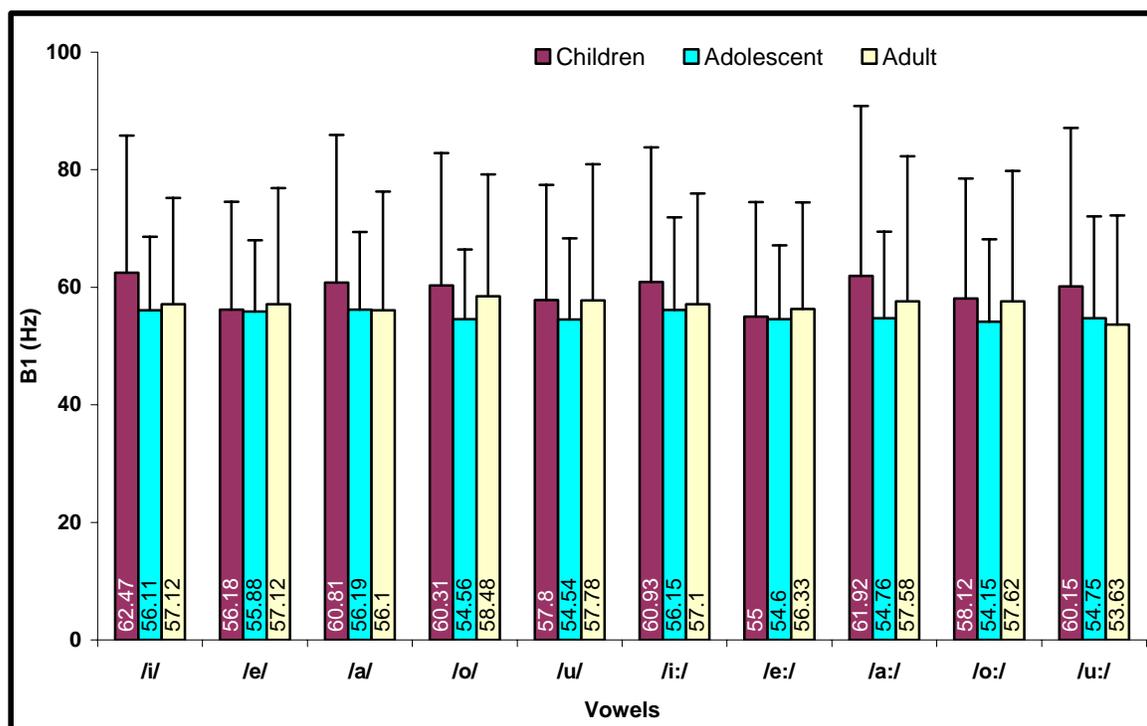


Figure 4.2.6.4: Mean B1 (Hz) and 1 SD bars across age groups

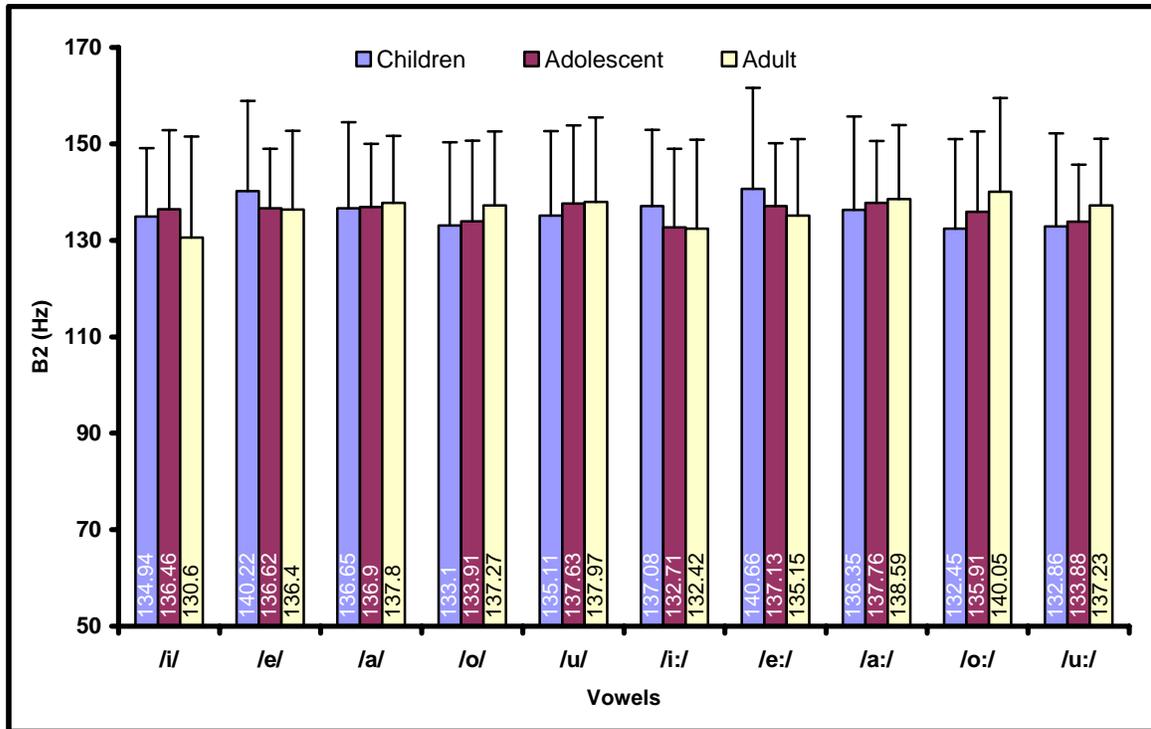


Figure 4.2.6.5: Mean B2 (Hz) and 1 SD bars across age groups

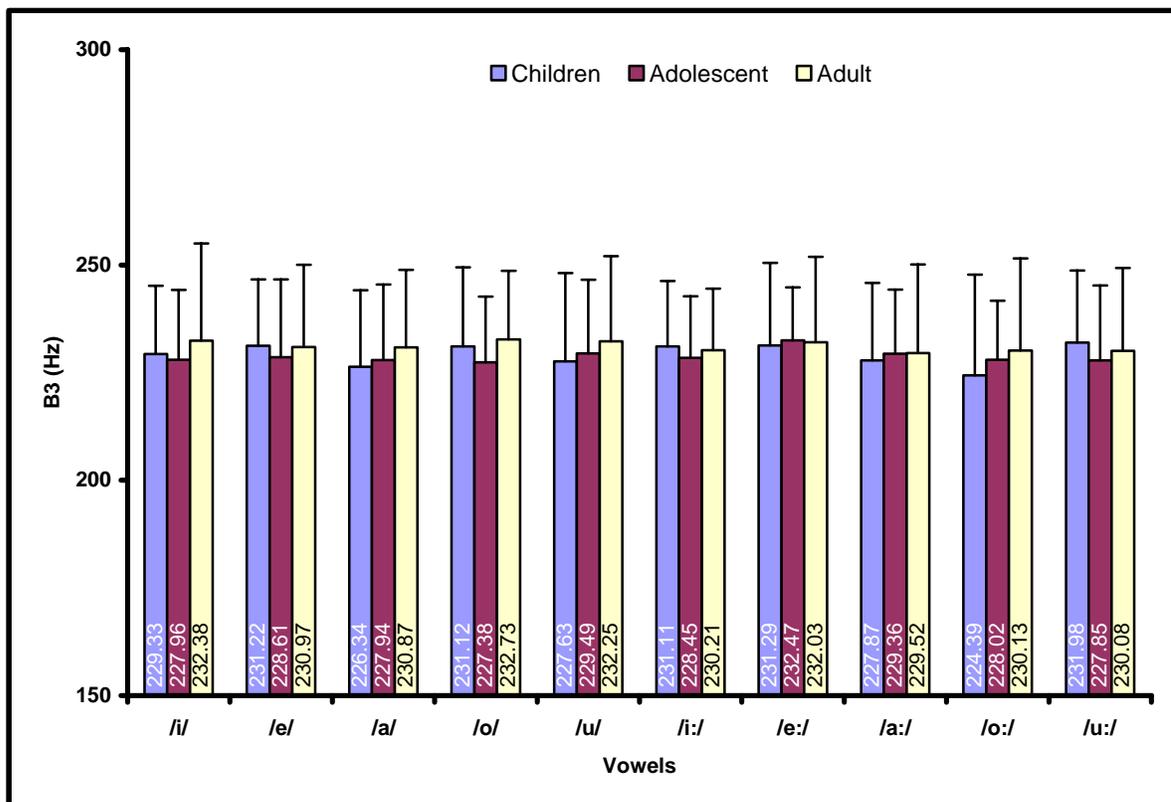


Figure 4.2.6.6: Mean B3 (Hz) and 1 SD bars across age groups

Females had larger B1 & B2 values when compared to males for majority of the vowels while males tend to have higher B3 values. In females, mean B1 was larger in vowels /i/ and /i:/, mean B2 in /a/ and /e:/ and mean B3 in /e/ and /e:/. In males, mean B1 was larger in /i/ and /i:/ and mean B2 and B3 in /u/ and /e:/. The mean B1 was lower for vowels /e/ and /e:/, B2 for /o/ and /u:/ and B3 for /u/ and /o:/ in females while, the mean B1 of vowels /a/ and /u:/, B2 of /i/ and /i:/ and B3 of /a/ and /o:/ were lower in males. On further scrutiny, it was found that mean bandwidth of all formants varied with increase in phonetic length. The mean (B1, B2 and B3) and 1 SD bars of all vowels are depicted in Figure 4.2.6.7, Figure 4.2.6.8 and Figure 4.2.6.9 respectively. The means, SD and 95% confidence interval for mean bandwidths, B1, B2 and B3 of all the vowels for the both gender groups are given in Appendix VIII g (Table 4.2.6.4), Appendix VIII h (Table 4.2.7.4) and Appendix VIII i (Table 4.2.8.4) respectively.

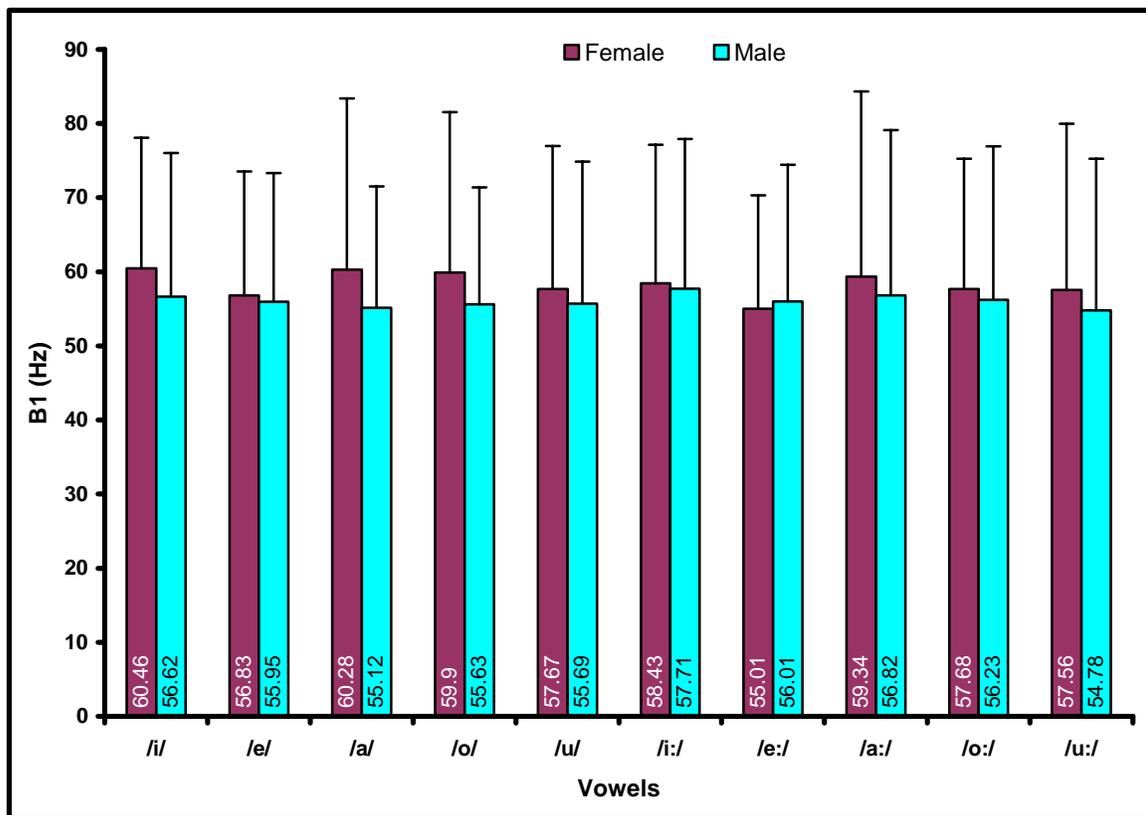


Figure 4.2.6.7: Mean B1 (Hz) and 1 SD bars across gender groups

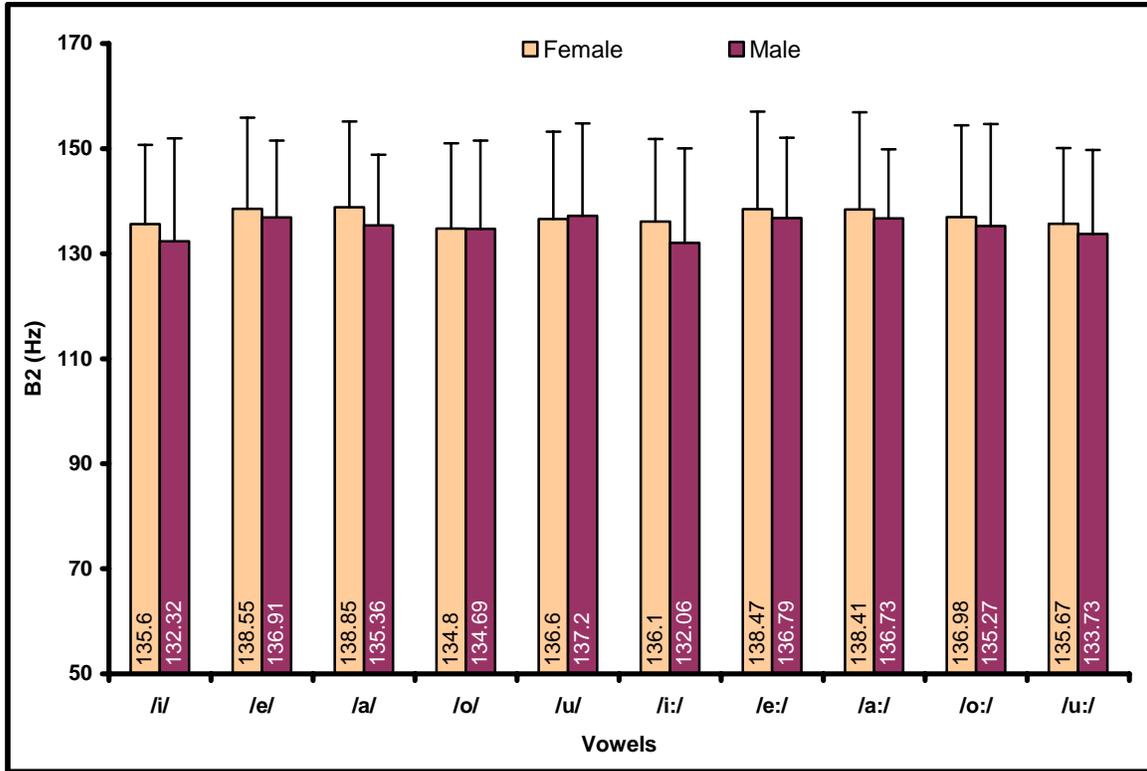


Figure 4.2.6.8: Mean B2 (Hz) and 1 SD bars across gender groups

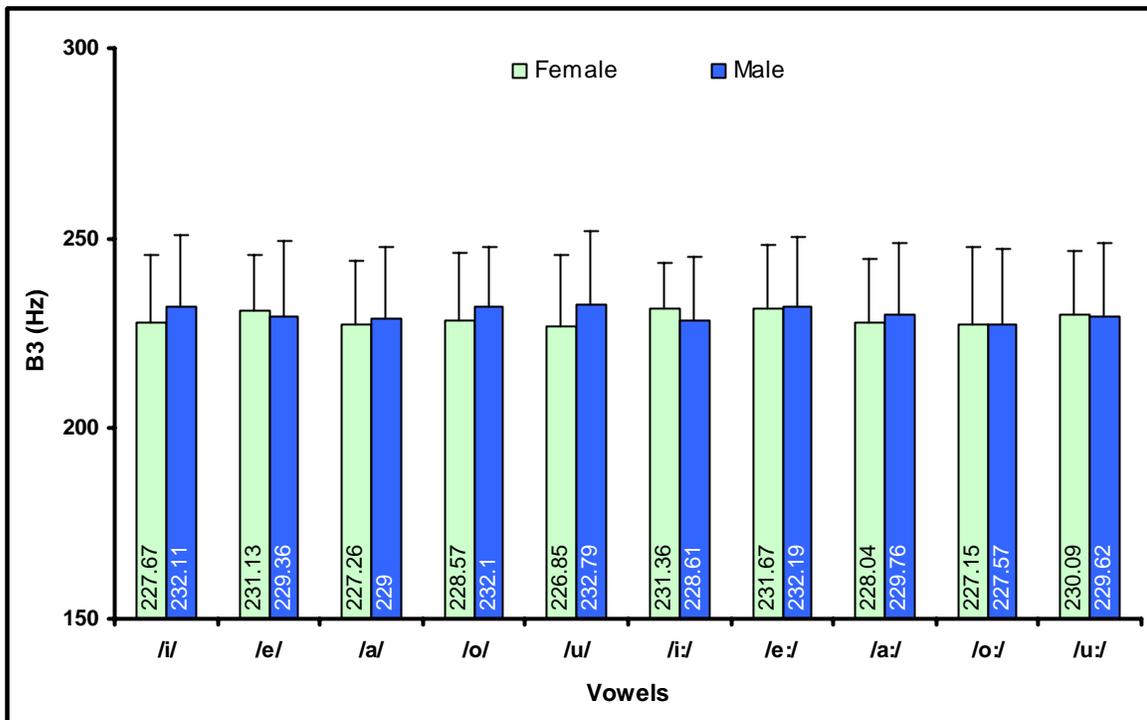


Figure 4.2.6.9: Mean B3 (Hz) and 1 SD bars across gender groups

From the data, it is observed that speakers from Coastal region had larger mean B1 followed by Rayalaseema and Telengana speakers for all vowels respectively. Further, it was observed that, Coastal speakers had larger mean B1 for vowels /o/ and /i:/ and lower for /a/ and /u:/; Rayalaseema speakers had larger mean B1 for vowels /a/ and /a:/ and smaller for /e/ and /e:/; Telengana speakers had larger mean B1 for vowels /i/ and /i:/ and smaller for /a/ and /a:/. Inspection of the data based on phonetic length did not reveal a consistent pattern as phonetic length varied. The mean B1 and 1 SD bars of all vowels across regional groups are depicted in Figure 4.2.6.10. The means, SD and 95% confidence interval for mean of all the vowels for all the three region groups are given in Appendix VIII g (Table 4.2.6.5).

From the data, it is observed that speakers from Rayalaseema region had larger mean B2 followed by Coastal and Telengana speakers for all vowels except short and long vowels /i/ & /o/ and long vowel /u:/. Further, it was observed that, Coastal speakers had larger mean B2 for vowels /e/ and /a:/ and lower for /i/ and /i:/; Rayalaseema speakers had larger mean B2 for vowels /e/ and /e:/ and smaller for /i/ and /o:/; Telengana speakers had larger mean B2 for vowels /a/ and /o:/ and smaller for /i/ and /e:/. On scrutiny of the data based on phonetic length, it was noted that no consistent pattern was observed as phonetic length varied. The mean B2 and 1 SD bars of all vowels across different regional groups are depicted in Figure 4.2.6.11. The means, SD and 95% confidence interval for mean of all the vowels for all the three region groups are given in Appendix VIII h (Table 4.2.7.5).

Regionally, speakers from Rayalaseema region had larger mean B3 followed by Telengana and Rayalaseema speakers for all vowels except /i/, /u/ and /u:/. Further, it was observed that Coastal speakers had larger mean B3 for vowels /o/ and /e:/ and lower for /i/ and /o:/; Rayalaseema speakers had larger mean B3 for vowels /u/ and /e:/ and smaller for /a/ and /o:/; Telengana speakers had larger mean B3 for vowels /i/ and /e:/ and smaller for /a/ and /o:/. On scrutiny of the data based on phonetic length, it was noted that, mid front vowel /e/ consistently had higher mean B3 with increase in phonetic length, while back mid vowel /o/ had lower mean B3. The mean B3 and 1 SD bars of all vowels across regional groups are depicted in Figure 4.2.6.12. The means, SD and 95% confidence

interval for mean of all the vowels for all the three region groups are given in Appendix VIII i (Table 4.2.8.5).

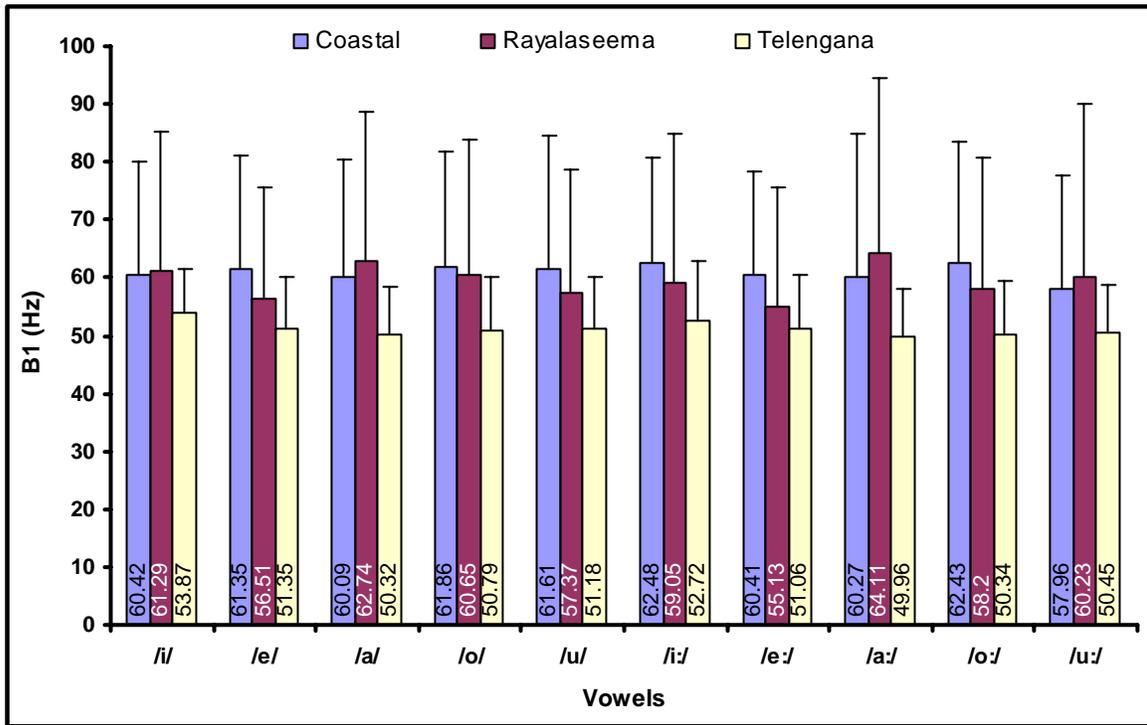


Figure 4.2.6.10: Mean B1 (Hz) and 1 SD bars across region groups

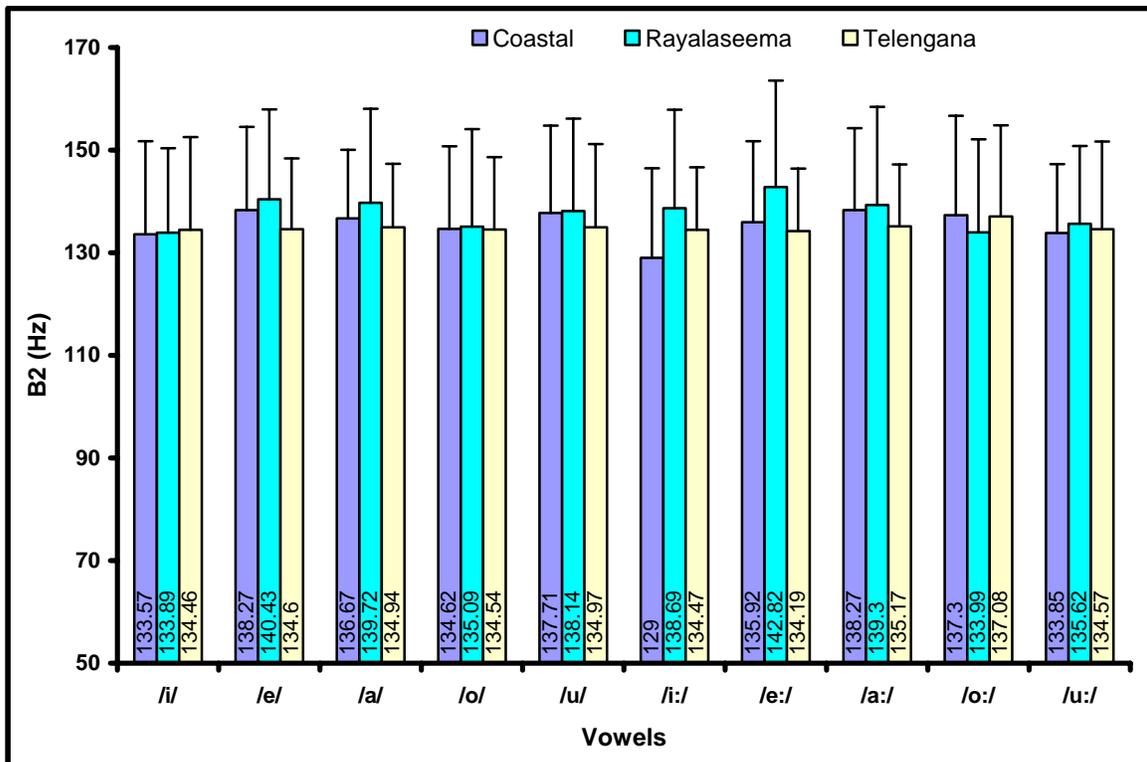


Figure 4.2.6.11: Mean B2 (Hz) and 1 SD bars across region groups

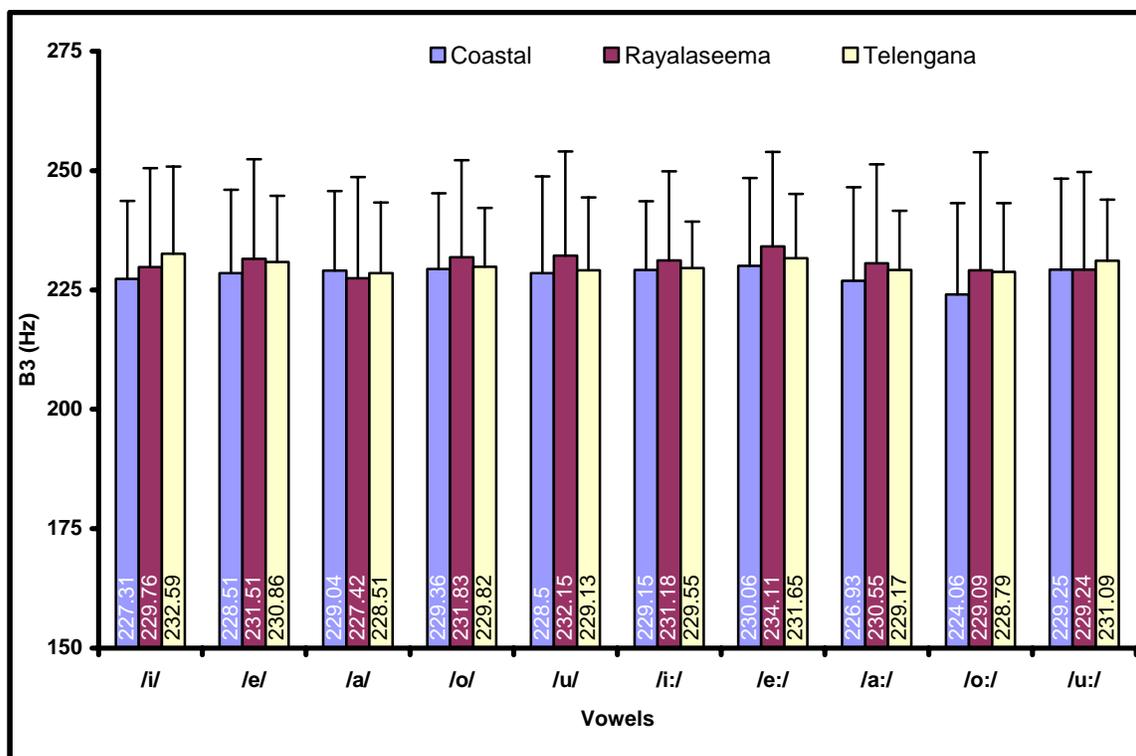


Figure 4.2.6.12: Mean B3 (Hz) and 1 SD bars across region groups

Manner and place of articulation of the preceding consonant had minimal effect on B1 of the following vowel in Telugu. Front vowels /e/, /i:/ and /e:/ have lower mean B1 when preceded by affricates as compared to nasal consonants. Most of the other vowels differed by 2 to 3 Hz in different manner and place of articulation. The mean B1 and 1 SD bars for short and long vowels across different manner and place of articulation of the preceding consonant are depicted in Figures 4.2.6.13a, 4.2.6.13b, 4.2.6.14a and 4.2.6.14b respectively and the values are given in Appendix VIII g (Tables 4.2.6.6 and 4.2.6.7 respectively).

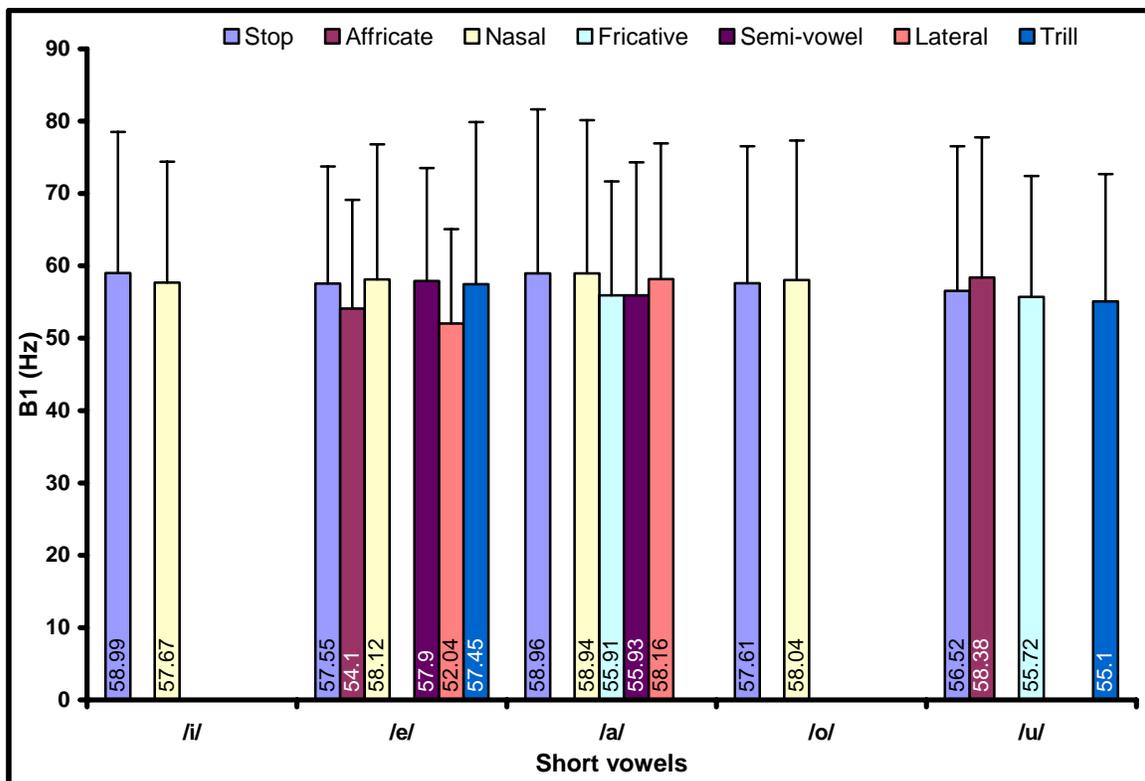


Figure 4.2.6.13a: Mean B1 (Hz) and 1 SD bars of short vowels preceded by different manner of articulation consonants

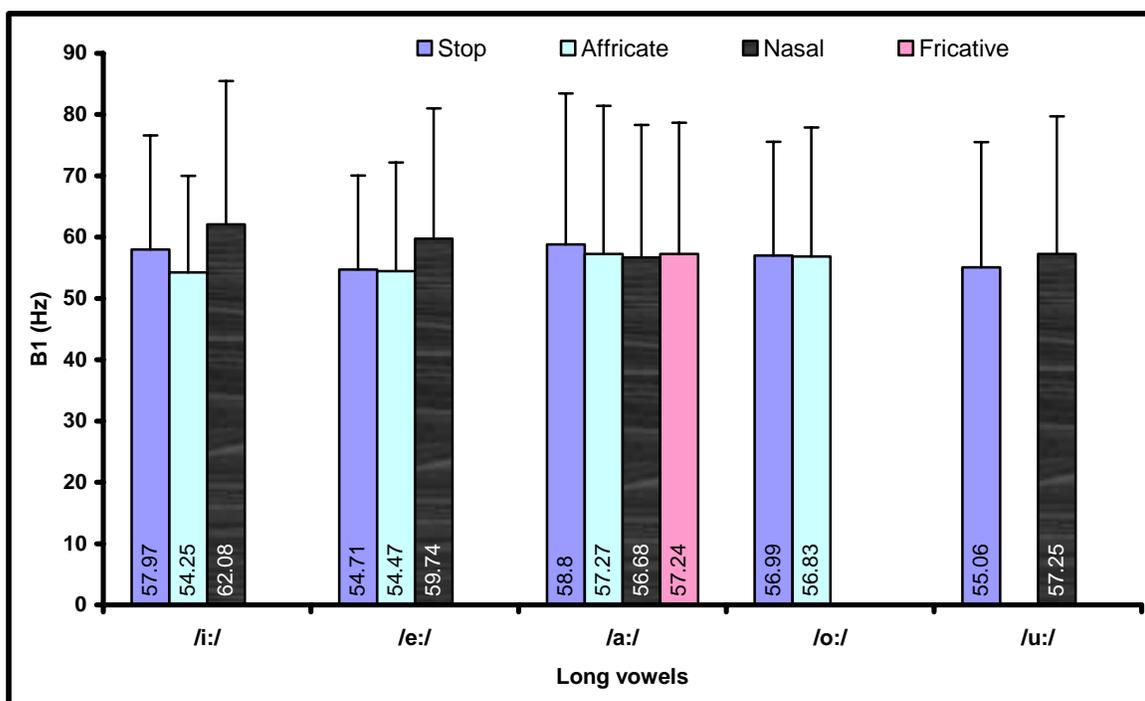


Figure 4.2.6.13b: Mean B1 (Hz) and 1 SD bars of long vowels preceded by different manner of articulation consonants

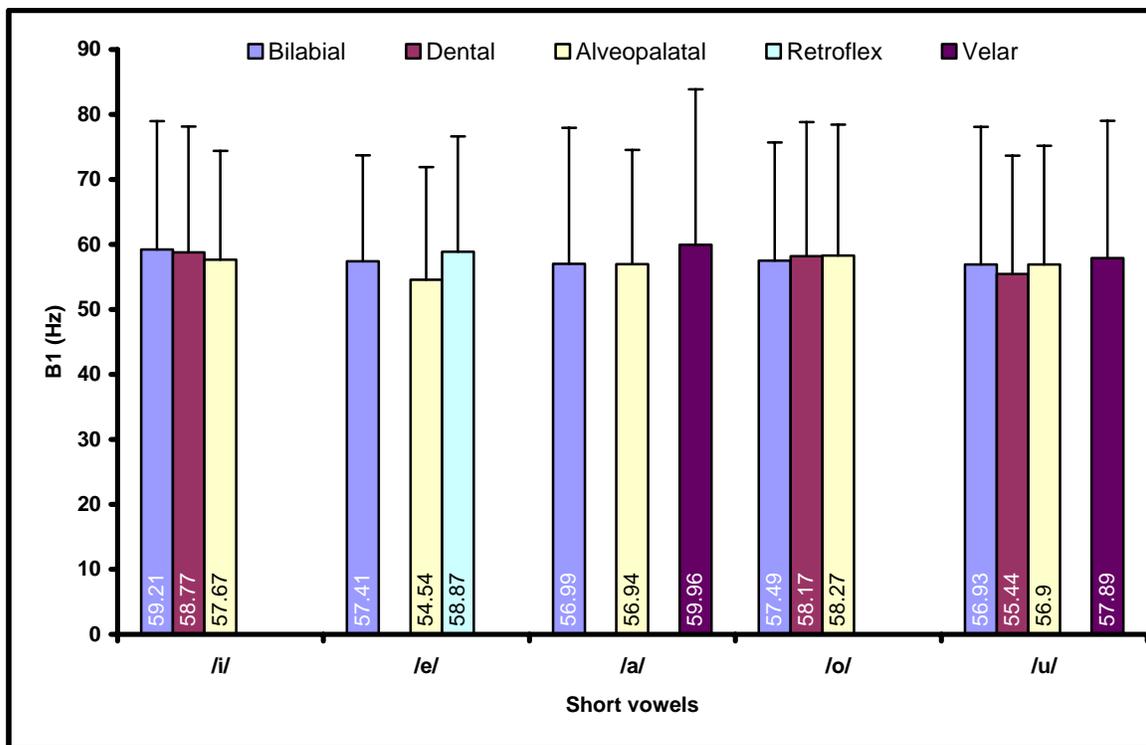


Figure 4.2.6.14a: Mean B1 (Hz) and 1 SD bars of short vowels preceded by different place of articulation consonants

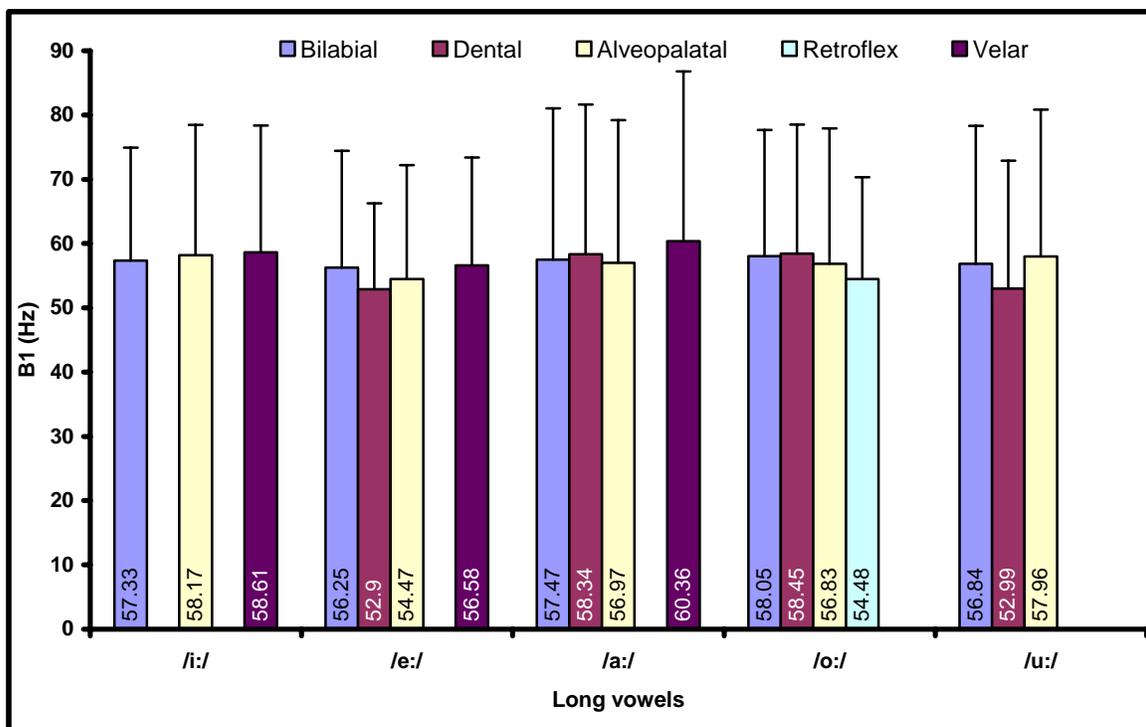


Figure 4.2.6.14b: Mean B1 (Hz) and 1 SD bars of long vowels preceded by different place of articulation consonants

Manner and place of articulation of the preceding consonant had minimal effect on B2 too of the following vowel in Telugu. Most of the vowels differed by 2 to 3 Hz in different manner and place of articulation except for /a/ and /u/. The mean B2 and 1 SD bars for short and long vowels across different manner and place of articulation of the preceding consonant are depicted in Figures 4.2.6.15a, 4.2.6.15b, 4.2.6.16a and 4.2.6.16b respectively. The means and SD of all the vowels preceded by different (manner and place of articulation) consonants are given in Appendix VIII h (Tables 4.2.7.6 and 4.2.7.7 respectively).

Manner and place of articulation of the preceding consonant had minimal effect also on B3 of the following vowel in Telugu. Vowel /a/ had lower mean B3 when preceded by fricatives as compared to semivowel consonants. Vowel /i:/ had lower mean B3 when preceded by velars as compared to bilabial consonants. Most of the other vowels differed by 2 to 3 Hz in different manner and place of articulation. The mean B3 and 1 SD bars for short and long vowels preceded by different (manner and place of articulation) consonants are depicted in Figures 4.2.6.17a, 4.2.6.17b, 4.2.6.18a and 4.2.6.18b respectively. The means and SD of all the vowels preceded by different (manner and place of articulation) consonants are given in Appendix VIII i (Tables 4.2.8.6 and 4.2.8.7 respectively).

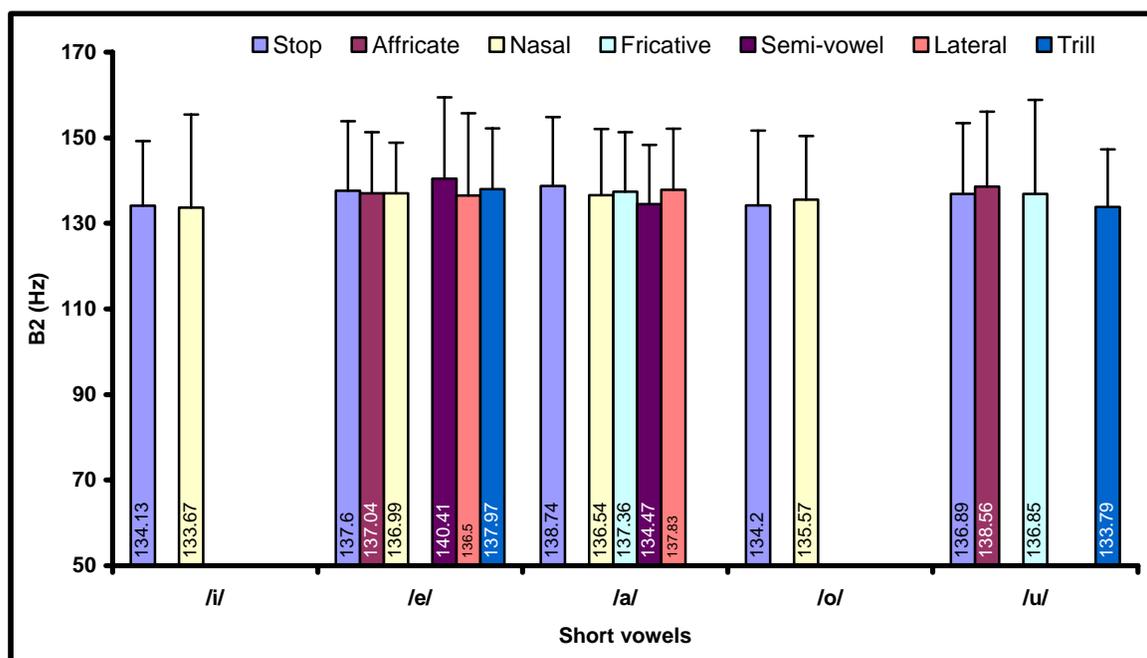


Figure 4.2.6.15a: Mean B2 (Hz) and 1 SD bars of short vowels preceded by different manner of articulation consonants

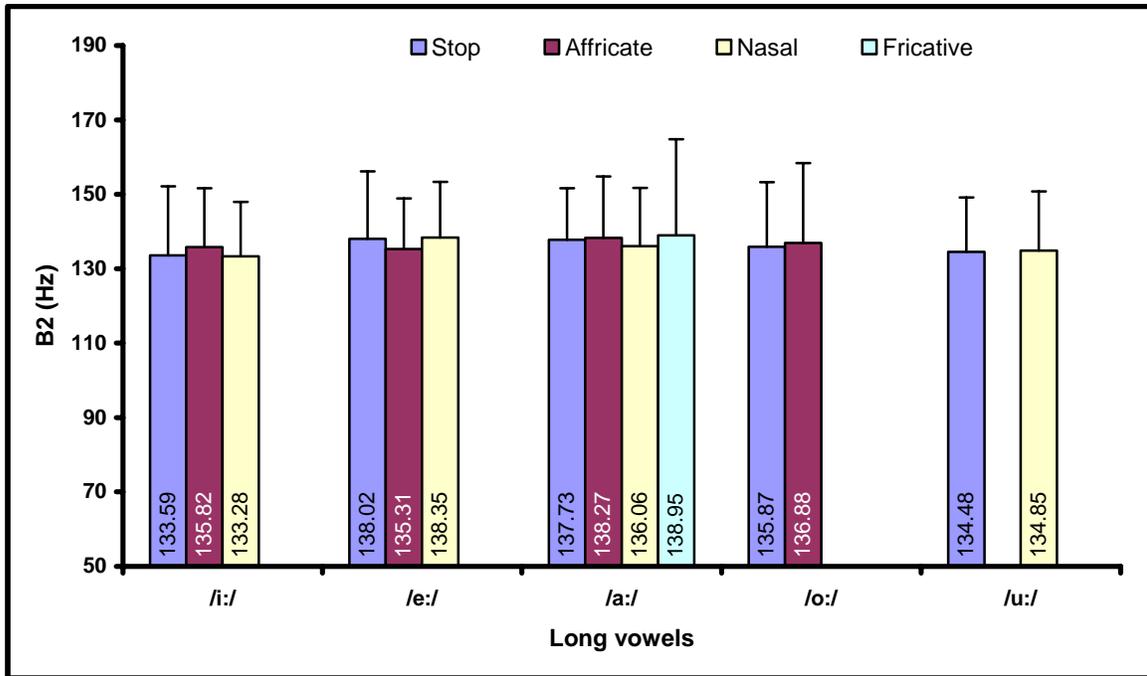


Figure 4.2.6.15b: Mean B2 (Hz) and 1 SD bars of long vowels preceded by different manner of articulation consonants

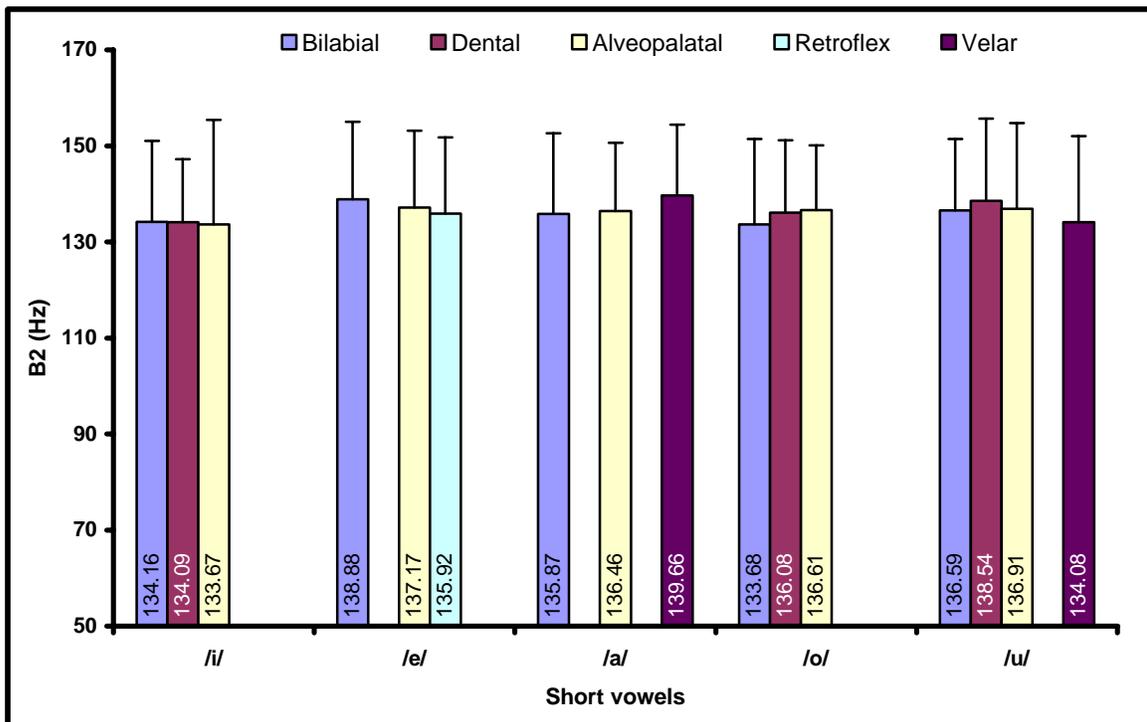


Figure 4.2.6.16a: Mean B2 (Hz) and 1 SD bars of short vowels preceded by different place of articulation consonants

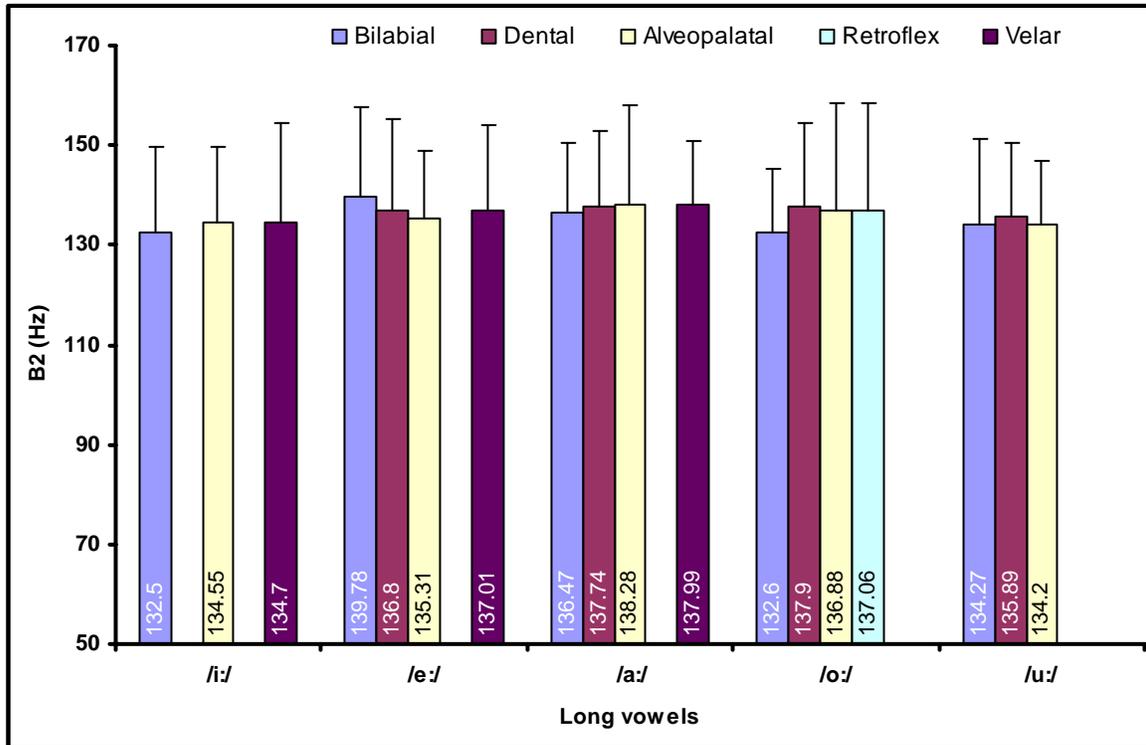


Figure 4.2.6.16b: Mean B2 (Hz) and 1 SD bars of long vowels preceded by different place of articulation consonants

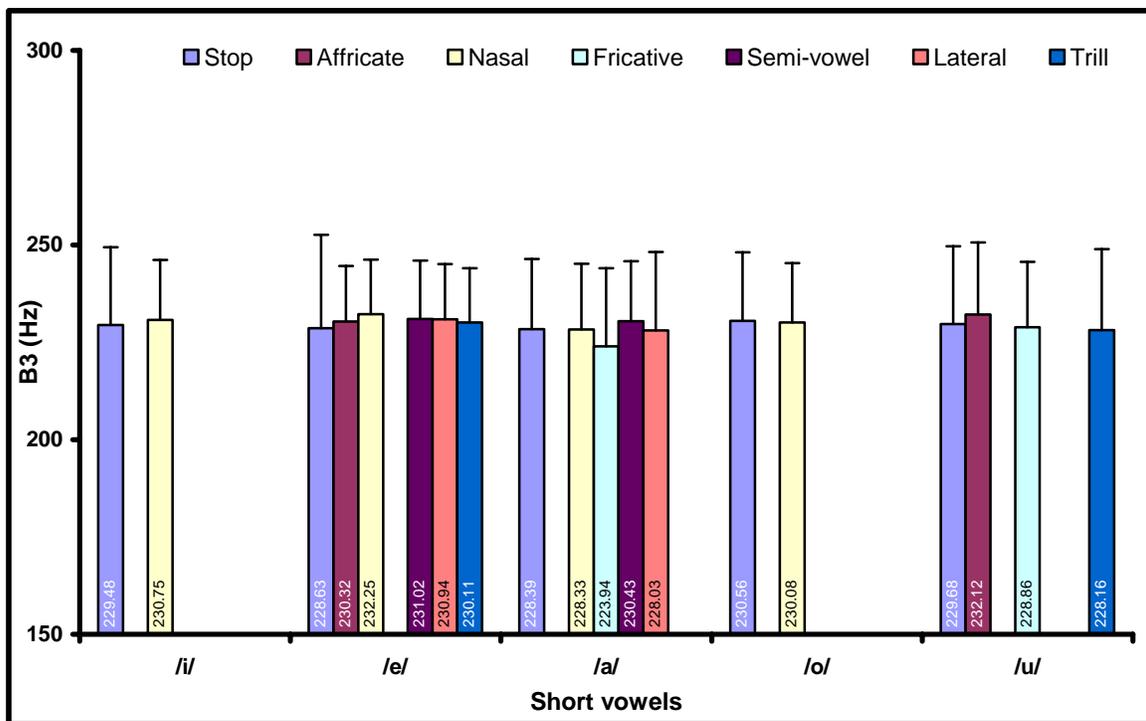


Figure 4.2.6.17a: Mean B3 (Hz) and 1 SD bars of short vowels preceded by different manner of articulation consonants

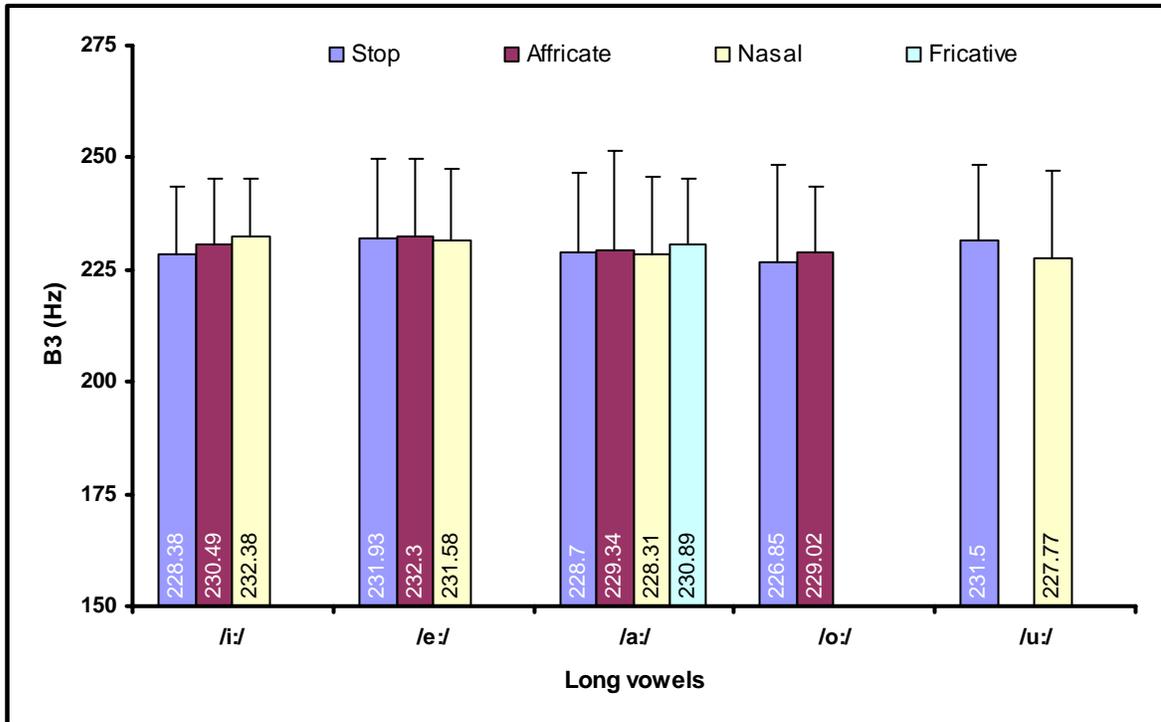


Figure 4.2.6.17b: Mean B3 (Hz) and 1 SD bars of long vowels preceded by different manner of articulation consonants

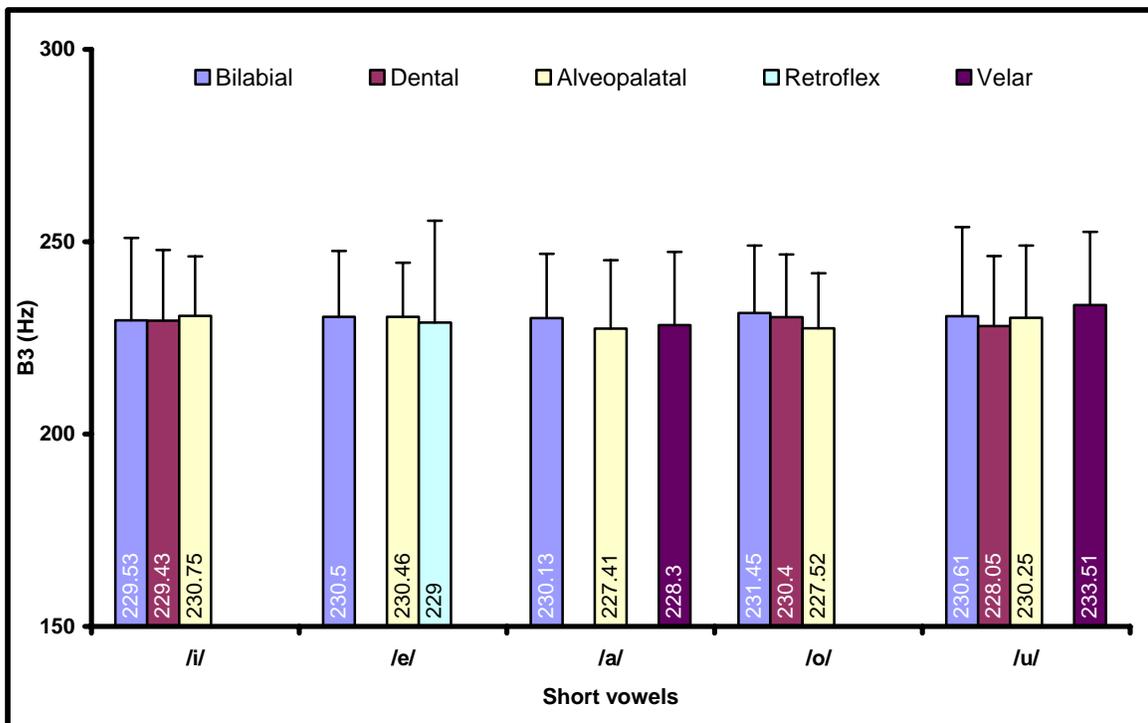


Figure 4.2.6.18a: Mean B3 (Hz) and 1 SD bars of short vowels preceded by different place of articulation consonants

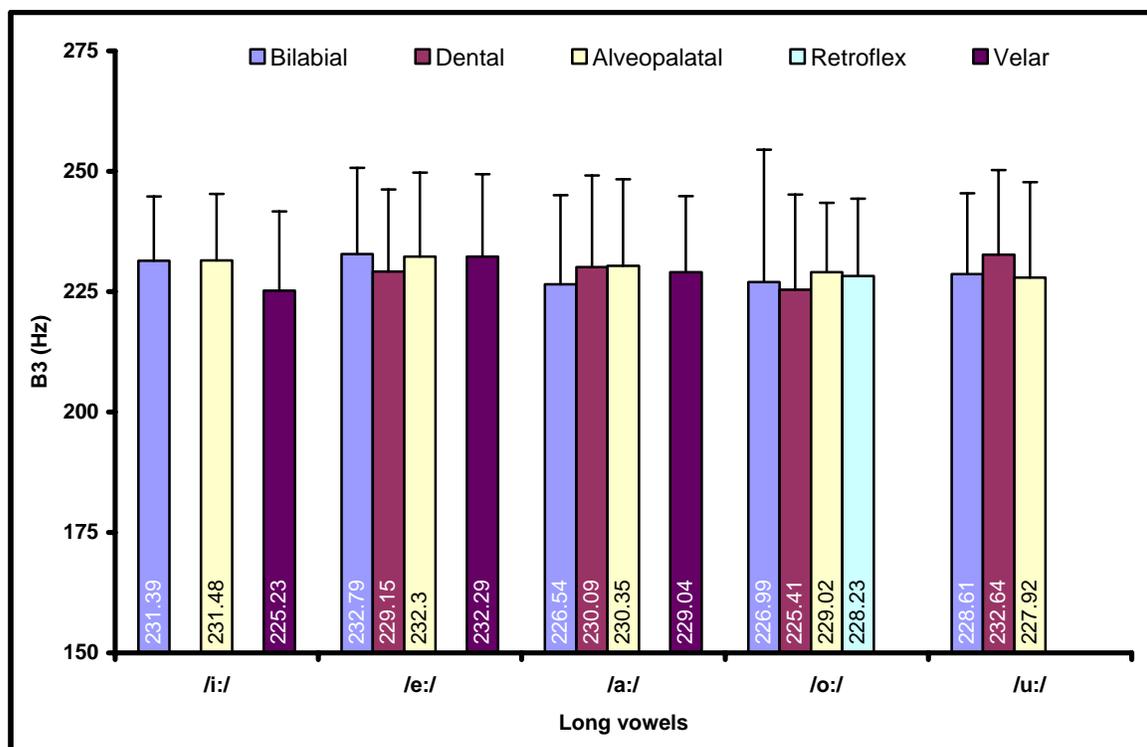


Figure 4.2.6.18b: Mean B3 (Hz) and 1 SD bars of long vowels preceded by different place of articulation consonants

From the data of the current study, it is observed that voicing feature of the consonant has minimal influence on B1 and varies between the short and long vowels. Except for vowels /a/, /o:/ and /u:/, B1 varied less than 2 Hz in different preceding voicing feature of the consonant. The mean B1 and 1 SD bars for all vowels across voicing feature of the preceding consonant are depicted in Figure 4.2.6.19 and values are given in Appendix VIII g (Table 4.2.6.8).

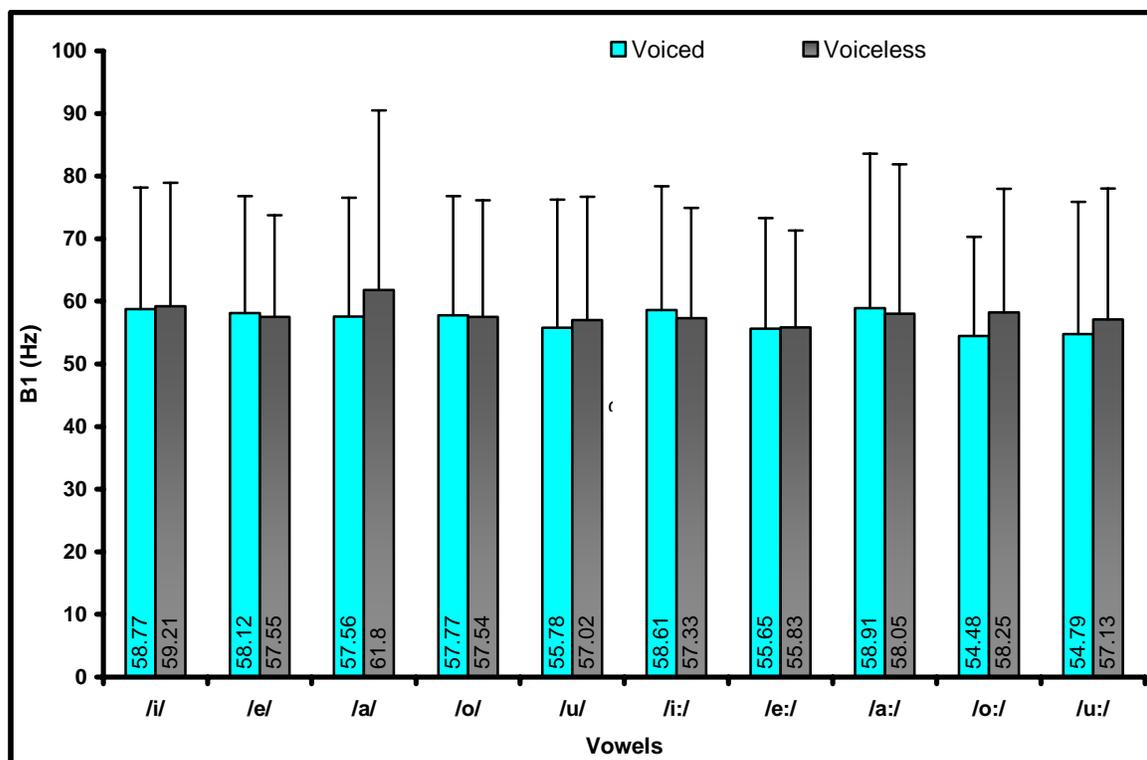


Figure 4.2.6.19: Mean B1 (Hz) and 1 SD bars of vowels preceded by different voicing feature of consonants

Voicing feature of the consonant has minimal influence also on B2 and varies between the short and long vowels. Vowels when preceded by voiceless consonants seem to have slightly higher B2. Most of the vowels had a variation of less than 2 Hz in different preceding voicing feature of the consonant. The mean B2 and 1 SD bars for all vowels across voicing feature of the preceding consonant are depicted in Figure 4.2.6.20 and the values are given in Appendix VIII h (Table 4.2.7.8).

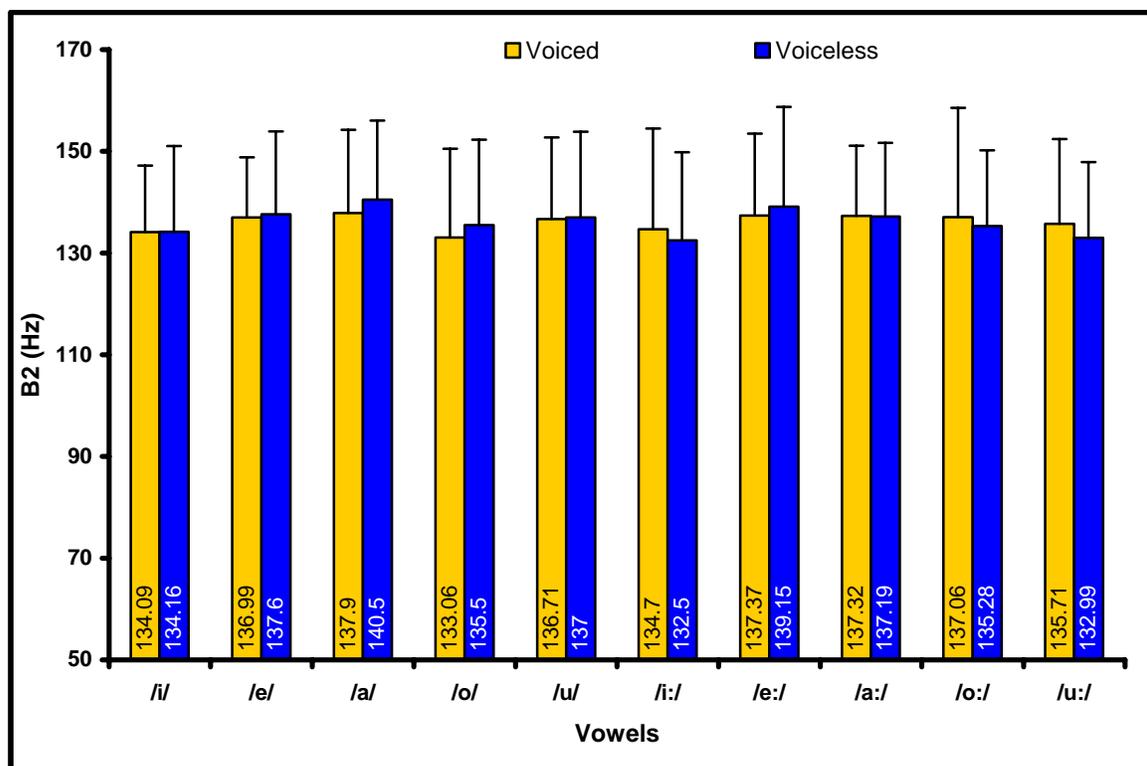


Figure 4.2.6.20: Mean B2 (Hz) and 1 SD bars of vowels preceded by different voicing feature of consonants

B3 is also minimally influenced by voicing feature of the preceding consonant and varies between the short and long vowels. Vowels /e/, /a/, /o/, /o:/ and /u:/ had decreased mean B3 when preceded by voiceless consonants. The mean B3 varied less than 2 Hz in different preceding voicing feature of the consonant in most of the vowels. The mean B3 and 1 SD bars for all vowels across voicing feature of the preceding consonant are depicted in Figure 4.2.6.21 and the values are given in Appendix VIII i (Table 4.2.8.8).

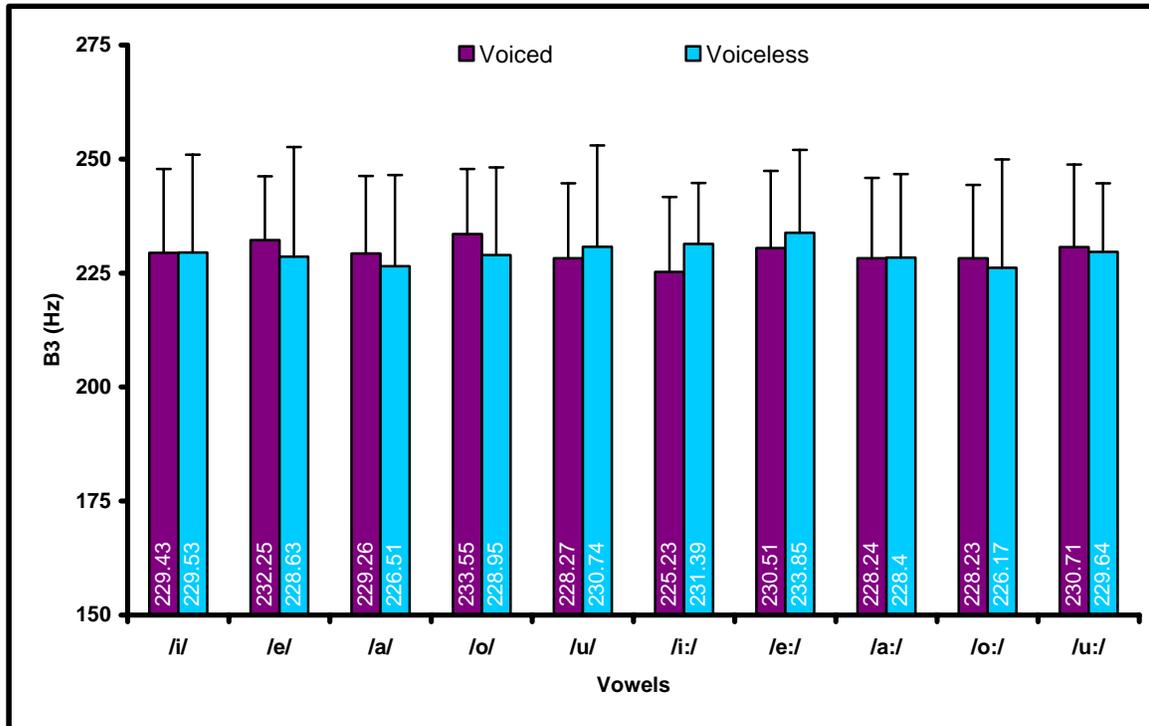


Figure 4.2.6.21: Mean B3 (Hz) and 1 SD bars of vowels preceded by different voicing feature of consonants

Questions of age, gender and region having any association and it's kind with B1, B2 and B3 and of which vowels studied have significant difference in bandwidths among the age, gender and region groups were addressed by Random intercept model 3 (as described in the method) for a better understanding of any association between bandwidths (B1, B2 & B3) and age, gender and region groups. The results for B1, B2 and B3 are given in Tables 4.2.6.a, 4.2.6.b and 4.2.6.c respectively.

Table 4.2.6.a: Statistical analysis using random intercept model for B1

N=4320				
Covariates	Estimate	Std. Error	Wald ratio	P value*
Constant (β_{0ij})	68.94	1.07	64.43	< 0.01
Age (β_{1ijk})	-4.89	1.01	-4.84	< 0.01
Gender (β_{2ijk})	0.52	0.13	4	< 0.01
Region (β_{3ijk})	-4.86	0.36	-13.5	< 0.01
Variance components				
Random Error:	374.95			
Consonant Level:	0.00			
Individual level:	0.00			
Total variation:	374.95			
$-2*\log likelihood(IGLS) = 37416.36$				
<i>*significant at 0.05 level</i>				

Model: Bandwidth of F1 (B1) = 68.94 – 4.89age + 0.51gender – 4.86region

Table 4.2.6.b: Statistical analysis using random intercept model for B2

N=4320				
Covariates	Estimate	Std. Error	Wald ratio	P value*
Constant (β_{0ij})	137.59	0.93	147.95	< 0.01
Age (β_{1ijk})	2.75	0.86	3.19	< 0.01
Gender (β_{2ijk})	-0.34	0.11	-3.09	< 0.01
Region (β_{3ijk})	-0.74	0.31	-2.39	0.01
Variance components				
Random Error:	269.19			
Consonant Level:	2.09			
Individual level:	0.13			
Total variation:	271.41			
$-2*\log likelihood(IGLS) = 35594.57$				
<i>*significant at 0.05 level</i>				

Model: Bandwidth of F2 (B2) = 137.59 + 2.75age – 0.34gender – 0.74region

Table 4.2.6.c: Statistical analysis using random intercept model for B3

N=4320				
Covariates	Estimate	Std. Error	Wald ratio	P value*
Constant (β_{0ij})	226.00	1.08	209.26	< 0.01
Age (β_{1ijk})	3.21	0.99	3.24	< 0.01
Gender (β_{2ijk})	-0.29	0.13	-2.23	0.01
Region (β_{3ijk})	0.78	0.36	2.17	0.02
Variance components				
Random Error:	316.91			
Consonant Level:	0.39			
Individual level:	0.02			
Total variation:	317.32			
$-2*\log likelihood(IGLS) = 31227.03$				
<i>*significant at 0.05 level</i>				

Model: Bandwidth of F3 (B3) = 226 + 3.21age – 0.29gender + 0.78region

From Tables 4.2.6.a, 4.2.6.b and 4.2.6.c it could be observed that, there is a significant association between bandwidths (B1, B2, and B3) and age, gender and region. Further, region has negative association with B1, while for B2, it's for gender and region and B3, only gender. It may also be noted that, preceding consonant and individual variations were not affecting B1, suggesting that, only vowels caused variations. Age, gender and region seem to have significant association with B1; however, interpreting this variation or differences noted between the groups for clinical utility may not be significant at this juncture.

Further to study which of the vowels differed significantly among the age and region groups, Tukey HSD was employed and the results suggested that bandwidths (B1, B2 and B3) of all vowels showed statistically no significant differences between children, adolescents and adults (Tables 4.2.6.d; 4.2.6.e and 4.2.6.f for B1, B2 and B3 respectively) except for B1 of vowel /e/ & /o/ between children – adult and B2 of vowel /a:/ between children - adolescents .

Table 4.2.6.d: Post hoc results for each vowel between age groups for B1

N=4320

Vowel	(I) Age Group	(J) Age Group	Mean Difference (I-J)	Sig.
/i/	Children	Adolescent	6.37	0.100
	Children	Adult	5.35	0.195
	Adolescent	Adult	-1.01	0.942
/e/	Children	Adolescent	.29	0.986
	Children	Adult	-.94	0.869
	Adolescent	Adult	-1.24	0.784
/a/	Children	Adolescent	4.62	0.065
	Children	Adult	4.71	0.059
	Adolescent	Adult	.09	0.999
/o/	Children	Adolescent	5.74	0.054
	Children	Adult	1.83	0.739
	Adolescent	Adult	-3.92	0.250
/u/	Children	Adolescent	3.26	0.191
	Children	Adult	.02	1.000
	Adolescent	Adult	-3.25	0.193
/i:/	Children	Adolescent	4.79	0.205
	Children	Adult	3.84	0.358
	Adolescent	Adult	-.95	0.939
/e:/	Children	Adolescent	1.00	0.872
	Children	Adult	-.73	0.930
	Adolescent	Adult	-1.73	0.663
/a:/	Children	Adolescent	7.16(*)	0.003
	Children	Adult	4.34	0.111
	Adolescent	Adult	-2.82	0.393
/o:/	Children	Adolescent	3.97	0.325
	Children	Adult	-.49	0.983
	Adolescent	Adult	-4.47	0.242
/u:/	Children	Adolescent	5.40	0.195
	Children	Adult	6.52	0.095
	Adolescent	Adult	1.12	0.931

*significant at 0.05 level

Table 4.2.6.e: Post hoc results for each vowel between age groups for B2

N=4320

Vowel	(I) Age Group	(J) Age Group	Mean Difference (I-J)	Sig.
/i/	Children	Adolescent	-1.53	0.862
	Children	Adult	4.34	0.304
	Adolescent	Adult	5.87	0.112
/e/	Children	Adolescent	3.60	0.104
	Children	Adult	3.82	0.077
	Adolescent	Adult	.22	0.991
/a/	Children	Adolescent	-.24	0.986
	Children	Adult	-1.15	0.740
	Adolescent	Adult	-.91	0.829
/o/	Children	Adolescent	-.81	0.924
	Children	Adult	-4.17	0.130
	Adolescent	Adult	-3.36	0.263
/u/	Children	Adolescent	-2.52	0.298
	Children	Adult	-2.86	0.209
	Adolescent	Adult	-.34	0.978
/i:/	Children	Adolescent	4.37	0.175
	Children	Adult	4.66	0.137
	Adolescent	Adult	.29	0.992
/e:/	Children	Adolescent	3.52	0.185
	Children	Adult	5.51(*)	0.017
	Adolescent	Adult	1.98	0.580
/a:/	Children	Adolescent	-1.42	0.600
	Children	Adult	-2.24	0.279
	Adolescent	Adult	-.83	0.840
/o:/	Children	Adolescent	-3.46	0.393
	Children	Adult	-7.60(*)	0.013
	Adolescent	Adult	-4.13	0.267
/u:/	Children	Adolescent	-1.02	0.894
	Children	Adult	-4.37	0.135
	Adolescent	Adult	-3.35	0.294

*significant at 0.05 level

Table 4.2.6.f: Post hoc results for each vowel between age groups for B3

N=4320

Vowel	(I) Age Group	(J) Age Group	Mean Difference (I-J)	Sig.
/i/	Children	Adolescent	1.37	0.902
	Children	Adult	-3.04	0.602
	Adolescent	Adult	-4.42	0.346
/e/	Children	Adolescent	2.62	0.390
	Children	Adult	0.25	0.992
	Adolescent	Adult	-2.37	0.458
/a/	Children	Adolescent	-1.60	0.684
	Children	Adult	-4.53	0.054
	Adolescent	Adult	-2.92	0.302
/o/	Children	Adolescent	3.74	0.280
	Children	Adult	-1.61	0.791
	Adolescent	Adult	-5.35	0.073
/u/	Children	Adolescent	-1.85	0.723
	Children	Adult	-4.62	0.101
	Adolescent	Adult	-2.76	0.453
/i:/	Children	Adolescent	2.66	0.440
	Children	Adult	0.90	0.909
	Adolescent	Adult	-1.76	0.697
/e:/	Children	Adolescent	-1.18	0.840
	Children	Adult	-.74	0.934
	Adolescent	Adult	0.44	0.975
/a:/	Children	Adolescent	-1.49	0.660
	Children	Adult	-1.65	0.604
	Adolescent	Adult	-.16	0.995
/o:/	Children	Adolescent	-3.62	0.460
	Children	Adult	-5.74	0.156
	Adolescent	Adult	-2.12	0.782
/u:/	Children	Adolescent	4.13	0.449
	Children	Adult	1.90	0.842
	Adolescent	Adult	-2.24	0.761

*Significant at 0.05 level

Within the region groups, all vowels had statistically no significant difference in B3 between the three region groups; however, B1 had significant difference for all vowels except for /i/ between Coastal and Telengana speakers and B2 for vowels /e/, /a/, /e:/ and /a:/ between Rayalaseema and Telengana speakers (Tables 4.2.6.g, 4.2.6.h and 4.2.6.i for B1, B2 and B3 respectively).

Table 4.2.6.g: Post hoc results for each vowel between region groups for B1

N=4320				
Vowel	(I) Age Group	(J) Age Group	Mean Difference (I-J)	Sig.
/i/	Coastal	Rayalaseema	-.88	0.956
	Coastal	Telengana	6.54	0.087
	Rayalaseema	Telengana	7.42(*)	0.044
/e/	Coastal	Rayalaseema	4.83(*)	0.022
	Coastal	Telengana	10.00(*)	< 0.01
	Rayalaseema	Telengana	5.17(*)	0.012
/a/	Coastal	Rayalaseema	-2.65	0.383
	Coastal	Telengana	9.77(*)	< 0.01
	Rayalaseema	Telengana	12.42(*)	< 0.01
/o/	Coastal	Rayalaseema	1.21	0.869
	Coastal	Telengana	11.07(*)	< 0.01
	Rayalaseema	Telengana	9.86(*)	< 0.01
/u/	Coastal	Rayalaseema	4.24	0.056
	Coastal	Telengana	10.43(*)	< 0.01
	Rayalaseema	Telengana	6.19(*)	0.002
/i:/	Coastal	Rayalaseema	3.44	0.428
	Coastal	Telengana	9.76(*)	0.001
	Rayalaseema	Telengana	6.33	0.058
/e:/	Coastal	Rayalaseema	5.28(*)	0.020
	Coastal	Telengana	9.35(*)	< 0.01
	Rayalaseema	Telengana	4.07	0.095
/a:/	Coastal	Rayalaseema	-3.84	0.164
	Coastal	Telengana	10.31(*)	< 0.01
	Rayalaseema	Telengana	14.15(*)	< 0.01
/o:/	Coastal	Rayalaseema	4.22	0.262
	Coastal	Telengana	12.08(*)	< 0.01
	Rayalaseema	Telengana	7.86(*)	0.010
/u:/	Coastal	Rayalaseema	-2.27	0.745
	Coastal	Telengana	7.51(*)	0.041
	Rayalaseema	Telengana	9.78(*)	0.005

*Significant at 0.05 level

Table 4.2.6.h: Post hoc results for each vowel between region groups for B2

N=4320

Vowel	(I) Age Group	(J) Age Group	Mean Difference (I-J)	Sig.
/i/	Coastal	Rayalaseema	-0.32	0.994
	Coastal	Telengana	-0.89	0.951
	Rayalaseema	Telengana	-0.57	0.980
/e/	Coastal	Rayalaseema	-2.17	0.432
	Coastal	Telengana	3.67	0.089
	Rayalaseema	Telengana	5.83(*)	0.003
/a/	Coastal	Rayalaseema	-3.04	0.120
	Coastal	Telengana	1.74	0.498
	Rayalaseema	Telengana	4.78(*)	0.005
/o/	Coastal	Rayalaseema	-0.47	0.974
	Coastal	Telengana	0.09	0.999
	Rayalaseema	Telengana	0.56	0.964
/u/	Coastal	Rayalaseema	-0.42	0.967
	Coastal	Telengana	2.74	0.232
	Rayalaseema	Telengana	3.16	0.150
/i:/	Coastal	Rayalaseema	-9.69(*)	< 0.01
	Coastal	Telengana	-5.47	0.059
	Rayalaseema	Telengana	4.22	0.182
/e:/	Coastal	Rayalaseema	-6.90(*)	0.002
	Coastal	Telengana	1.73	0.652
	Rayalaseema	Telengana	8.63(*)	< 0.01
/a:/	Coastal	Rayalaseema	-1.03	0.763
	Coastal	Telengana	3.11	0.085
	Rayalaseema	Telengana	4.14(*)	0.013
/o:/	Coastal	Rayalaseema	3.30	0.439
	Coastal	Telengana	0.22	0.996
	Rayalaseema	Telengana	-3.08	0.484
/u:/	Coastal	Rayalaseema	-1.77	0.720
	Coastal	Telengana	-0.72	0.945
	Rayalaseema	Telengana	1.04	0.891

*Significant at 0.05 level

Table 4.2.6.i: Post hoc results for each vowel between region groups for B3

N=4320

Vowel	(I) Age Group	(J) Age Group	Mean Difference (I-J)	Sig.
/i/	Coastal	Rayalaseema	-2.45	0.723
	Coastal	Telengana	-5.27	0.215
	Rayalaseema	Telengana	-2.82	0.648
/e/	Coastal	Rayalaseema	-3.00	0.287
	Coastal	Telengana	-2.35	0.463
	Rayalaseema	Telengana	0.65	0.943
/a/	Coastal	Rayalaseema	1.62	0.688
	Coastal	Telengana	0.53	0.961
	Rayalaseema	Telengana	-1.09	0.841
/o/	Coastal	Rayalaseema	-2.47	0.573
	Coastal	Telengana	-0.46	0.982
	Rayalaseema	Telengana	2.01	0.691
/u/	Coastal	Rayalaseema	-3.66	0.259
	Coastal	Telengana	-0.64	0.960
	Rayalaseema	Telengana	3.02	0.380
/i:/	Coastal	Rayalaseema	-2.03	0.625
	Coastal	Telengana	-0.40	0.981
	Rayalaseema	Telengana	1.64	0.734
/e:/	Coastal	Rayalaseema	-4.04	0.130
	Coastal	Telengana	-1.58	0.727
	Rayalaseema	Telengana	2.46	0.463
/a:/	Coastal	Rayalaseema	-3.62	0.094
	Coastal	Telengana	-2.24	0.394
	Rayalaseema	Telengana	1.38	0.699
/o:/	Coastal	Rayalaseema	-4.98	0.243
	Coastal	Telengana	-4.73	0.291
	Rayalaseema	Telengana	0.25	0.996
/u:/	Coastal	Rayalaseema	0.01	1.000
	Coastal	Telengana	-1.84	.850
	Rayalaseema	Telengana	-1.85	0.843

* Significant at 0.05 level

Student's *t*-test was done to study which of the vowels significantly differed with the gender groups. The results are given in Table 4.2.6.j.

Table 4.2.6.j: Student's *t*-test results for all vowels between two gender groups

Vowel	B1			B2			B3		
	Mean Dif. [#]	df	t	Mean Dif. [#]	df	t	Mean Dif. [#]	df	t
/i/	3.85	213	1.521	3.28	210	1.364	-4.44	203	-1.722
/e/	.88	500	0.579	1.64	494	1.141	1.77	467	1.090
/a/	5.16	514	3.077*	3.50	564	2.781*	-2.02	496	-1.264
/o/	4.27	326	2.127*	0.11	349	0.062	-3.53	272	-1.762
/u/	1.98	628	1.292	-0.60	606	-0.433	-5.95	418	-3.181*
/i:/	.72	285	0.313	4.05	285	2.034*	2.75	269	1.554
/e:/	-.99	427	-0.607	1.69	426	1.026	-.52	417	-.303
/a:/	2.52	711	1.421	1.68	712	1.401	-1.72	647	-1.221
/o:/	1.45	284	0.638	1.71	280	0.779	-.42	248	-.164
/u:/	2.78	280	1.090	1.94	271	1.050	.48	175	.174

*Significant at 0.05 level

[#]Mean Dif: Mean Difference

From Table 4.2.6.j, it is observed that, all vowels had statistically no significant difference in bandwidths between females and males except for vowel /a/ in B1 & B2; /o/ in B1; /u/ in B3 and /i:/ in B2.

From the results, it could be inferred that, there is a significant association between age, gender and region and bandwidths (B1, B2 and B3). Individual vowel variations within the region and gender groups are not significant; but tend to be significantly influenced with consonant and individual level variations.

Bandwidth increase with increase in formant frequency as noted in the current study has been reported (Dunn, 1961; Yosida, Kazama & Toyama, 2001; Yasojima, Takahashi & Tohyama, 2006). The changes noticed in bandwidths of the formant frequencies as the age progressed, could be attributed to the changes in vocal tract acoustics. Although bandwidth has a significant association with region, individual vowels did not show much significant differences. The significant association between bandwidth

and region noted from multilevel analysis could be due to the preceding consonant and individual level influences.

Research on bandwidth did support the importance of bandwidth in speech intelligibility in normals and hearing impaired (Klatt, 1982; John, Margaret, Timothy & Laura, 1997; Cheveigne, 1999), but not much data is available on the variations of bandwidth across different linguistic and age groups. This could probably be due to the differences and various procedures adopted in the estimation of bandwidths by the investigators. The data obtained on bandwidths in the current study could be considered as an add on information to the existing knowledge.

4.2.6.2 Summary of Bandwidths (B1, B2 & B3)

In the current study, bandwidths (B1, B2 and B3) of the formants revealed:

- Very minimal variations among the vowels.
- The front high short and long vowels /i/ and /i:/ had larger bandwidth for F1 compared to front mid vowel /e/. The front mid short and long vowels /e/ and /e:/ had larger bandwidth for F2 as compared to front high vowels /i/ and /i:/. The front high short and long vowels /o/ and /o:/ had larger bandwidth for F3 as compared to vowels /a/ and /a/.
- Central vowels had larger bandwidth for F1 and F2 while front vowels had larger bandwidth for F3.
- Bandwidths B1 and B2 varied with increase in the phonetic length of the vowel.
- Bandwidths (B1, B2 and B3) varied across the age group for all vowels. In children, vowels /i/ and /a:/ had larger B1 and vowels /e/ and /e:/ had small B1; vowels /e/ and /e:/ had larger B2 and vowels /o/ and /o:/ had small B2; vowels /e/ and /u:/ had larger B3 and vowels /a/ and /a:/ had small B3. In adolescents, /a/ and /i:/ had larger B1 while /u/ and /u:/ had lower values; vowels /u/ and /a:/ had larger B2 while it was lower for /o/ and /o:/; vowels /u/ and /e:/ had larger B3 while for /o/ and /u:/ it was lower. Adults had larger B1 values for vowels /o/ and /o:/ and smaller for /a/ and /u:/; vowels /a/ and /o:/ had larger B2 and smaller for /i/ and /i:/; larger B3 values for vowels /o/ and /e:/ and smaller for /a/ and /a:/.

- Females had larger B1 & B2 values when compared to males for majority of the vowels while males tend to have higher B3 values.
- In females, B1 was larger in vowels /i/ and /i:/, B2 in /a/ and /e:/ and B3 in /e/ and /e:/. In males, B1 was larger in /i/ and /i:/ and B2 and B3 in /u/ and /e:/. B1 was lower for vowels /e/ and /e:/, B2 for /o/ and /u:/ and B3 for /u/ and /o:/ in females while, B1 of vowels /a/ and /u:/, B2 of /i/ and /i:/ and B3 of /a/ and /o:/ were lower in males.
- Speakers from Coastal region had larger B1 followed by Rayalaseema and Telengana speakers for all vowels.
- Speakers from Rayalaseema region had larger B2 followed by Coastal and Telengana speakers for all vowels except short and long vowels /i/ & /o/ and long vowel /u:/.
- Speakers from Rayalaseema region had larger B3 followed by Telengana and Rayalaseema speakers for all vowels except /i/, /u/ and /u:/.
- Manner and place of articulation of the preceding consonant had minimal effect on B1, B2 and B3 of the following vowel in Telugu.
- Voicing feature of the consonant had minimal influence on B1, B2 and B3 and varies between the short and long vowels.

4.3 Clinical implications

The temporal and spectral characteristics of vowels in Telugu described hitherto can be considered as the most descriptive so far reported. This information can be used in diverse clinical and research applications. Following are some of the areas where in the temporal and spectral parameters' information can be applied, especially with reference to the communication impaired with Telugu as their native language.

4.3.1 Differential diagnosis/Assessment

Vowel duration has been used as a measure in understanding the speech of hearing impaired, phonological disordered, apraxics, laryngectomees and cochlear implantees (Duggirala & Barbara, 2007; Collins, Rosenbek & Wertz, 1983 ; Krause, 1982, Poissant et.al., 2006; Manwal, Gilbert & Lerman, 2001). Vowel duration of the words in the current

study can be used for comparison of the communication disordered population with region, gender and age specific normative data for diagnostic purposes.

Regarding the clinical utility of F0, it is to be emphasized that clinicians consider the vowel and the context while measuring the F0 of the target words/speech material. This is because, as comparing F0 of high with low vowels could lead to variations in the assessment as seen in the present study.

Formant frequencies have been clinically used extensively to study the disordered speech, emergence of vowel system, characterizing the disordered speech, in monitoring and understanding of vowel production, intelligibility and speech perception (Duggirala, 1983-84; Sumita, Ozawa, Mukohyama, Ueno, Ohyama & Taniguchi, 2002; Hedrick & Nabelek, 2004; Poissant et.al., 2006; Kertoy, Guest, Quart & Lieh-Lai, 1999; Gibson & Ohde, 2007; Kazi et.al., 2007). As all the formant frequencies (F1, F2, F3 and F4) in the current study varied with age, gender and region, clinicians can make use of this normative data to compare and differentiate the disordered from the normal population.

Vowel space is an acoustic measure for indexing the size of the vowel articulatory working space constructed using F1 and F2 of vowels /i/, /a/ and /u/. Watson et.al., (2004) reported significant differences in the vowel space among different age groups (50s, 70s and 80s). Larger vowel space and area could be indicators of clear speech and was used for judging the intelligibility of the speech (Carrell, 1984; Blomgren, Robb & Chen, 1998; Ferguson & Kewley-Port, 2007).

The vowel space in the current study was drawn using PRAAT software and considering F1 and F2 values of /i/, /a/ and /u/ of the overall data across different groups (age, gender and region) is depicted in Figures 4.3.1, 4.3.2, 4.3.3 and 4.3.4 respectively. Vowel space area calculated by using the model of Blomgren et.al., (1998), for different groups of the current study and values are given in Table 4.3.1.

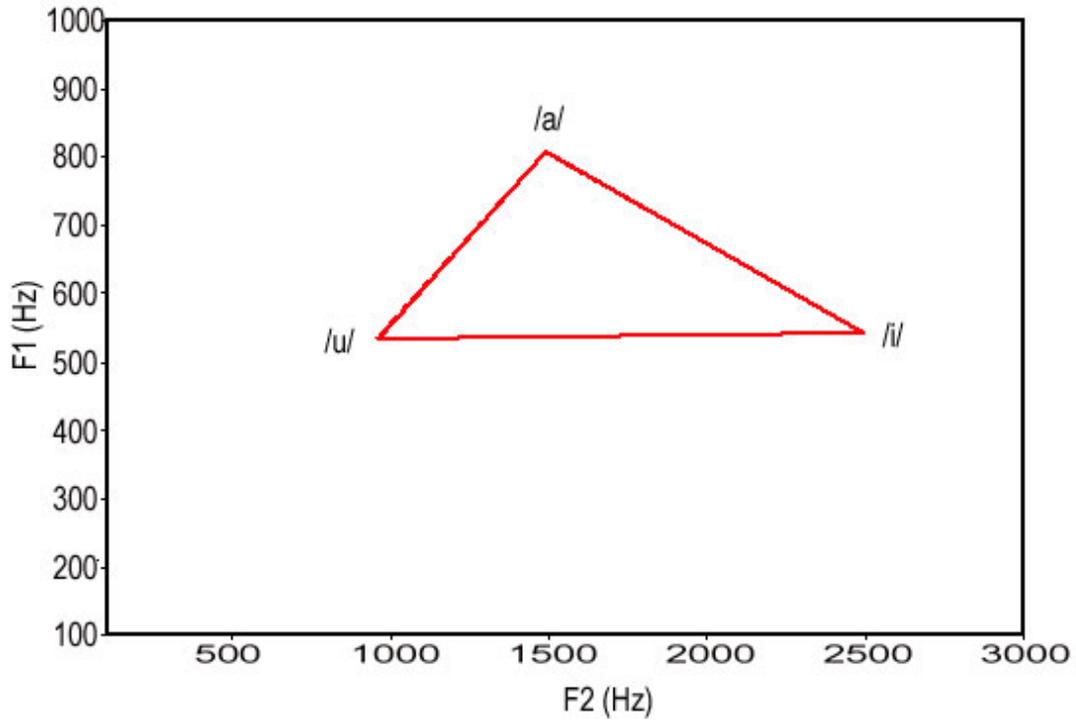


Figure 4.3.1: Vowel space for vowel /a/, /i/ and /u/

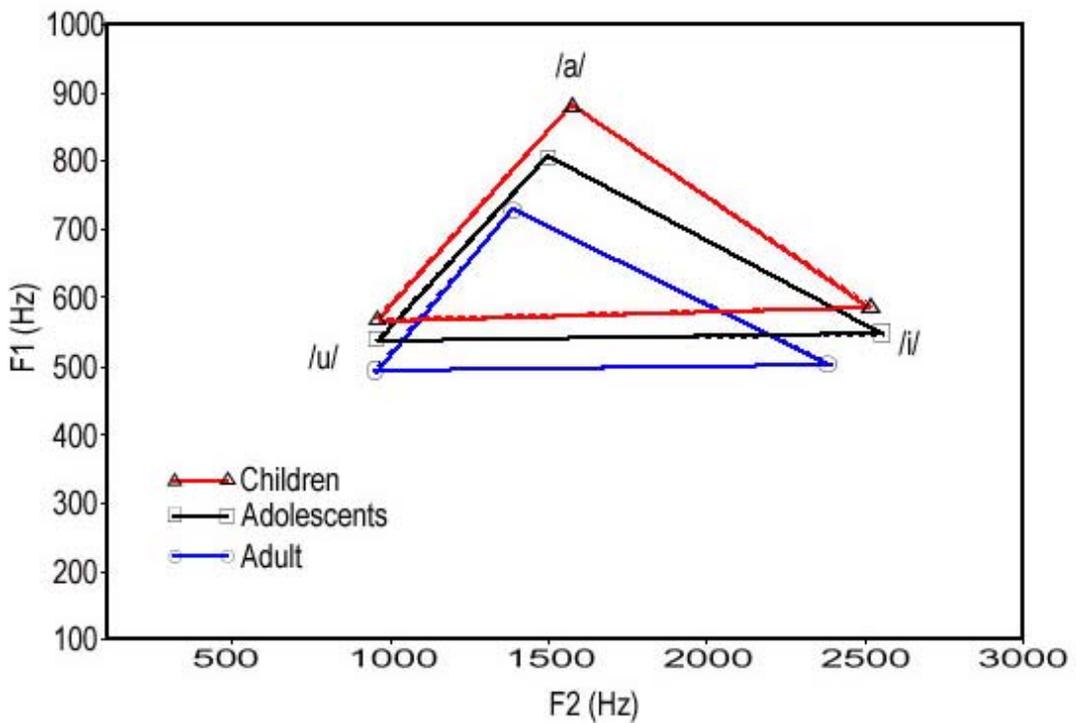


Figure 4.3.2: Vowel space for age categories

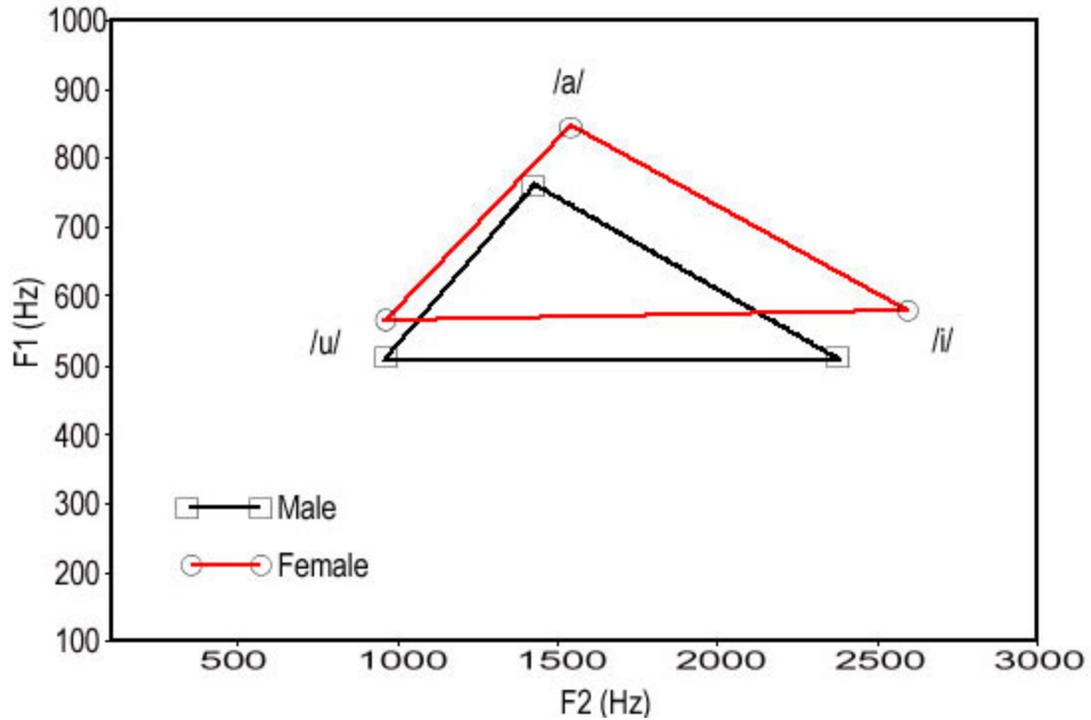


Figure 4.3.3: Vowel space for gender categories

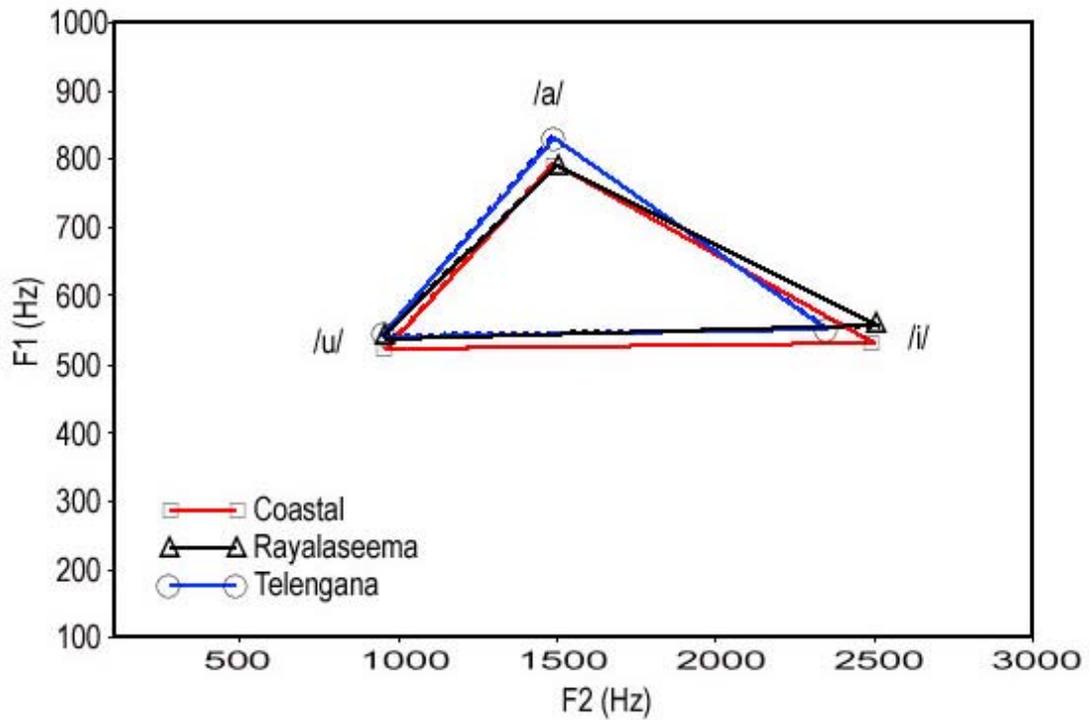


Figure 4.3.4: Vowel space for region categories

Table 4.3.1: Vowel space area in different groups

	Overall	Age			Gender		Region		
		Children	Adolescents	Adult	Female	Male	Coastal	Rayalaseema	Telangana
Area (Mz ²)	209279	242631	218412	168614	232167	186752	210019	197170	219822

From the data in Table 4.3.1 and Figures 4.3.1, 4.3.2, 4.3.3 and 4.3.4, it is observed that vowel space is different between the groups. Though age groups considered in the current study are not the same as in the quoted study (Watson et.al., 2004), age related changes in the vowel space did emerge. In the current study, smaller vowel space is noted for adults as compared to children, for males as compared to females and for speakers from Rayalaseema region as compared to Coastal or Telengana. Blomgren et.al., (1998), Klich & May (1982), Duggirala (1983-1984) and Turner, Tjaden & Weismer (1995) have used vowel space in differential diagnosis. The data obtained in this study could be used by the clinicians in differential diagnosis of various communication disorders. There are contradictory reports on association between vowel space and vowel intelligibility (Ferguson & Kewley-Port, 2007) and hence more studies on it's clinical utility are needed to substantiate it.

4.3.2 Rehabilitation/Management

The temporal and spectral data of the vowels obtained could also be used in the rehabilitation of the communication impaired in selecting appropriate training material to elicit optimum results with minimum effort. Not limiting to the areas mentioned below, information could be applied to wider areas. Clinicians can consider using vowels /e/ and /a/ in the CVC/CVCC contexts during the initial rehabilitation, long vowel words, and specific CV contexts to increase the vowel duration and thus facilitate enhanced speech intelligibility (Ferguson & Kewley-Port, 2007).

Vowels that elicit high F0 (/i/ and /u/) due to their inherent characteristics could be used to increase the pitch. Preceding consonant (nasal and fricatives) context that enhance higher F0 could also be used. Back vowels would be preferred to front and central vowels as they elicit higher F0. Based on the goal, clinicians can further compile practice material

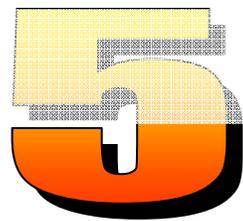
individualized to age, gender and region, as it is observed that in different groups, different vowels elicit higher or lower F0.

In the current study, it was observed that formant frequencies varied with age, gender, region and different consonant contexts. The normative data of the current study with reference to the formant frequencies as relevant to age, gender and region could help the clinician to achieve their rehabilitation goals for group appropriate vowel production and perception for their clients.

Tjaden, Rivera, Wilding & Turner (2005) had used vowel space and area to judge the recovery and improvement in dysarthria. The data (vowel space and area) of the current study could also be used by the clinicians as a reference in respective groups during rehabilitation and to judge the treatment efficacy.

Though limited, the acoustic characteristics of vowels in Telugu of the current study could be used as a reference in various communication disorder studies, speech processing strategies, speech synthesis and many more areas. The outcome of this study emphasizes that, when different co-variants and levels are considered, studying the influence of each co-variant and level would contribute significantly in understanding the influential factors.

From the results of the present study, it can be concluded that, acoustic characteristics of vowels in Telugu vary between age, gender, region and preceding consonant context groups. The influence of age, gender and consonant context on the acoustic characteristics of vowels as reported in the extensive western studies is also observed in this study. In addition, regional variations are also observed. Although linguistic variations between the region groups has been studied extensively, more studies on various anatomical and physiological factors that contribute to the variations of the acoustic characteristics of vowels in Telugu is warranted.



Summary and Conclusion

CHAPTER 5

SUMMARY AND CONCLUSION

Stetson (1928) said that “speech is movement made audible”. Speech, a form of verbal communication, is unique to human beings. This unique act of communication has drawn the attention of linguists, psychologists, speech scientists, speech language pathologists, audiologists, neurologists, computer scientists and other professionals involved in human communication in understanding and visualizing speech. Analysis of complex acoustic speech signal has diverse applications in phonetics, speech synthesis, automatic speech recognition, speaker identification, communication aids, speech pathology, speech perception, machine translation, hearing research, rehabilitation and assessment of communication disorders and many more.

Speech sounds consist of vowels and consonants. “Vowel is a conventional vocal sound in the production of which the speech organs offer little obstruction to the air stream and form a series of resonators above the level of the larynx” (Mosby, 2008). Vowels carry maximum energy and play a major role in speech understanding. Vowels are produced by voiced excitation of the open vocal tract. During the production of a vowel, the vocal tract normally maintains a relatively stable shape and offers minimal obstruction to the airflow. The energy thus produced can be radiated through the mouth or nasal cavity without audible friction or stoppage. Vowels are classified based on the tongue height, position of the tongue, lip position, soft palate position, phonemic length, articulators’ tension and pitch. Acoustically, vowels are characterized by changing formant pattern, formant bandwidth, duration, amplitude and fundamental frequency. Among these, it is believed that formant pattern, duration and fundamental frequency play a major role in vowel perception (Pickett, 1980). Vowels play a stellar role in human communication and synthetic speech and are also influenced by developmental, linguistic, cultural, social and emotional factors (Kent & Read, 1995; Klatt, 1976; Ladefoged, 1975; Nagamma Reddy, 1998; Prahallad & Patel, 2006; Savithri, 1989; Sreenivasa Rao & Yegnanarayana, 2004). These features are also reported to play a major role in assessment, differential diagnosis

and rehabilitation of communication disorders (Duggirala, 1983-1984, 1995, 2005; Edward & Valter, 2006, 2007; Hoasjoe, Martin, Doyle & Wong, 1992; Premalatha, Shenoy & Anantha, 2007).

Ladefogeds' (1975) comments that the vowels of different languages though perceived as same, with subtle acoustic differences between them, have relevance to the study of their acoustic and temporal characteristics in different languages and age groups. Information on acoustic characteristics of speech sounds will further enable understanding their articulatory nature and their perception (Pickett, 1980). Analysis of the acoustic characteristics of speech sounds of Indian languages is needed to understand their production and perception (Savithri, 1989). It will further be useful in perceptual studies, speech processing strategies, diagnosis and rehabilitation of various communication disorders.

Acoustic analysis of speech helps in early identification, (Bosma, Truby & Lind, 1965) differential diagnosis of various communication disorders (Hoasjoe, Martin, Doyle & Wong, 1992; Premalatha, Shenoy & Anantha., 2007; Tomik, Krupinski, Glodzik-Sobanska, Bala-Slodowska, Wszolek, Kusiak et.al., 1999; Rosen, Kent, Delaney & Duffy, 2006); laryngeal diseases (Murry & Doherty, 1980), understanding phonological process and vowel space in hearing impaired (Duggirala, 1995, 2005), assessing progress in the rehabilitation process and to improve naturalness and intelligibility of artificial speech (Nagamma Reddy, 1998).

Acoustic characteristics of vowels are generally studied based on their Fundamental Frequency, Formant Frequencies, Vowel Duration and Intensity. Acoustic studies illuminate the subtle differences in the production problems experienced not only by the hearing impaired but also in normal individuals and in different languages (Edward & Valter, 2006 & 2007; Duggirala, 1995; Ladefoged, 1975).

Telugu belongs to the South Dravidian group of languages (Krishnamurti, 2003) and is the second most widely spoken language in India (Hussain, Durrani & Gul, 2005). It has ten vowels (long and short: i, e, a, o, u) and seventeen consonants (six plosives: p, b, t,

d, k, g; two retroflex stops: t_ɻ, d_ɻ; two affricates: tʃ, dʒ; two fricatives: s, ʃ; two nasals: m and n; one lateral: l; and two semi-vowels: /w/ and /y/) (Nagamma Reddy, 1986). Most of the studies on acoustic analysis of Telugu vowels in the literature (Kostić, Mitter & Krishnamurti, 1977; Nagamma Reddy, 1998, 1999; Prabhavathi Devi, 1990; Sreenivasa Rao, Suryakanth, Gangashetty, & Yegnanarayana, 2001) have been done only on adults or children, in limited consonant contexts, in limited sample size, selected from one region/dialect, with no comment on gender variations. However, these factors (age, dialectal variations, and consonant context) play significant role on the acoustic characteristic of vowels. The paucity of comprehensive data on the acoustic characteristics of vowels in Telugu across different age group and regions on the most essential features (vowel duration, formant frequencies, and bandwidth), has prompted the current study.

The aim of the current study was to investigate the temporal and spectral characteristics of vowels in Telugu language across different age groups. Differences in the temporal and spectral characteristics of vowels in Telugu across age groups (Group I (children): 6 to 9 years; Group II (adolescent): 13 to 15 years; Group III (adult): 20 to 30 years); between males and females; different regions in Andhra Pradesh and influence of preceding consonant context were analyzed. Clinical research implications of the data within the field of communication disorders were also discussed so as to understand/relevance of the study.

A list of 60 words consisting of ten vowels eighteen consonant and semivowel present in Telugu were used to analyze the temporal and spectral characteristics of the first vowel occurring in CVC/CVCCV context. A total of 72 randomly selected, Telugu speaking normal participants from three different regions (Coastal, Rayalaseema and Telengana) in three different age groups (Group I: 06 to 09 years; Group II: 13 – 15 years; Group III: 20 – 30 years) with equal gender ratio participated in the study.

A total of 4320 tokens of vowels from 72 participants served as the sample size for analysis. Descriptive analysis of the data was performed using SPSS 16. A three-level model was constructed with individuals as first level, consonants context as second level and vowels as third level, to evaluate the effect of age, gender and region on the response

variables (vowel duration, fundamental frequency, formant frequencies and bandwidths), a multi-level approach (Quene & Bergh, 2004) was used in MIWin 1.1. Significance levels were determined with Wald test. Further to estimate the significant mean difference of each vowel between the age, region and gender groups for each response variables, one way ANOVA with Tukey HSD post hoc test and Student's *t*-test were used respectively using SPSS 16. Results obtained are as summarized below:

Vowel duration (VD):

- Vowels /e/ and /a:/ have longest vowel duration and short and long vowels /i/ have shortest vowel duration.
- Children have longer vowel duration compared to adolescents or adults.
- Females have longer vowel duration than males.
- Regional influences are seen on vowel duration. Rayalaseema speakers had longer vowel duration compared to Coastal or Telengana speakers.
- Preceding consonant's place, manner and voicing features influenced the vowel duration.
- The short and long vowel ratios observed in children was approximately 1:2, while was 1:2.2 in adolescents and 1:2.4 in adults.

Fundamental Frequency (F0):

- High vowels, /i/ and /u/ were having higher F0 and low vowel /a/ and /a:/ were having low F0
- Short vowels have higher F0 than long vowels.
- F0 was highest in children followed by adolescent and adults for all short and long vowels.
- Short and long vowel /a/ and /a:/ have lowest F0 in all age groups
- Females have higher F0 for all short and long vowels compared to males with vowel /i:/ having highest F0 in both genders.
- Short and long vowel /a/ and /a:/ have lowest F0 in both genders.
- Rayalaseema speakers have higher F0 for all short and long vowels followed by Telengana and Coastal speakers.

- Vowels when preceded by voiced consonants had lower F0 then when followed by voiceless consonants.
- Place and manner of articulation of the preceding consonant has influence on the F0 of the vowel.

Formant Frequencies (F1, F2, F3 and F4):

- Low mid vowels had the highest F1 and back high vowels had the lowest F1.
- High front vowel /i/ and /i:/ had the highest F2, F3 & F4 and back high vowel /u/ and /u:/ had the lowest F2, F3 & F4, in all age, gender and region groups.
- The long vowels had higher F2, F3 & F4 compared short vowels.
- Central vowels had higher F1 followed by front and back while Front vowels had higher F2, F3 & F4 followed by central and back.
- Children have higher formant frequencies (F1, F2, F3 & F4) followed by adolescents and adults.
- The low mid vowels have higher F1 and high back vowels have lower F1 values across age, gender and region groups.
- Females had higher formant frequencies (F1, F2, F3 & F4) values when compared to males for all vowels.
- Regional variations in formant frequencies (F1, F2, and F3) were noticed.
- Formant frequencies (F1, F2, F3 and F4) of vowels varied in different preceding consonant features such as manner, place and voicing. They seem to be contributing more than individual variations.

Bandwidths (B1, B2 & B3):

- Minimal variations in the band widths were noted among the vowels.
- Central vowels had larger bandwidth for F1 followed by back and front vowels.
- B1 reduced with increase in the phonetic length of the vowel.
- Children had larger B1 followed by adults and adolescents for all vowels except mid vowels /e/ and /o/.
- Females had larger B1 values when compared to males for all vowels.

- Speakers from Coastal region had larger B1 followed by Rayalaseema and Telengana speakers for all vowels.
- Manner and place of articulation of the preceding consonant had minimal effect on B1 of the following vowel in Telugu.

From the current study it is inferred that, vowels in Telugu follow universal criteria of vocal tract constriction and resonance characteristics, especially spectral parameters. As reported, significant variations in temporal and spectral parameters of vowels in Telugu exist between children, adolescents and adults; females and males; Coastal, Rayalaseema and Telengana speakers and the place, manner and voicing features of the preceding consonants. Hence, it is essential for speech language pathologists to apply the age, gender and region appropriate normative data to achieve appropriate speech output. From the multilevel statistical analysis, it is observed that consonants have higher contribution to the changes in formant frequencies and hence consonant contexts of the words with the target vowel should be carefully selected during comparisons of speech samples.

With the changes in formant frequencies depending on the resonant characteristics of the vocal tract and across the regions as observed in the current study, it would be interesting to further study if any anatomical variations exist between the regions which contribute to the observed variations.

The age, gender, region and preceding consonant context related data of the Telugu vowels obtained in this study would serve as a reference in the evaluation of Telugu speaking communication impaired and aid the clinicians working with this population to evolve appropriate treatment strategies.

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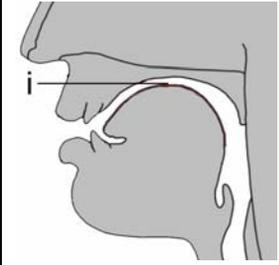
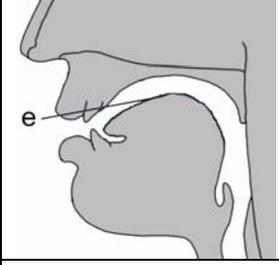
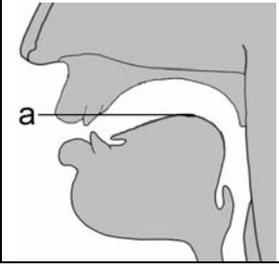
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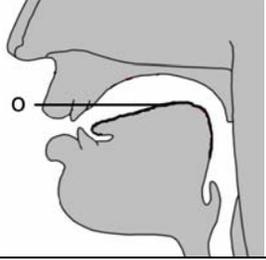
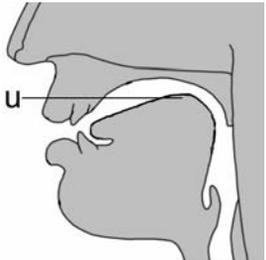
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Appendix

APPENDIX - I:

Description of Telugu vowels and their acoustic characteristics as described in literature.

Vowel	Grapheme	Image	Description	Vowel	Grapheme	Description
/i/	(ఇ)		<ul style="list-style-type: none"> • Front high vowel • Occurs in initial, medial, and final positions • F1 : 250 Hz to 350/400 Hz. • F2 : 2,500 Hz to 2,600 Hz. But seen at 2,250 Hz when F1 is at 350 – 400 Hz. • F3 : 2,700 Hz upto 3,000 Hz (is very weak) 	/i:/	(ఁ)	<ul style="list-style-type: none"> • Front, unrounded and high vowel. • Occurs in initial, medial or final of a word • F1 : 250 Hz to 300 Hz. • F2 : 2,200 Hz to 2,600 Hz. • F3 : 2,700 Hz to 3,000 Hz. • F4 : 3,500 Hz to 3,750 Hz.
/e/	(ఎ)		<ul style="list-style-type: none"> • It is front half-open vowel • Occurs in initial, medial and final positions • F1 : 250 Hz to 600 Hz. • F2 : 1,500 Hz to 2,700 Hz. • F3 : 2,700 Hz to 3,000 Hz. 	/e:/	(ఌ)	<ul style="list-style-type: none"> • It is a front vowel ranging from half-closed to half-open positions. • Occurs in initial, medial and final positions. • F1 : 370 Hz to 750 Hz. • F2 : 1,500 Hz to 2,500 Hz. • F3 : 2,750 Hz.
/a/	(అ)		<ul style="list-style-type: none"> • It is centralized open vowel. • Occurs in initial, medial and final positions. • F1 : 600 Hz to 750 Hz. • F2 : 1,200 Hz to 1,400 Hz. • F3 : 1,500 Hz to 3,300 Hz. 	/a:/	(ఱ)	<ul style="list-style-type: none"> • It is open vowel • Occurs in initial, medial and final positions • F1 : 500 Hz to 800 Hz. • F2 : 1,000 Hz to 1,350 Hz. • F3 : 2,000 Hz to 3,000 Hz.

Vowel	Grapheme	Image	Description	Vowel	Grapheme	Description
/o/	(ଓ)		<ul style="list-style-type: none"> • It is half open back rounded vowel • Occurs in initial and medial positions • F1 : 400 Hz to 600 Hz. • F2 : 1,000 Hz to 1,250 Hz. 	/o:/	(ଓ)	<ul style="list-style-type: none"> • It is back rounded vowel with half closed to the open variety at its end • Occurs in initial and medial positions • F1 : 400 Hz to 500 Hz. • F2 : 900 Hz to 1,100 Hz. • F3 : 2,700 Hz to 3,000 Hz.
/u/	(ଊ)		<ul style="list-style-type: none"> • It is high back vowel • Occurs in initial, medial and final positions • F1 : 300 Hz to 350 Hz. • F2 : 900 Hz to 1,000 Hz. 	/u:/	(ଊ)	<ul style="list-style-type: none"> • It is high back vowel • Occurs in initial, medial and final positions • F1 : around 400 Hz • F2 : 900 Hz to 1,000 Hz.

APPENDIX - II:

The list of final 60 words in Telugu used and their meaning in English.

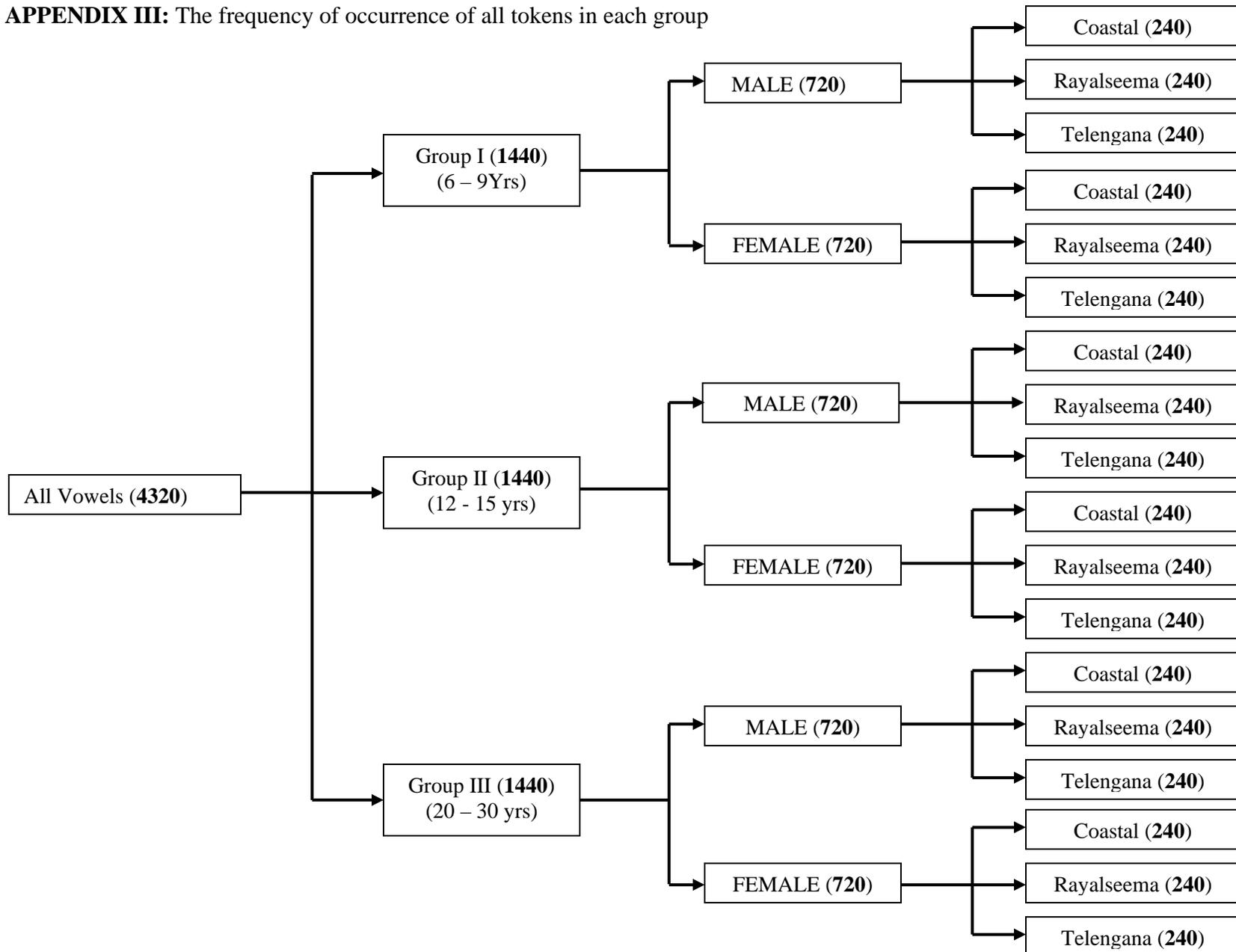
S.No.	Telugu word	Phonetic script	Meaning in English*
01.	కక్కు	/kakku/	Vomit
02.	కాకి	/ka:ki/	Crow
03.	కుక్క	/kukka/	Dog
04.	కేక	/ke:ka/	Shout
05.	గట్టు	/gat,t,u/	Ridge between plots of land
06.	గాటు	/ga:t,u/	Mark or dent caused by biting
07.	గీటు	/gi:t,u/	Make a sign by winking
08.	గేటు	/ge:t,u/	Gate/Door
09.	చాట	/tʃa:t,a/	Plate made from bamboo
10.	చీటి	/tʃi:t,i/	Slip
11.	చుట్టు	/tʃut,t,u/	Go around
12.	చెట్టు	/tʃet,t,u/	Tree
13.	చేటు	/tʃe:t,u/	Doing harm
14.	చోటు	/tʃo:t,u/	Place
15.	జుట్టు	/dʒut,t,u/	Hair
16.	టెక్కు	/t,ekku/	Showing off
17.	డోకు	/d,o:ku/	Vomiting
18..	తాకు	/ta:ku/	Touch
19.	తుక్కు	/tukku/	Waste
20.	తొక్క	/tokka/	Skin of a fruit
21.	తోక	/to:ka/	Tail
22.	దాక	/da:ka/	Wide mouthed pot
23.	దిక్కు	/dikku/	Side
24.	దుక్కి	/dukki/	Plough
25.	దూకు	/du:ku/	Jump
26.	దేకు	/de:ku/	To slide along on, To creep up
27.	నక్కు	/nakku/	walk furtively, creep, crouch, hide

S.No.	Telugu word	Phonetic script	Meaning in English*
28.	నాకు	/na:ku/	For me
29.	నిక్కు	/nikku/	Erectness, Be arrogant
30.	నీకు	/ni:ku/	For you
31.	నూక	/nu:ka/	Broken rice
32.	నొక్కు	/nokku/	Press
33.	పాకి	/pa:ki/	Sweeper, Scavenger
34.	పిక్క	/pikka/	Calf of the leg
35.	పీకు	/pi:ku/	Pull
36.	పుట	/puta/	Page
37.	పూట	/pu:ta/	A period of time
38.	వెక్కు	/pekku/	Many, A good number of
39.	వేక	/pe:ka/	Playing card
40.	పొక్కు	/pokku/	Boil, Blister, Pimple
41.	పోక	/po:ka/	Piece or slice of arecanut
42.	బక్క	/bakka/	Thin
43.	బాకు	/ba:ku/	Dagger
44.	బుక్క	/bukka/	Inside of the mouth, Mouthful
45.	బొక్క	/bokka/	Hole
46.	మాకు	/ma:ku/	For us
47.	మూక	/mu:ka/	Crowd, Mob
48.	మెకు	/meku/	To eat, Swallow, Gobble up
49.	మేకు	/me:ku/	Nail
50.	మొక్క	/mokka/	Plant
51.	వక్క	/wakka/	Beetle nut
52.	వెన్న	/wenna/	Butter
53.	సబ్బు	/sabbu/	Soap
54.	సుత్తి	/sutti/	Hammer
55.	రుద్దు	/ruddu/	Rub
56.	రెమ్మ	/remma/	Twig, Sub-branch of a main branch

S.No.	Telugu word	Phonetic script	Meaning in English*
57.	లక్క	/lakka/	Lacquer, A hard glossy finish applied to wooden furniture, toys, etc
58.	లెక్క	/lekka/	Money
59.	యమ	/yama/	Yama, the God of death
60.	షాపు	/ʃa:pu/	Shop

* from <http://dsal.uchicago.edu/dictionaries/gwynn/>.

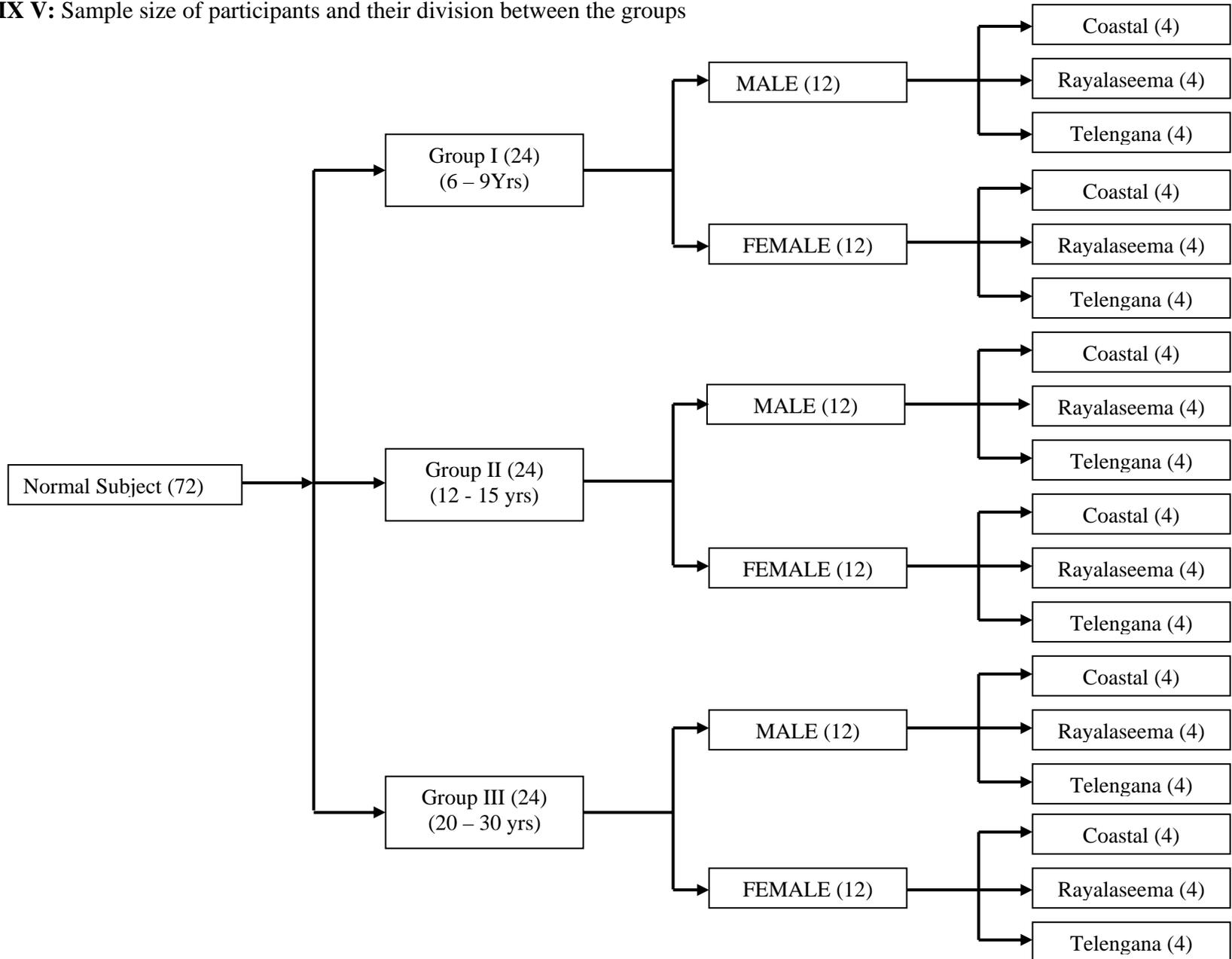
APPENDIX III: The frequency of occurrence of all tokens in each group



APPENDIX IV: The frequency of occurrence of vowels in different groups



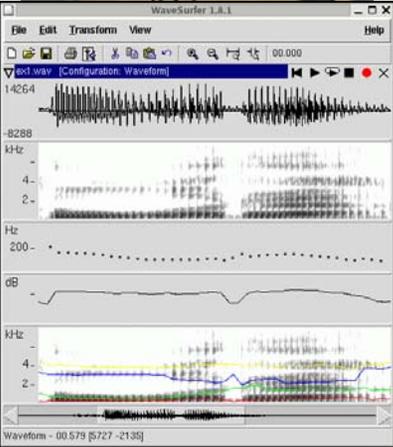
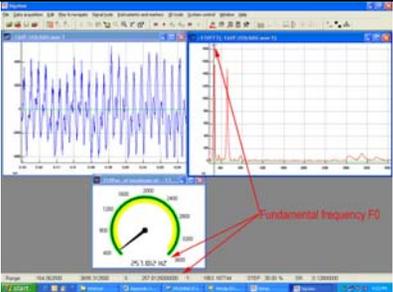
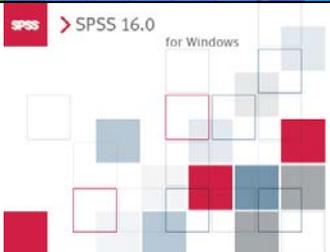
APPENDIX V: Sample size of participants and their division between the groups



APPENDIX – VI:

Equipment and software used in the study.

S.No.	Instrument/Software	Image	Technical details
1.1	Microphone		A condenser type microphone with headphone from INTEX was used for recording the speech sample. Microphone: Electret condenser type; Directivity : Omni- Directional; Magnet : Ferrite magnet; Input Impedence : 32 ohms; Frequency Response : 20 Hz - 20 KHz; Max. Input Power : 100 mW; Sensitivity : 96 dB; Connector : 3.5mm stereo plug; Cable Length : 1.8 m; Operation Voltage : 1.5 V ~ 10 V DC; Standard Operating Voltage : +3V; Current Consumption : 350 mA; Max. S/N Ratio : 40 dB or more
1.2	Computer		IBM Think pad with Inter(R) CPU, T2300 @ 1.66GHz, 504 MB of RAM with Microsoft Windows XP professional service pack 2, in built audio card was used for recording (wave surfer), editing (adobe audition 3) and analyzing fundamental frequency (sigview). HP Desktop Pentium IV computer, 1.00 GB RAM loaded with Windows XP, service pack 2, Computerized Speech Lab 4000 was used to analyze the spectral and temporal characteristics of tokens.
1.3	Adobe Audition		Adobe Audition Version 3.0, Build 7283.0 from Adobe Systems Incorporated, US was used for editing the speech sample and to extract the target word from the speech sample recorded. The extracted signal was stored in *.wav format.

S.No.	Instrument/Software	Image	Technical details
1.4	Computer Speech Lab		<p>CSL Model 4500, Version 3.1.6 developed by STR – Speech Tech Ltd., was used for spectral and temporal analysis of the tokens. Further information can be obtained from www.kaypentax.com</p>
1.5	Wave surfer		<p>WaveSurfer, Version 1.7.5/0412031246 was used to record the speech sample and store in the computer. WaveSurfer is an Open Source tool for sound visualization and manipulation. It has been designed Kåre Sjölander and Jonas Beskow at the Centre for Speech Technology (CTT) at KTH in Stockholm, Sweden. It was for free downloading from the following link http://www.speech.kth.se/wavesurfer/download.html.</p>
1.6	Sigview		<p>Sigview (SignalLab, Goran Obradovic, 2001) was used for analyzing F0. It is a real-time signal analysis software package with wide range of powerful FFT spectral analysis tools, statistics functions and a comprehensive visualization system. It is distributed as shareware and a completely functional version free to use for 21 days is downloadable from http://www.sigview.com/download.htm. It is widely used for signal analysis in various human communications and other signal analysis.</p>
1.7	SPSS		<p>Version 16, Release 16.0.0 (Sep 13, 2007) developed by SPSS Inc., was used for statistical analysis of the data. Further information about the product can be obtained from http://www.spss.com.</p>

APPENDIX -VII:

Operational definitions and measurement technique

VII.1 Vowel duration

Vowel duration is the duration from the onset of the vowel to the offset of the vowel. The onset and the offset of a vowel are determined by the presence and absence of clearly visible first two formants on the spectrogram respectively. (Krause, 1982; Gopal, 1987)

Figure 1 depicts the screen shot for vowel duration measurement. The difference between the two markers is considered as vowel duration.

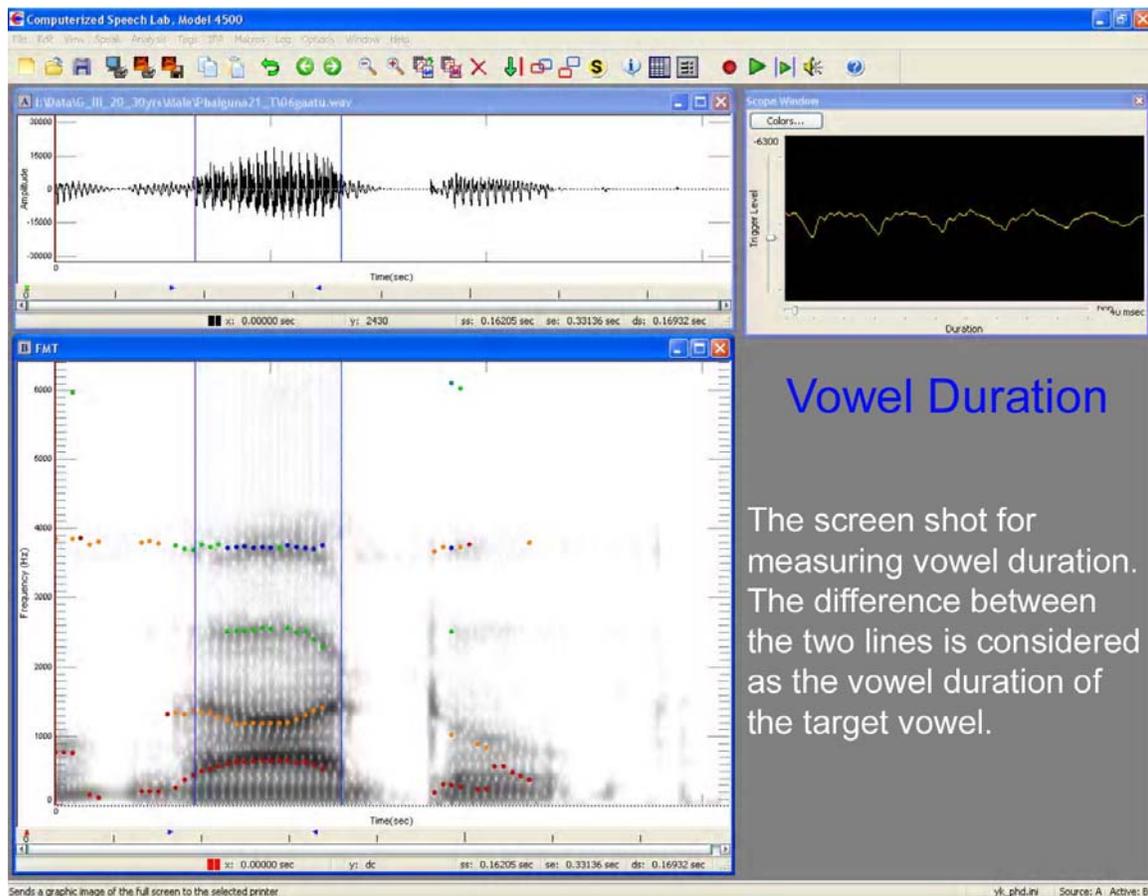


Figure 1: Screen shot of vowel duration

VII.2 Formant frequency

Formant-frequency estimates were made by measuring the mid-points of the visible dark bands of energy appropriate to the first four vowel resonances at a point within a comparatively steady-state portion of the vowel. (Sisty & Weinberg, 1972). Figure 2 is the screenshot for measuring formant frequencies. Formant frequencies plotted by the software are also done to cross check and identify the formants.

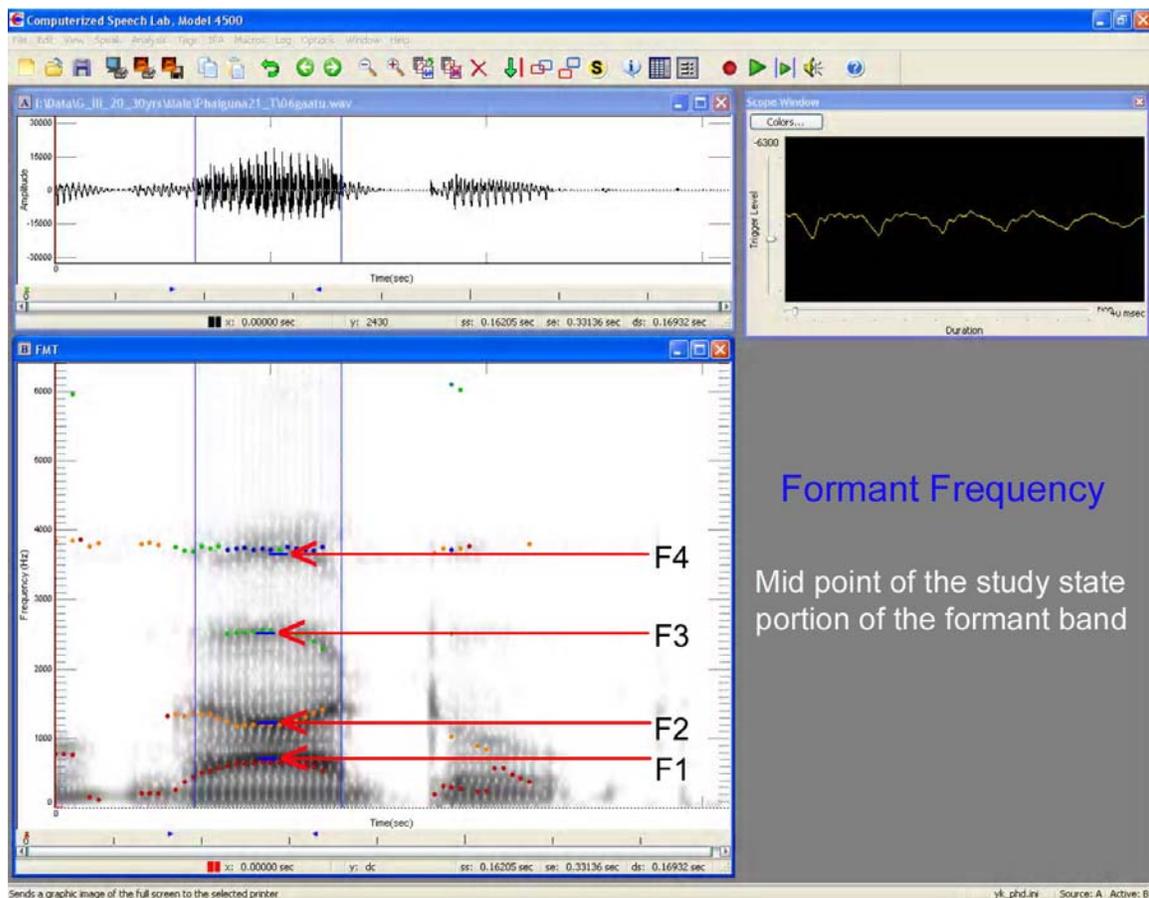


Figure 2: Screen shot of the formant frequency

VII.3 Fundamental frequency

Any voiced speech sound has a fundamental frequency. The number of glottal pulses per second determines the fundamental frequency of the sound. It is also the lowest frequency of vibration in a complex wave. Fundamental frequency of the target vowel was obtained using Sigview software. Figure 3 is the screen shot of the fundamental frequency measured.

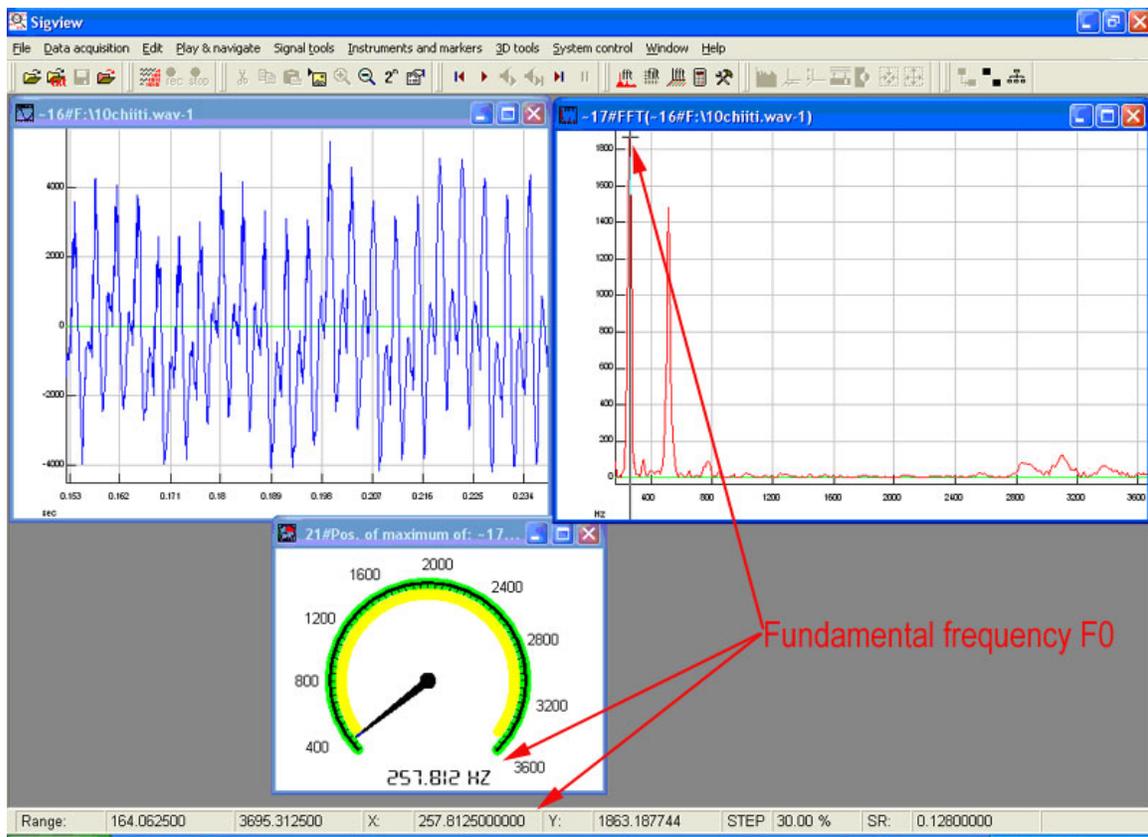


Figure 3: Screen shot of the fundamental frequency of vowel /i:/

VII.4 Formant bandwidth

Formant bandwidth, is the difference in frequency between the points on either side of the peak which have amplitude, that corresponds to 3 dB down from the peak. (Dunn,1961). Formant bandwidth values were recorded from the CSL. Figure 4 depicts the screenshot of the bandwidth for F1.

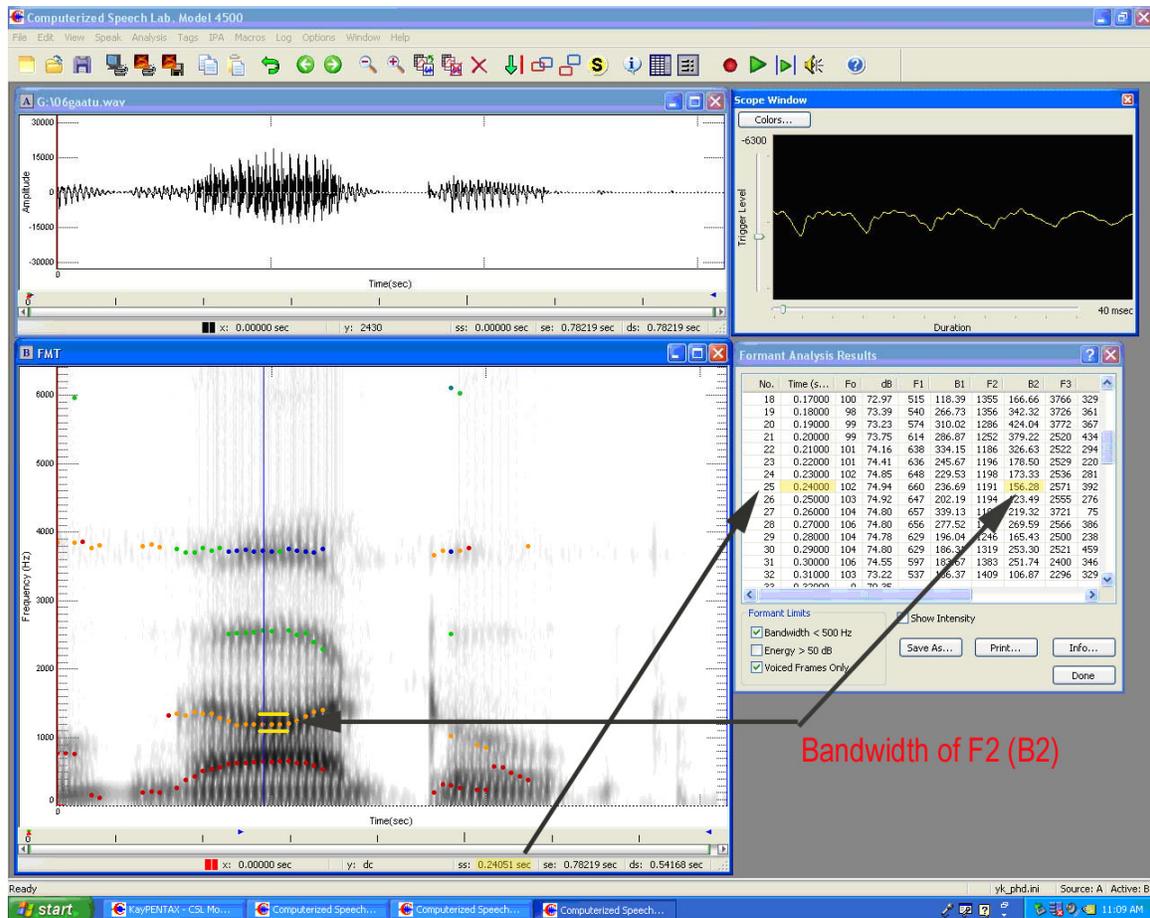


Figure 4: Screenshot of the bandwidth for F1

VII.5 Multilevel approach

Data from repeated measures experiments, such as current study, are usually analyzed with conventional ANOVA. It is known to cause problems such as the design effect (sampling hierarchy), and the requirement for complete designs and data sets. Multilevel modeling (MLM) is an alternative analysis tool for repeated measures data. MLM allows us to estimate variance and covariance components explicitly. MLM is recommended as a useful tool for analyzing repeated measures data from speech research (Quene & Bergh, 2004). Following are few terms that are commonly used in MLM.

Level	: A component of a data hierarchy. Level I is the lowest level.
Level n variation	: The variation of level n unit measurement about the fixed part of a model
Nesting	: The clustering of units into a hierarchy
Cluster	: A grouping containing 'lower level' elements.
Random part	: That part of a model represented by Z_u , that is the contribution of the random variables at each level
Response variable	: Also known as a 'dependent' variable. Denoted by VD: Vowel duration; F0: Fundamental frequency; F1: First formant frequency; F2: Second formant frequency; F3: Third formant frequency; F4: Fourth formant frequency; B1: F1 bandwidth; B2: F2 bandwidth; B3: F3 bandwidth

In the current study a multilevel framework was constructed, in which, Level 1 is individuals differing in age, gender and region, Level 2 is consonant contexts where preceding consonant varies and Level 3 is vowels where temporal and spectral parameters are measured. As from the literature it was established that, vowels vary in their spectral and temporal characteristics in different consonant contexts and in age, gender and region individual groups. The multilevel framework of the study is depicted in Figure 3.1.

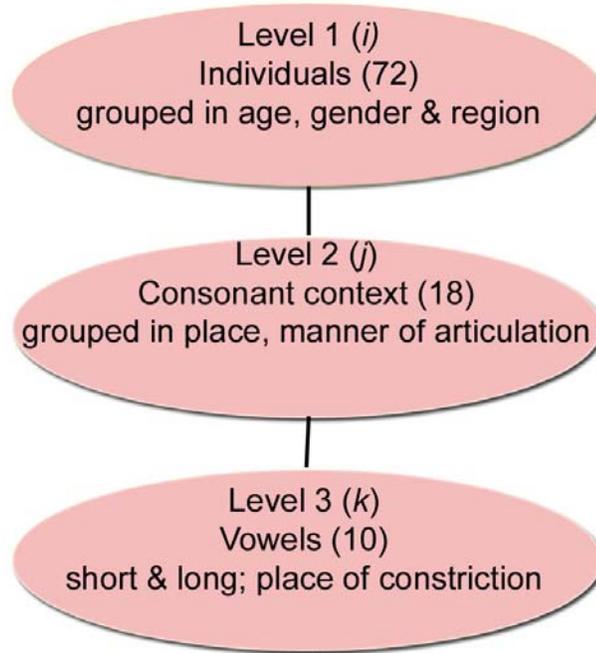


Figure 3.1: Multilevel framework considered in the study.

To evaluate the effect of age, gender, and region on spectral and temporal characteristics of vowels, it is essential to understand the variations within and between each level 1,2 and 3 influence on the response variables (in this study, vowel duration, fundamental frequency, formant frequencies, formant bandwidths). Naïve analysis (ANOVA, MANOVA etc) will take care of lower level(vowel level) variations but ignores the variations in the higher level (consonant and individual level). Multilevel framework would consider these variations. Random effect model was used to study the association between response variable and set of predictors. Here, the consonant level and individual level are considered to be random effects. MLWin 1.1 was used for the analysis. Model 1, is generally used in naïve analysis and model 2 and 3 are used in MLM.

Model 1: Naïve model

$$VD_{ijk} = \beta_0 + \beta_1 age + \beta_2 gender + \beta_3 region + \varepsilon_{ijk}$$

Model 2: Random intercept model keeping consonant level as random effect

Level 2

$$VD_{ijk} = \beta_{0j} + \beta_1 age + \beta_2 gender + \beta_3 region + \varepsilon_{ijk}$$

Level 1

$$\beta_{0j} = \beta_0 + v_j$$

Model 3: Random intercept model keeping consonant level and individual level as random effect

Level 1

$$VD_{ijk} = \beta_{0ij} + \beta_1 age + \beta_2 gender + \beta_3 region + \varepsilon_{ijk}$$

Level 2

$$\beta_{0ij} = \beta_{0i} + v_j$$

Level 3

$$\beta_{0i} = \beta_0 + v_i$$

where,

VD_{ijk} = Vowel duration for i^{th} individual, j^{th} consonant and k^{th} vowel.

β_{0ij} = Random intercept for level 2

β_{0i} = Random intercept for level 3

β_1 = Regression co-efficient for age

β_2 = Regression co-efficient for gender

β_3 = Regression co-efficient for region

ε_{ijk} = Random error for i^{th} individual, j^{th} consonant and k^{th} vowel.

v_j = Random effect at consonant level assumed to follow Gaussian

with mean 0 and variance σ_c^2 [$v_j \approx N(0, \sigma_c^2)$]

v_i = Random effect at individual level assumed to follow Gaussian

with mean 0 and variance σ_p^2 [$v_i \approx N(0, \sigma_p^2)$]

Model 3 is applied for all the other response variables (fundamental frequency, formant frequencies (F1, F2, F3, and F4), and bandwidths (B1, B2 and B3)).

APPENDIX – VIII a

4.1. Vowel Duration

Table 4.1.1 Mean vowel duration (ms), SD and 95% confidence interval for all short and long vowels

Vowel	n	Mean	SD	95% Confidence Interval for Mean	
				Lower Bound	Upper Bound

N=4320

Vowel	n	Mean	SD	95% Confidence Interval for Mean	
				Lower Bound	Upper Bound

/i/	216	68.81	23.58	65.65	71.97
/e/	504	91.58	31.88	88.79	94.37
/a/	576	86.75	24.55	84.74	88.76
/o/	360	88.98	39.58	84.88	93.09
/u/	648	71.28	30.06	68.97	73.60
/i:/	288	179.82	44.23	174.69	184.95
/e:/	432	191.03	41.56	187.10	194.96
/a:/	720	196.85	38.95	194	199.70
/o:/	288	188.47	41.36	183.67	193.27
/u:/	288	182.91	44.48	177.75	188.07

Table 4.1.2: Mean vowel duration (ms), SD values and 95% confidence interval for mean for front, central and back

Place of constriction	n	Mean	SD	95% Confidence Interval for Mean	
				Lower Bound	Upper Bound

N=4320

Place of constriction	n	Mean	SD	95% Confidence Interval for Mean	
				Lower Bound	Upper Bound

Front	1440	135.65	63	132.38	138.92
Central	1296	147.92	64	144.43	151.41
Back	1584	116.91	64	113.73	120.08

Table 4.1.3: Ratio between short and long vowels in three age groups

Vowel	Children	Ratio	
		Adolescent	Adult
/i/ : /i:/	1 : 2.4	1 : 2.6	1 : 2.8
/e/ : /e:/	1 : 2.0	1 : 2.0	1 : 2.3
/a/ : /a:/	1 : 2.1	1 : 2.2	1 : 2.4
/o/ : /o:/	1 : 2.0	1 : 2.0	1 : 2.4
/u/ : /u:/	1 : 2.4	1 : 2.6	1 : 2.7

Table 4.1.4: Mean vowel duration (ms), SD and 95% confidence interval for mean for the three age groups

N=4320

Vowels	Children					Adolescent					Adult				
	n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean	
				Lower	Upper				Lower	Upper				Lower	Upper
/i/	72	82.03	32.02	74.50	89.55	72	61.76	14.90	58.26	65.27	72	62.64	13.05	59.57	65.71
/e/	168	103.64	30.70	98.96	108.31	168	86.48	39.00	80.55	92.40	168	84.63	19.63	81.64	87.62
/a/	192	100.43	32.34	95.83	105.04	192	81.41	17.00	79.04	83.79	192	78.40	14.00	76.00	80.43
/o/	120	101.18	35.50	94.76	107.59	120	87.09	54.00	77.19	96.99	120	78.68	14.38	76.08	81.28
/u/	216	84.24	41.73	78.64	89.83	216	63.13	19.00	60.45	65.81	216	66.49	17.80	64.09	68.88
/i:/	96	194.55	48.93	184.64	204.47	96	161.42	29.00	155.49	167.34	96	183.49	45.67	174.24	192.34
/e:/	144	208.19	42.36	201.21	215.17	144	173.9	34.00	168.20	179.6	144	191.01	40.00	184.37	197.64
/a:/	240	211.27	40.63	206.10	216.43	240	182.05	31.00	178.02	186.08	240	197.25	38.44	192.36	202.13
/o:/	96	204.69	46.06	196.35	214.02	96	170.32	28.41	164.57	176.08	96	190.40	40.46	182.20	198.59
/u:/	96	200.43	51.43	190.00	210.85	96	164.78	32.25	158.25	171.32	96	183.51	40.60	175.28	191.74

Table 4.1.5: Mean vowel duration (ms), SD and 95% confidence interval for mean across gender

N=4320

Vowel	Female					Male				
	n	Mean	SD	95% CI Upper		n	Mean	SD	95% CI Lower	
				Lower	Upper				Lower	Upper
/i/	108	70.89	24.90	66.14	75.64	108	66.73	22.10	62.51	70.95
/e/	252	93.01	23.78	90.06	95.96	252	90.15	38.30	85.40	94.90
/a/	288	89.02	23.88	86.25	91.79	288	84.48	25.00	81.57	87.38
/o/	180	92.61	44.96	85.99	99.22	180	85.36	33.06	80.50	90.22
/u/	324	72.16	33.22	68.53	75.79	324	70.41	26.54	67.51	73.31
/i:/	144	180.4	46.26	172.77	188.02	144	179.24	42.25	172.28	186.20
/e:/	216	193.19	38.92	187.97	198.40	216	188.88	44.02	182.98	194.78
/a:/	360	199.01	36.62	195.22	202.81	360	194.69	41.00	190.44	198.95
/o:/	144	190.53	40.66	183.83	197.34	144	186.41	42.09	179.48	193.34
/u:/	144	181.28	43.34	174.14	188.42	144	184.53	45.68	177.00	192.05

Table 4.1.6: Mean vowel duration (ms), SD and 95% confidence interval for mean values for three regions

N=4320

Vowel	Coastal					Rayalaseema					Telengana				
	n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean	
				Lower	Upper				Lower	Upper				Lower	Upper
/i/	72	56.14	13.15	53.05	59.23	72	79.78	28.72	73.03	86.53	72	70.51	19.96	65.82	75.20
/e/	168	80.02	16.00	77.47	82.58	168	102.73	30.20	98.13	107.33	168	91.99	40.10	85.88	98.10
/a/	192	76.52	14.30	74.49	78.56	192	97.30	31.84	92.77	101.83	192	86.42	19.47	83.65	89.19
/o/	120	79.07	48.20	70.35	87.78	120	100.65	33.95	94.51	106.79	120	87.23	31.78	81.49	92.98
/u/	216	60.33	19.73	57.69	62.98	216	82.93	39.61	77.62	88.24	216	70.59	22.43	67.58	73.60
/i:/	96	161.09	26.12	155.80	166.39	96	206.74	48.92	196.83	216.65	96	171.62	41.00	163.32	179.93
/e:/	144	174.74	22.83	170.98	178.51	144	214.02	48.43	206.04	222.00	144	184.33	38.64	177.97	190.70
/a:/	240	178.95	23.85	175.91	181.98	240	217.32	44.59	211.65	222.99	240	194.30	35.44	189.79	198.80
/o:/	96	169.11	21.97	164.66	173.57	96	210.36	50.21	200.19	220.54	96	185.93	35.99	178.63	193.22
/u:/	96	164.15	26.97	158.68	169.61	96	208.47	48.68	198.60	218.33	96	176.10	42.63	167.47	184.74

Table 4.1.7: The mean vowel duration (ms), SD of vowels preceded by different (manner of articulation) consonants

N=4320				
VOWEL	Manner of Articulation	n	Mean	Std. Deviation
/i/	Stop	144	68.04	22.804
	Nasal	72	70.35	25.164
/e/	Stop	144	90.71	44.497
	Affricate	72	89.89	26.534
	Nasal	72	91.03	23.664
	Semi vowel	72	97.15	25.875
	Lateral	72	82.01	22.205
	Trill	72	99.57	24.349
	Stop	216	88.75	26.373
/a/	Nasal	72	87.03	27.786
	Fricative	72	95.53	26.072
	Semi vowel	144	83.47	19.963
	Lateral	72	78.24	18.313
	Stop	216	85.94	27.603
/o/	Nasal	144	93.54	52.462
	Stop	360	67.39	30.744
/u/	Affricate	144	74.93	30.162
	Fricative	72	65.06	22.007
	Trill	72	89.68	25.546
	Stop	144	184.79	40.175
/i:/	Affricate	72	171.54	47.006
	Nasal	72	178.15	48.233
	Stop	288	191.89	40.262
/e:/	Affricate	72	190.93	44.761
	Nasal	72	187.69	43.752
	Stop	432	198.13	39.419
/a:/	Affricate	72	200.28	37.059
	Nasal	144	194.00	36.906
	Fricative	72	191.47	41.748
/o:/	Stop	216	189.75	40.863
	Affricate	72	184.64	42.896
/u:/	Stop	144	188.19	44.618
	Nasal	144	177.63	43.864

Table 4.1.8: The mean vowel duration (ms), SD of vowels preceded by different (place of articulation) consonants

N=4320

Vowel	Place of articulation	n	Mean	Std. Deviation
/i/	Bilabial	72	63.21	25.474
	Dental	72	72.88	18.738
	Alveopalatal	72	70.35	25.164
/e/	Bilabial	216	91.83	24.572
	Alveopalatal	216	90.49	25.356
	Retroflex	72	94.10	58.444
/a/	Bilabial	144	83.72	21.327
	Alveopalatal	288	86.43	23.577
	Velar	144	90.42	28.815
/o/	Bilabial	216	86.80	26.281
	Dental	72	83.43	29.751
	Alveopalatal	72	101.10	68.917
/u/	Bilabial	144	66.17	30.215
	Dental	144	69.94	34.362
	Alveopalatal	288	76.15	28.497
	Velar	72	64.72	23.214
/i:/	Bilabial	72	182.10	42.464
	Alveopalatal	144	174.85	47.572
	Velar	72	187.49	37.854
/e:/	Bilabial	144	188.49	42.321
	Dental	72	190.56	34.764
	Alveopalatal	72	190.93	44.761
	Velar	144	193.87	42.486
/a:/	Bilabial	216	195.34	38.557
	Dental	144	199.47	38.590
	Alveopalatal	216	195.15	39.146
	Velar	144	199.06	39.728
/o:/	Bilabial	72	186.47	42.167
	Dental	72	189.64	38.877
	Alveopalatal	72	184.64	42.896
	Retroflex	72	193.13	41.767
/u:/	Bilabial	144	184.42	43.826
	Dental	72	184.96	43.764
	Alveopalatal	72	177.83	46.682

Table 4.1.9: The mean vowel duration (ms), SD of vowels in different voicing feature of preceding consonants

Vowel	N=4320					
	Voiced consonant			Voiceless consonant		
	n	Mean	SD	n	Mean	SD
/i/	72	72.88	18.74	72	63.21	25.47
/e/	72	91.03	23.66	144	90.71	44.49
/a/	144	92.02	25.02	72	82.22	27.61
/o/	144	86.65	24.27	144	85.26	29.87
/u/	144	70.19	36.16	216	65.53	26.45
/i:/	72	187.50	37.85	72	182.10	42.46
/e:/	216	194.40	39.86	144	186	42.18
/a:/	288	200.70	37.78	216	193.40	40
/o:/	72	193.10	41.77	144	188.10	40.44
/u:/	144	181.20	42.51	72	191.40	45.53

APPENDIX – VIII b

4.2.1. Fundamental frequency (F0)

Table 4.2.1.1: Mean F0 (Hz), SD and 95% confidence interval for mean of all short and long vowels

Vowel	n	Mean	SD	95% Confidence Interval for Mean	
				Lower Bound	Upper Bound
				N=4320	
/i/	215	228.53	54.3	221.23	235.83
/e/	501	220.16	52.18	215.16	224.74
/a/	574	216.17	51.81	211.92	220.41
/o/	357	220.84	51.38	215.49	226.18
/u/	643	228.6	54.21	224.40	232.80
/i:/	288	229.45	53.47	223.24	235.64
/e:/	429	219.88	52.51	214.90	224.87
/a:/	719	213.74	51.75	209.95	217.53
/o:/	287	221.93	52.14	215.87	227.98
/u:/	286	228.13	53.58	221.89	234.37

Table 4.2.1.2: Mean F0 (Hz), SD values and 95% confidence interval for mean for front, central and back

Place of constriction	n	Mean	SD	95% Confidence Interval for Mean	
				Lower Bound	Upper Bound
N=4320					
Front	1433	223.2	52.99	220.45	225.95
Central	1293	214.82	51.78	211.99	217.65
Back	1573	225.54	53.15	222.91	228.17

Table 4.2.1.3: Mean F0 (Hz), SD and 95% confidence interval for mean for the three age groups

N=4320

Vowel	Children					Adolescent					Adult				
	n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean	
				Lower	Upper				Lower	Upper				Lower	Upper
/i/	71	263.05	37.64	254.14	271.96	72	226.61	51.42	214.52	238.69	72	194.42	51.05	184.43	208.42
/e/	166	255.64	34.77	250.31	260.97	168	217.59	47.73	210.32	224.86	167	187.47	48.66	180.03	194.90
/a/	191	250.85	34.28	245.97	255.75	192	214.64	48.33	207.76	221.52	191	183.02	47.48	176.24	189.79
/o/	117	254.77	34.88	248.38	261.16	120	219.11	47.78	210.47	227.74	120	189.48	47.97	180.81	198.15
/u/	213	263.61	36.64	258.66	268.55	216	226.16	50.65	219.36	232.95	214	196.23	51.46	189.30	203.17
/i:/	96	263.14	35.63	255.92	270.36	96	227.54	48.83	217.65	237.43	96	197.65	53.29	186.91	208.40
/e:/	142	255.46	36.12	249.46	261.44	143	217.28	47.50	209.43	225.14	144	187.39	49.03	179.32	195.46
/a:/	240	249.13	36.83	244.45	253.81	240	211.63	46.24	205.75	217.51	239	180.33	46.74	174.37	186.29
/o:/	95	256.49	37.20	248.91	264.07	96	219.43	47.36	209.84	229.03	96	190.21	48.51	180.38	200.04
/u:/	95	260.87	37.11	253.31	268.43	95	226.14	50.88	215.78	236.50	96	197.70	51.70	187.23	208.18

Table 4.2.1.4: Mean F0 (Hz), SD and 95% confidence interval for mean across gender

N=4320

Vowel	Female					Male				
	n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean	
				Lower	Upper				Lower	Upper
/i/	108	250.73	23.23	246.30	255.16	107	206.13	66.34	193.41	218.84
/e/	252	240.75	24.84	237.67	243.84	249	199.31	63.22	191.42	207.21
/a/	288	236.85	24.89	233.96	239.74	286	195.34	62.49	188.07	202.61
/o/	179	241.31	23.07	237.90	244.71	178	200.25	62.64	190.99	209.52
/u/	322	251.27	25.32	248.50	254.05	321	205.86	64.94	198.73	212.99
/i:/	144	251.12	22.28	247.45	254.80	144	207.77	65.54	196.96	218.56
/e:/	214	239.51	22.59	236.46	242.55	215	200.35	65.11	191.60	209.11
/a:/	360	232.49	23.02	230.10	234.87	359	194.94	64.30	188.27	201.62
/o:/	143	241.31	22.78	237.54	245.07	144	202.68	64.59	192.04	213.32
/u:/	142	249.26	23.43	245.38	253.15	144	207.29	65.55	196.49	218.09

Table 4.2.1.5: Mean F0 (Hz), SD and 95% confidence interval for mean values for three regions

N=4320

Vowel	Coastal					Rayalaseema					Telengana				
	n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean	
				Lower	Upper				Lower	Upper				Lower	Upper
/i/	72	208.39	57.10	194.98	221.82	72	251.14	51.57	239.02	263.25	71	226.03	45.41	215.28	236.78
/e/	166	201.60	54.47	193.26	209.95	167	239.47	49.94	231.84	247.11	168	219.29	45.01	212.43	226.14
/a/	191	197.87	52.64	190.35	205.38	192	235.07	51.07	227.79	242.33	191	215.47	44.78	209.08	221.86
/o/	119	201.14	52.95	191.53	210.76	120	241.26	49.68	232.28	250.24	118	219.92	43.26	212.04	227.82
/u/	213	211.11	57.04	203.39	218.8	215	247.4	52.77	240.31	254.49	215	227.15	46.33	220.92	233.38
/i:/	96	208.51	55.95	197.17	219.85	96	250.41	50.65	240.15	260.67	96	229.41	45.35	220.23	238.6
/e:/	142	199.65	54.26	190.65	208.65	143	239.37	50.81	230.97	247.76	144	220.49	44.75	213.11	227.86
/a:/	239	193.65	51.84	187.04	200.26	240	233.83	51.24	227.32	240.35	240	213.66	44.02	208.07	219.26
/o:/	95	200.89	53.31	190.03	211.75	96	241.71	50.81	231.41	251.99	96	222.97	44.19	214.01	231.92
/u:/	94	206.68	56.98	195.01	218.36	96	249.03	49.88	238.92	259.13	96	228.24	45.23	219.07	237.40

Table 4.2.1.6: The mean F0 (Hz), SD of vowels preceded by different (manner of articulation) consonants

N=4320				
Vowel	Manner of articulation	n	Mean	Std. Deviation
/i/	Stop	143	228.3877	54.46906
	Nasal	72	228.8257	54.35642
/e/	Stop	144	223.5347	52.55672
	Affricate	71	224.5349	51.55168
	Nasal	72	220.3546	50.83468
	Semi vowel	71	216.4824	53.07446
/a/	Lateral	71	214.7249	52.66622
	Trill	72	217.8697	52.95902
	Stop	214	216.7581	51.96448
	Nasal	72	219.1954	53.43694
/o/	Fricative	72	218.0085	51.94567
	Semi vowel	144	213.4271	50.90445
	Lateral	72	215.0326	52.54303
/u/	Stop	214	221.3153	51.48334
	Nasal	143	220.1226	51.40022
	Stop	356	228.3239	54.57766
	Affricate	143	229.5633	54.45686
/i:/	Fricative	72	232.0042	53.76490
	Trill	72	224.6769	53.20046
	Stop	144	228.9572	53.49392
/e:/	Affricate	72	230.6626	54.16397
	Nasal	72	229.2033	53.47932
	Stop	285	219.3285	52.68074
	Affricate	72	222.4775	52.12301
/a:/	Nasal	72	219.4935	52.90972
	Stop	432	212.9971	51.95441
	Affricate	72	211.0882	52.25244
	Nasal	143	216.1022	51.34083
/o:/	Fricative	72	216.1946	51.74016
	Stop	216	221.4772	52.10107
	Affricate	71	223.2941	52.59608
/u:/	Stop	142	229.2830	53.97628
	Nasal	144	226.9942	53.33195

Table 4.2.1.7: The mean F0 (Hz), SD of vowels preceded by different (place of articulation) consonants

N=4320				
Vowel	Place of Articulation	n	Mean	Std. Deviation
/i/	Bilabial	72	230.1472	54.92156
	Dental	71	226.6034	54.33823
	Alveopalatal	72	228.8257	54.35642
/e/	Bilabial	215	220.4112	51.97078
	Alveopalatal	214	219.0377	52.31211
	Retroflex	72	222.7275	53.04307
/a/	Bilabial	144	214.9823	51.23351
	Alveopalatal	288	216.0283	51.96258
	Velar	142	217.6562	52.41655
/o/	Bilabial	214	219.9786	51.24600
	Dental	71	222.4852	52.24016
	Alveopalatal	72	221.7660	51.59863
/u/	Bilabial	142	225.2044	53.05844
	Dental	142	230.5355	54.95257
	Alveopalatal	287	228.9498	53.84956
/i:/	Velar	72	230.1144	57.21298
	Bilabial	72	232.2051	52.89791
	Alveopalatal	144	229.9330	53.63921
/e:/	Velar	72	225.7092	54.25789
	Bilabial	144	219.9838	52.48135
	Dental	70	218.3513	51.68186
	Alveopalatal	72	222.4775	52.12301
	Velar	143	219.2301	53.64476

Vowel	Place of Articulation	n	Mean	Std. Deviation
/a:/	Bilabial	215	215.2389	51.30759
	Dental	144	212.7110	51.15730
	Alveopalatal	216	214.2582	51.82357
	Velar	144	211.7724	53.36991
/o:/	Bilabial	72	222.9665	51.92420
	Dental	72	220.1779	51.99407
	Alveopalatal	71	223.2941	52.59608
	Retroflex	72	221.2872	53.07096
/u:/	Bilabial	143	228.3010	53.56768
	Dental	71	228.0935	53.60935
	Alveopalatal	72	227.8285	54.28762

Table 4.2.1.8: Mean F0 (Hz) of vowels across voicing feature of preceding consonants

Vowels	N=4320					
	Voiced consonant			Voiceless consonant		
	n	Mean	SD	n	Mean	SD
/i/	71	226.6	54.34	72	230.20	54.92
/e/	72	220.4	50.84	144	223.50	52.56
/a/	144	214.5	50.95	70	221.40	54.06
/o/	142	217.5	51.32	143	223.70	51.50
/u/	142	224.6	54.21	214	230.80	54.80
/i:/	72	225.7	54.26	72	232.20	52.89
/e:/	213	218.6	52.22	144	220.50	53.46
/a:/	287	213.1	51.27	216	214.10	52.57
/o:/	72	221.3	53.07	144	221.60	51.79
/u:/	143	227.1	52.99	71	230.50	54.69

APPENDIX –VIII c*4.2.2 First Formant Frequency (F1)*

Table 4.2.2.1: Mean F1 (Hz), SD and 95% confidence interval for mean of all short and long vowels

N=4320					
Vowel	n	Mean	SD	95% CI for Mean	
				Lower	Upper
/i/	215	545.23	81.7	534.25	556.21
/e/	502	585.64	110.09	575.99	595.3
/a/	574	809.3	124.26	799.11	819.48
/o/	357	589.45	105.72	578.45	600.46
/u/	643	535.38	72.85	529.74	541.03
/i:/	288	538.44	84.32	528.66	548.22
/e:/	429	547.6	95.46	538.54	556.66
/a:/	719	866.18	104.55	858.52	873.83
/o:/	287	542.01	88.37	531.74	552.28
/u:/	286	521.49	65.31	513.88	529.09

Table 4.2.2.2: Mean F1 (Hz), SD and 95% confidence interval for mean values for front, central and back vowels.

N=4320					
Place of constriction	n	Mean	SD	95% CI for Mean	
				Lower	Upper
Front	1434	558.72	98.9	553.6	563.84
Central	1293	840.93	117.14	834.54	847.32
Back	1573	546.34	86.49	542.06	550.61

Table 4.2.2.3: Mean F1 (Hz), SD and 95% confidence interval for mean for three age groups

N=4320

Vowel	Children					Adolescent					Adult				
	n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean	
				Lower	Upper				Lower	Upper				Lower	Upper
/i/	71	586.82	82.87	567.21	606.44	72	546.66	72.57	529.61	563.72	72	502.77	486.98	486.98	518.56
/e/	167	637.24	111.03	620.28	654.20	168	587.38	101.25	571.96	602.80	167	532.30	518.31	518.31	546.29
/a/	191	885.76	87.61	873.26	898.27	192	811.44	112.63	795.41	827.48	191	730.67	713.76	713.76	747.58
/o/	117	630.55	106.88	610.98	650.12	120	603.35	103.19	584.70	622.00	120	535.48	520.51	520.51	550.46
/u/	213	572.45	66.48	563.47	581.43	216	538.15	69.13	528.88	547.42	214	495.70	487.39	487.39	504.02
/i:/	96	576.33	89.75	558.15	594.52	96	546.03	70.41	531.76	560.30	96	492.95	478.82	478.82	507.09
/e:/	142	600.21	95.96	584.29	616.13	143	555.92	89.91	541.06	570.78	144	487.46	477.42	477.42	497.49
/a:/	240	924.88	60.46	917.20	932.57	240	876.35	94.10	864.38	888.32	239	797.01	783.04	783.04	810.99
/o:/	95	589.97	82.05	573.25	606.68	96	561.05	80.89	544.66	577.44	96	475.51	464.10	464.10	486.91
/u:/	95	546.51	63.98	533.48	559.54	95	528.02	64.24	514.94	541.11	96	490.25	479.40	479.40	501.37

Table 4.2.2.4: Mean F1 (Hz), SD and 95% confidence interval for mean values across gender

N=4320

Vowel	Female					Male				
	n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean	
				Lower	Upper				Lower	Upper
/i/	108	580.56	65.93	567.98	593.13	107	509.57	80.80	494.08	525.05
/e/	252	604.02	107.05	590.74	617.30	250	567.12	110.21	553.39	580.85
/a/	288	851.47	97.99	840.10	862.83	286	766.83	133.29	751.31	782.34
/o/	179	611.69	110.23	595.43	627.95	178	567.10	96.23	552.86	581.33
/u/	322	564.08	60.20	557.48	570.68	321	506.60	73.16	498.57	514.64
/i:/	144	574.64	69.13	563.31	586.08	144	502.19	87.72	488.56	515.81
/e:/	214	552.29	78.15	541.76	562.83	215	542.92	110.02	528.13	557.71
/a:/	360	899.31	80.17	891.00	907.62	359	832.95	115.17	821.00	844.91
/o:/	143	545.30	85.37	531.19	559.41	144	538.74	91.42	523.68	553.87
/u:/	142	542.70	52.22	534.04	551.37	144	500.56	70.17	489.01	512.12

Table 4.2.2.5: Mean F1 (Hz), SD and 95% confidence interval for mean values for three regions

N=4320

Vowel	Coastal					Rayalaseema					Telengana				
	n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean	
				Lower	Upper				Lower	Upper				Lower	Upper
/i/	72	530.87	81.55	511.70	550.03	72	552.71	88.38	531.95	573.48	71	552.20	73.58	534.78	569.61
/e/	167	583.90	127.07	564.49	603.31	167	587.53	107.60	571.09	603.97	168	585.5	93.78	571.22	599.79
/a/	191	797.83	129.67	779.32	816.34	192	795.29	117.13	778.62	811.96	191	834.84	122.36	817.38	852.31
/o/	119	579.73	106.95	560.31	599.14	120	587.39	96.03	570.03	604.75	118	601.36	113.36	580.69	622.03
/u/	213	525.92	77.27	515.48	536.35	215	542.56	71.97	532.88	552.23	215	537.59	68.43	528.39	546.79
/i:/	96	525.23	83.65	508.28	542.18	96	538.92	89.81	520.73	557.12	96	551.16	77.94	535.37	566.96
/e:/	142	548.00	106.07	530.41	565.60	143	544.76	96.52	528.80	560.71	144	530.02	83.17	536.32	563.72
/a:/	239	851.50	115.82	836.75	866.26	240	866.32	93.84	854.38	878.25	240	880.65	101.22	867.78	893.52
/o:/	95	534.86	100.74	514.34	555.38	96	537.36	73.66	522.43	552.28	96	553.74	88.48	535.81	571.66
/u:/	94	509.75	59.94	496.97	521.53	96	522.42	70.17	508.21	536.64	96	532.53	63.89	519.59	545.48

Table 4.2.2.6: Mean F1 (Hz) of vowels preceded by different (manner of articulation) consonants

N=4320

Vowel	Manner of articulation	n	Mean	Std. Deviation
/i/	Stop	143	542.25	82.285
	Nasal	72	551.14	80.730
/e/	Stop	144	529.32	78.542
	Affricate	72	535.51	77.358
	Nasal	72	560.91	85.508
	Semi vowel	71	664.68	126.440
	Lateral	71	648.35	112.311
	Trill	72	633.38	97.487
/a/	Stop	214	796.75	128.436
	Nasal	72	838.36	113.736
	Fricative	72	787.22	126.218
	Semi vowel	144	795.46	123.248
/o/	Lateral	72	867.27	100.200
	Stop	214	579.36	98.744
/u/	Nasal	143	604.56	114.075
	Stop	356	532.27	72.070
	Affricate	143	539.48	77.978
	Fricative	72	546.86	70.974
/i:/	Trill	72	531.17	67.740
	Stop	144	535.86	84.725
	Affricate	72	536.99	92.462
/e:/	Nasal	72	545.06	75.307
	Stop	285	538.00	84.966
	Affricate	72	522.34	72.019
/a:/	Nasal	72	610.83	125.705
	Stop	432	868.70	104.498
	Affricate	72	885.34	100.193
	Nasal	143	851.20	104.490
/o:/	Fricative	72	861.63	107.150
	Stop	216	548.42	92.509
/u:/	Affricate	71	522.49	71.447
	Stop	142	518.17	69.149
	Nasal	144	524.75	61.354

Table 4.2.2.7: Mean F1 (Hz) of vowels preceded by different (place of articulation) consonants

N=4320				
Vowel	Place of articulation	n	Mean	Std. Deviation
/i/	Bilabial	72	544.58	85.354
	Dental	71	539.89	79.590
	Alveopalatal	72	551.14	80.730
/e/	Bilabial	215	584.07	112.917
	Alveopalatal	215	605.55	108.550
	Retroflex	72	530.91	85.578
/a/	Bilabial	144	805.23	123.153
	Alveopalatal	288	825.05	116.662
	Velar	142	781.48	135.497
/o/	Bilabial	214	574.22	94.443
	Dental	71	616.81	112.427
	Alveopalatal	72	607.75	122.624
/u/	Bilabial	142	522.41	65.221
	Dental	142	542.73	77.646
	Alveopalatal	287	539.25	73.755
	Velar	72	531.10	71.661
/i:/	Bilabial	72	535.02	87.389
	Alveopalatal	144	541.02	84.124
	Velar	72	536.69	82.580
/e:/	Bilabial	144	588.28	116.438
	Dental	70	514.90	64.716
	Alveopalatal	72	522.34	72.019
	Velar	143	535.36	80.666
/a:/	Bilabial	215	858.77	102.232
	Dental	144	875.19	97.367
	Alveopalatal	216	867.33	105.164
	Velar	144	866.49	113.852
/o:/	Bilabial	72	548.27	82.726
	Dental	72	576.30	106.466
	Alveopalatal	71	522.49	71.447
	Retroflex	72	520.70	78.543
/u:/	Bilabial	143	515.04	63.097
	Dental	71	525.93	67.838
	Alveopalatal	72	529.91	66.679

Table 4.2.2.8: Mean F1 (Hz) of vowels across voicing feature of preceding consonants

N=4320

Vowel	Voiced consonant			Voiceless consonant		
	n	Mean	SD	n	Mean	SD
/i/	71	539.89	79.590	72	544.58	85.354
/e/	72	560.91	85.508	144	529.32	78.542
/a/	144	797.17	123.510	70	795.90	138.945
/o/	142	593.50	100.655	143	576.22	100.404
/u/	142	528.94	69.810	214	534.48	73.610
/i:/	72	536.69	82.580	72	535.02	87.389
/e:/	213	549.21	100.166	144	557.84	96.932
/a:/	287	861.41	105.881	216	871.36	102.317
/o:/	72	520.70	78.543	144	562.28	96.039
/u:/	143	522.75	61.803	71	510.41	70.051

APPENDIX - VIII d*4.2.3 Second Formant Frequency (F2)*

Table 4.2.3.1: Mean F2 (Hz), SD and 95% confidence interval for mean of all short and long vowels

N=4320					
Vowel	n	Mean	SD	95% Confidence Interval for Mean	
				Lower	Upper
/i/	213	2494.05	342.14	2447.84	2540.26
/e/	501	2189.68	259.07	2166.94	2212.42
/a/	573	1479.72	188.42	1464.25	1495.18
/o/	357	1124.93	171.5	1107.08	1142.78
/u/	638	947.08	80.6	940.82	953.35
/i:/	288	2507.28	326.15	2469.45	2445.11
/e:/	429	2303.32	254.92	2279.3	2327.52
/a:/	719	1480.49	197.92	1466	1494.98
/o:/	286	1135.16	174.59	1114.84	1155.47
/u:/	284	986.12	149.15	968.7	1003.54

Table 4.2.3.2: Mean F2 (Hz), SD and 95% confidence interval for mean values for front, central and back vowels

N=4320					
Place of constriction	n	Mean	SD	95% Confidence Interval for Mean	
				Lower	Upper
Front	1431	2332.98	314.74	2316.65	2349.3
Central	1292	1480.15	193.71	1469.57	1490.72
Back	1565	1029.11	161.72	1021.09	1037.13

Table 4.2.3.3: Mean F2 (Hz), SD and 95% confidence interval for mean for three age groups

N=4320

Vowel	Children					Adolescent					Adult				
	n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean	
				Lower	Upper				Lower	Upper				Lower	Upper
/i/	70	2529.8	356.53	2444.79	2614.82	71	2563.53	347.19	2481.35	2645.7	72	2390.78	300.4	2320.19	2461.37
/e/	167	2273.35	185.68	2244.98	2301.72	167	2219.62	234	2183.87	2255.37	167	2076.08	303.32	2029.74	2122.42
/a/	191	1569.16	153.47	1547.25	1595.06	192	1490.76	178.18	1465.39	1516.12	190	1378.64	182.41	1352.54	1404.75
/o/	117	1190.05	151.58	1162.29	1217.8	120	1163.1	157.96	1134.54	1191.65	120	1023.29	156.78	994.95	1051.62
/u/	211	951.12	80.19	940.24	962	214	947.29	75.14	937.16	957.41	213	942.88	86.29	931.23	954.53
/i:/	96	2423.2	363.88	2349.48	2496.93	96	2568.67	335.9	2500.61	2636.73	96	2529.97	254.29	2478.44	2581.49
/e:/	142	2301.01	262.9	2257.39	2344.63	143	2315.76	273.12	2270.62	2360.91	144	2293.25	228.04	2255.69	2330.82
/a:/	240	1616.89	154.05	1597.3	1636.48	240	1487.35	181.86	1464.23	1510.43	239	1336.63	146.75	1317.93	1355.33
/o:/	95	1229.59	144.25	1200.2	1258.97	95	1175.66	133.87	1148.38	1202.93	96	1001.63	156.67	969.88	1033.37
/u:/	94	1050.39	123.08	1029.18	1079.6	95	1019.86	137.3	991.89	1047.83	95	884.82	130.2	858.3	911.35

Table 4.2.3.4: Mean F2 (Hz), SD and 95% confidence interval for mean values across gender

N=4320

Vowel	Females					Males				
	n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean	
				Lower	Upper				Lower	Upper
/i/	107	2598.3	295.78	2541.61	2654.99	106	2388.82	254.64	2320.52	2457.12
/e/	252	2305.81	169.96	2284.73	2326.90	249	2078.15	280.20	2037.18	2107.13
/a/	287	1541.05	164.17	1521.97	1560.12	286	1418.79	191.46	1395.88	1440.46
/o/	179	1184.34	164.70	1160.05	1208.63	178	1065.20	157.22	1041.94	1088.45
/u/	318	947.74	83.26	938.55	156.92	320	946.44	77.96	937.86	955.01
/i:/	144	2558.71	330.56	2504.26	2613.16	144	2455.86	314.49	2404.05	2507.66
/e:/	214	2377.09	224.44	2346.85	2407.33	215	2229.9	262.62	2194.6	2265.21
/a:/	360	1536.13	180.62	1517.41	1554.86	359	1424.69	199.02	1404.03	1445.34
/o:/	142	1165.53	167.09	1137.81	1193.25	144	1105.21	177.21	1072.02	1134.4
/u:/	141	1022.66	137.24	11.81	1045.51	143	950.08	152.09	924.94	957.06

Table 4.2.3.5: Mean F2 (Hz), SD and 95% confidence interval for mean values across regions

N=4320

Vowel	Coastal					Rayalaseema					Telengana				
	n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean	
				Lower	Upper				Lower	Upper				Lower	Upper
/i/	72	2501.67	326.23	2425.01	2578.33	70	2522.93	367.55	2435.29	2610.57	71	2457.85	333.45	2378.93	2536.78
/e/	167	2177.35	272.16	2135.76	2218.93	166	2207.17	265.92	2166.42	2247.92	168	2184.67	238.70	2148.31	2221.03
/a/	190	1477.67	185.51	1451.12	1504.21	192	1482.04	188.77	1455.17	1508.91	191	1479.42	192.06	1452.01	1506.83
/o/	119	1116.09	152.16	1088.47	1143.71	120	1117.00	155.80	1088.84	1145.16	118	1141.93	202.52	1105.01	1178.85
/u/	212	947.61	86.75	935.86	959.35	211	942.92	81.87	931.81	954.03	215	950.66	72.88	940.86	960.46
/i:/	96	2527.26	301.21	2466.23	2588.29	96	2503.04	365.36	2429.01	2577.07	96	2491.55	310.62	2428.61	2554.48
/e:/	142	2297.35	239.43	2257.62	2337.07	143	2300.22	283.86	2253.30	2347.15	144	2312.30	240.48	2272.69	2351.92
/a:/	239	1464.02	194.20	1439.27	1488.76	240	1470.07	180.15	1447.16	1492.98	240	1507.31	215.79	1479.87	1534.75
/o:/	95	1115.71	151.34	1084.88	1146.53	95	1116.52	145.43	1086.89	1146.14	96	1172.85	213.75	1129.54	1216.16
/u:/	94	974.44	149.92	943.73	1005.14	94	991.56	147.15	961.42	1021.70	96	992.23	151.22	961.59	1022.87

Table 4.2.3.6: Mean F2 (Hz) of vowels preceded by different (manner of articulation) consonants

N=4320

Vowel	Manner of articulation	n	Mean	Std. Deviation
/i/	Stop	142	2487.81	341.578
	Nasal	71	2506.54	345.338
/e/	Stop	144	2217.40	232.612
	Affricate	72	2165.65	275.346
	Nasal	71	2234.76	236.632
	Semi vowel	71	2186.44	255.267
	Lateral	71	2167.13	279.426
	Trill	72	2139.27	290.128
/a/	Stop	214	1503.75	175.932
	Nasal	71	1500.81	150.996
	Fricative	72	1465.20	192.509
	Semi vowel	144	1407.10	204.754
	Lateral	72	1547.23	177.922
	Total	573	1479.72	188.482
/o/	Stop	214	1115.78	161.099
	Nasal	143	1138.63	185.712
/u/	Stop	353	953.73	79.614
	Affricate	141	936.76	88.072
	Fricative	72	952.68	59.583
	Trill	72	929.13	85.034
/i:/	Stop	144	2508.71	332.766
	Affricate	72	2510.25	320.129
	Nasal	72	2501.46	323.180
/e:/	Stop	285	2302.31	266.851
	Affricate	72	2337.48	228.732
	Nasal	72	2273.18	229.033
/a:/	Stop	432	1485.71	188.553
	Affricate	72	1584.54	211.665
	Nasal	143	1419.66	184.698
	Fricative	72	1465.93	220.137
/o:/	Stop	215	1128.11	171.982
	Affricate	71	1156.49	181.824
/u:/	Stop	142	988.07	142.886
	Nasal	142	984.17	155.642

Table 4.2.3.7: Mean F2 (Hz) of vowels preceded by different (place of articulation) consonants

N=4320

Vowel	Place of articulation	n	Mean	Std. Deviation
/i/	Bilabial	71	2513.15	365.260
	Dental	71	2462.47	316.703
	Alveopalatal	71	2506.54	345.338
/e/	Bilabial	214	2220.60	232.606
	Alveopalatal	215	2157.30	280.687
	Retroflex	72	2194.50	258.472
/a/	Bilabial	144	1393.47	183.375
	Alveopalatal	287	1496.58	182.519
	Velar	142	1533.10	177.192
/o/	Bilabial	214	1086.37	151.340
	Dental	71	1191.62	165.540
	Alveopalatal	72	1173.81	200.961
/u/	Bilabial	140	949.55	88.463
	Dental	142	964.28	68.233
	Alveopalatal	285	938.85	81.200
	Velar	71	940.87	80.790
/i:/	Bilabial	72	2521.91	315.006
	Alveopalatal	144	2505.85	320.562
	Velar	72	2495.51	351.346
/e:/	Bilabial	144	2301.40	232.921
	Dental	70	2312.94	266.292
	Alveopalatal	72	2337.48	228.732
	Velar	143	2283.36	282.077
/a:/	Bilabial	215	1425.42	185.212
	Dental	144	1503.24	191.383
	Alveopalatal	216	1504.70	213.739
	Velar	144	1503.64	183.084
/o:/	Bilabial	71	1063.26	149.939
	Dental	72	1161.33	163.506
	Alveopalatal	71	1156.49	181.824
	Retroflex	72	1158.84	184.307
/u:/	Bilabial	141	941.05	134.022
	Dental	71	1039.64	139.346
	Alveopalatal	72	1021.60	161.033

Table 4.2.3.8: Mean F2 (Hz) of vowels across voicing feature of preceding consonants

Vowels	N=4320					
	Voiced consonant			Voiceless consonant		
	n	mean	SD	n	mean	SD
/i/	71	2462.47	316.7	71	2513.15	365.26
/e/	71	2234.76	236.63	144	2217.4	232.61
/a/	144	1530.16	169.77	70	1449.42	177.09
/o/	142	1105.59	150.93	143	1119.54	171.19
/u/	140	947.11	86.68	213	958.08	74.49
/i:/	72	2495.51	351.35	72	2521.91	315.01
/e:/	213	2293.95	258.8	144	2300.12	261.71
/a:/	287	1461.65	193.38	216	1481.31	185.25
/o:/	72	1158.84	184.31	143	1112.64	163.92
/u:/	141	992.98	147.36	71	936.5	127.72

APPENDIX – VIII e*4.2.4 Third Formant Frequency (F3)*

Table 4.2.4.1: Mean F3 (Hz), SD and 95% confidence interval for mean of all short and long vowels

Vowel	n	Mean	SD	N=4320	
				95% CI for mean	
				Lower	Upper
/i/	214	3232.28	459.26	3170.4	3292.16
/e/	490	3115.47	444.42	3076.02	3154.92
/a/	545	3069.08	277.44	3005.74	3177.24
/o/	298	3110.41	490.65	3054.47	3166.34
/u/	492	3033.38	464.883	2992.21	3074.56
/i:/	284	3436.57	434.65	3385.8	3487.34
/e:/	427	3288.07	462.48	3244.08	3332.06
/a:/	690	3096.73	444.19	3063.53	3129.93
/o:/	265	3147.06	440.24	3093.81	3200.3
/u:/	204	3032.45	447.96	2970.61	3094.21

Table 4.2.4.2: Mean F3 (Hz), SD and 95% confidence interval for mean values for front, central and back vowels.

Place of constriction	n	Mean	SD	N=4320	
				95% Confidence Interval for Mean	
				Lower	Upper
Front	1415	3249.67	464.84	3225.43	3273.91
Central	1235	3075.39	465.41	3049.66	3101.12
Back	1259	2819.75	491.23	2792.33	2847.17

Table 4.2.4.3: Mean F3 (Hz), SD and 95% confidence interval for mean for three age groups

N=4320

Vowel	Children					Adolescent					Adult				
	n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean	
				Lower	Upper				Lower	Upper				Lower	Upper
/i/	71	3633.13	319.48	3557.51	3708.75	71	3124.57	375.17	3035.77	3213.37	72	2943.2	369.23	2856.46	3029.99
/e/	166	3480.63	326.65	3429.95	3531.31	166	3055.36	366.32	2999.22	3111.49	162	2811.9	353.64	2757.05	2866.79
/a/	183	3463.03	272.20	3423.32	3502.72	180	3056.82	280.62	3016.82	3096.82	182	2787.3	280.08	2747.3	2820.2
/o/	104	3499.61	407.58	3415.67	3583.55	101	3094.81	429.56	3010.03	3179.59	104	2777.5	343.27	2710.77	2844.28
/u/	181	3391.60	419.04	3323.99	3459.21	161	3020.05	414.45	2955.54	3084.55	181	2748.4	320.49	2701.38	2795.39
/i:/	95	3756.20	383.65	3678.04	3834.35	94	3321.50	407.94	3237.95	3405.06	95	3230.8	312.54	3167.14	3294.47
/e:/	144	3659.81	358.07	3599.97	3719.64	143	3186.52	381.07	3123.53	3249.51	144	3027.5	392.92	2962.79	3092.24
/a:/	231	3422.34	368.19	3374.61	3470.08	230	3073.38	388.09	3022.96	3123.80	229	2791.7	326.82	2749.17	2834.28
/o:/	91	3481.54	317.19	3415.10	3547.97	91	3131.56	373.66	3053.74	3209.37	84	2805.5	342.82	2731.08	2879.87
/u:/	73	3398.44	356.65	3304.67	3492.22	73	2990.34	449.55	2885.46	3095.23	73	2783.8	300.94	2713.56	2853.99

Table 4.2.4.4: Mean F3 (Hz), SD and 95% confidence interval for mean values across gender

N=4320

Vowel	Female					Male				
	n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean	
				Lower	Upper				Lower	Upper
/i/	107	3381.79	338.24	3316.96	3446.61	107	3082.78	514.09	2984.25	3181.31
/e/	251	3265.62	343.78	3222.88	3308.35	239	2957.79	482.63	2896.29	3019.29
/a/	271	3255.46	313.70	3215.46	3302.98	274	2962.76	236.59	2922.76	3012.74
/o/	146	3229.69	447.26	3156.53	3302.85	152	2995.83	504.42	2915.00	3076.67
/u/	238	3161.51	393.24	3111.30	3211.73	254	2913.33	494.62	2852.21	2974.45
/i:/	142	3538.10	338.34	3481.97	3594.23	142	3335.05	493.92	3253.11	3416.99
/e:/	213	3443.85	359.46	3395.30	3492.40	214	3133.03	500.76	3065.55	3200.50
/a:/	347	3219.96	380.31	3179.80	3260.11	343	2972.07	469.23	2922.23	3021.90
/o:/	129	3250.46	362.64	3187.28	3313.63	136	3048.98	484.16	2966.87	3131.08
/u:/	87	3192.52	390.46	3109.30	3275.74	117	2913.42	452.36	2830.59	2996.26

Table 4.2.4.5: Mean F3 (Hz), SD and 95% confidence interval for mean values across regions

N=4320

Vowel	Coastal					Rayalaseema					Telengana				
	n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean	
				Lower	Upper				Lower	Upper				Lower	Upper
/i/	72	3040.08	378.21	2951.2	3128.95	71	3358.10	470.37	3246.77	3469.44	71	3301.37	465.36	3191.22	3411.52
/e/	166	2976.14	373.07	2918.97	3033.31	161	3217.09	467.37	3144.35	3289.83	163	3157.00	454.76	3086.66	3227.34
/a/	182	2965.19	282.42	2925.00	3005.00	180	3209.32	289.58	3130.00	3283.30	183	3142.88	260.99	3102.00	3182.00
/o/	100	2890.33	340.74	2822.71	2957.95	103	3268.02	525.30	3165.35	3370.68	95	3171.19	506.37	3068.04	3274.35
/u/	164	2859.83	362.33	2803.96	2915.70	168	3139.19	487.14	3064.99	3213.39	160	3100.19	485.96	3024.31	3176.06
/i:/	95	3253.45	363.55	3179.39	3327.51	94	3616.99	486.63	3517.31	3716.66	95	3441.18	368.60	3366.09	3516.27
/e:/	142	3138.03	393.61	3072.73	3203.33	141	3396.08	477.57	3316.57	3475.60	144	3330.28	474.84	3252.06	3408.5
/a:/	225	2934.67	325.56	2891.90	2977.44	231	3228.52	477.60	3166.61	3290.44	234	3122.46	461.68	3062.99	3181.92
/o:/	85	2957.11	340.86	2883.59	3030.63	91	3249.07	445.85	3156.22	3341.92	89	3224.16	464.33	3126.34	3321.97
/u:/	69	2869.86	342.08	2787.68	2952.04	71	3164.98	474.61	3052.64	3277.32	64	3060.72	469.5	2943.44	3172.00

Table 4.2.4.6: Mean F3 (Hz) of vowels preceded by different (manner of articulation) consonants

N=4320

Vowel	Manner of articulation	n	Mean	Std. Deviation
/i/	Stop	142	3205.93	462.300
	Nasal	72	3284.25	451.868
/e/	Stop	142	3091.75	444.464
	Affricate	72	3067.33	467.038
	Nasal	69	3123.29	426.932
	Semi vowel	70	3204.52	454.571
	Lateral	70	3149.80	455.638
	Trill	67	3080.55	413.684
/a/	Stop	206	2448.88	280.675
	Nasal	65	2487.51	273.708
	Fricative	69	2476.86	263.918
	Semi vowel	137	2481.37	270.027
/o/	Lateral	68	2480.00	302.642
	Stop	185	3141.01	503.556
/u/	Nasal	113	3060.31	466.622
	Stop	235	3051.49	468.040
	Affricate	132	2884.05	435.349
	Fricative	63	3220.55	451.024
/i:/	Trill	62	3092.51	442.933
	Stop	142	3427.24	436.466
	Affricate	70	3411.26	413.490
/e:/	Nasal	72	3479.59	453.733
	Stop	285	3300.76	461.662
	Affricate	70	3167.92	471.585
/a:/	Nasal	72	3354.66	441.932
	Stop	423	3086.22	434.696
	Affricate	70	3071.17	474.866
	Nasal	128	3151.99	471.783
/o:/	Fricative	69	3084.55	418.018
	Stop	199	3175.48	440.744
/u:/	Affricate	66	3061.34	430.709
	Stop	107	3142.83	459.837
	Nasal	97	2910.69	402.844

Table 4.2.4.7: Mean F3 (Hz) of vowels preceded by different (place of articulation) consonants

N=4320

Vowel	Place of articulation	n	Mean	Std. Deviation
/i/	Bilabial	71	3193.44	469.871
	Dental	71	3218.43	457.604
	Alveopalatal	72	3284.25	451.868
/e/	Bilabial	209	3135.42	439.846
	Alveopalatal	209	3099.19	446.041
	Retroflex	72	3104.83	456.777
/a/	Bilabial	139	2492.46	279.146
	Alveopalatal	270	2483.84	273.981
	Velar	136	2415.88	277.649
/o/	Bilabial	169	3089.03	473.310
	Dental	66	3120.50	551.293
	Alveopalatal	63	3157.18	473.275
/u/	Bilabial	75	2937.62	443.866
	Dental	124	3141.22	449.381
	Alveopalatal	257	3016.83	462.268
	Velar	36	2979.68	526.052
/i:/	Bilabial	72	3461.63	423.131
	Alveopalatal	142	3445.91	434.178
	Velar	70	3391.87	450.062
/e:/	Bilabial	144	3317.93	446.188
	Dental	70	3282.84	426.600
	Alveopalatal	70	3167.92	471.585
	Velar	143	3319.38	485.453
/a:/	Bilabial	205	3109.64	453.508
	Dental	138	3118.50	420.636
	Alveopalatal	205	3103.98	444.221
	Velar	142	3046.47	453.692
/o:/	Bilabial	64	3204.43	459.917
	Dental	68	3153.89	454.569
	Alveopalatal	66	3061.34	430.709
	Retroflex	67	3169.75	412.027
/u:/	Bilabial	89	2992.28	419.007
	Dental	63	3185.28	461.102
	Alveopalatal	52	2916.06	437.985

Table 4.2.4.8: Mean F3 (Hz) of vowels across preceding voicing feature of consonants

N=4320

Vowels	Voiced consonant			Voiceless consonant		
	n	Mean	SD	n	Mean	SD
/i/	71	3218.43	457.6	71	3193.44	469.87
/e/	69	3123.29	426.93	142	3091.75	444.46
/a/	141	3063.35	277.01	65	3017.49	288.14
/o/	114	3052.96	478.22	121	3140.18	509.48
/u/	100	3132.63	435.12	135	2991.39	483.85
/i:/	70	3391.87	450.06	72	3461.63	423.13
/e:/	213	3302.4	456.78	144	3325.3	460.2
/a:/	276	3111.39	460.6	209	3070.25	422.49
/o:/	67	3169.75	412.03	132	3178.39	456.13
/u:/	108	3068.28	443.48	44	3082.07	456.37

APPENDIX - VIII f*4.2.5 Fourth Formant Frequency (F4)*

Table 4.2.5.1: Mean F4 (Hz), SD and 95% confidence interval for mean of all short and long vowels

N=4320					
Vowel	n	Mean	SD	95% CI for mean	
				Lower	Upper
/i/	186	4349.84	446.39	4285.27	4414.42
/e/	431	4256.19	410.96	4207.28	4285.1
/a/	481	4247.04	435.21	4208.05	4286.04
/o/	267	4207.54	446.09	4153.79	4261.29
/u/	409	4185.72	481.86	4138.88	4232.56
/i:/	250	4383.11	429.71	4329.58	4436.64
/e:/	380	4352.44	437.36	4308.33	4396.56
/a:/	608	4280.79	401.7	4248.8	4312.79
/o:/	252	4262.15	494.48	4200.81	4323.5
/u:/	181	4212.41	468.14	4143.75	4281.07

Table 4.2.5.2: Mean F4 (Hz), SD and 95% confidence interval for mean values for front, central and back vowels

N=4320					
Place of constriction	n	Mean	SD	95% CI for mean	
				Lower	Upper
Front	1247	4321.48	431.38	4297.51	4345.45
Central	1089	4212.06	417.94	4185.2	4234.91
Back	1109	4212.7	474.45	4184.74	4240.65

Table 4.2.5.3: Mean F4 (Hz), SD and 95% confidence interval for mean for three age groups

N=4320

Vowel	Children					Adolescent					Adult				
	n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean	
				Lower	Upper				Lower	Upper				Lower	Upper
/i/	52	4696.04	372.17	4592.42	4799.65	67	4322.99	389.87	4227.89	4418.08	67	4108.00	380.79	4015.13	4200.90
/e/	131	4592.27	312.21	4538.31	4636.24	148	4249.33	335.34	4194.86	4299.81	152	4017.20	397.49	3953.47	4080.87
/a/	156	4586.42	298.68	4539.18	4633.65	162	4237.93	337.95	4185.50	4290.37	163	3931.30	388.67	3871.18	3991.42
/o/	78	4574.37	306.75	4505.21	4643.53	96	4213.55	360.15	4140.58	4286.53	93	3893.70	385.94	3814.20	3973.17
/u/	117	4564.68	394.09	4492.52	4636.85	135	4201.36	378.28	4136.97	4265.75	157	3889.90	415.76	3824.31	3955.40
/i:/	76	4711.42	286.39	4645.98	4776.87	88	4337.25	377.00	4257.37	4417.13	86	4139.90	405.80	4052.90	4226.90
/e:/	116	4698.69	346.37	4634.99	4762.39	133	4313.69	358.25	4252.24	4375.14	131	4085.20	375.13	4020.33	4150.02
/a:/	205	4694.79	271.14	4657.45	4732.12	205	4292.15	527.74	4227.02	4337.28	198	3864.70	326.67	3818.87	3910.43
/o:/	84	4683.65	346.30	4608.49	4758.80	88	4275.77	317.25	4208.55	4342.98	80	3804.60	372.74	3721.66	3887.56
/u:/	49	4591.29	333.93	4495.37	4687.20	68	4267.45	389.86	4173.08	4361.81	64	3793.90	375.81	3709.99	3887.74

Table 4.2.5.4: Mean F4 (Hz), SD and 95% confidence interval for mean values across gender

N=4320

Vowel	Female					Male				
	n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean	
				Lower	Upper				Lower	Upper
/i/	95	4513.49	312.58	4449.81	4577.17	91	4179.01	499.78	4074.92	4283.09
/e/	215	4409.91	310.52	4368.17	4451.65	216	4098.17	433.96	4025.03	4151.43
/a/	233	4405.51	337.19	4361.98	4449.03	248	4083.23	464.06	4020.13	4156.21
/o/	130	4380.54	327.24	4323.76	4437.33	137	4043.38	481.54	3962.03	4124.74
/u/	198	4355.54	400.17	4299.45	4411.62	211	4026.36	498.18	3958.75	4093.97
/i:/	124	4529.18	283.90	4478.72	4579.65	126	4239.35	496.51	4151.81	4326.89
/e:/	185	4522.54	348.50	4471.99	4573.09	195	4191.06	452.47	4127.15	4254.97
/a:/	291	4500.60	313.80	4454.40	4566.81	317	4114.47	440.73	4021.10	4207.84
/o:/	126	4409.84	408.11	4357.88	4481.79	126	4070.81	529.59	4001.10	4159.51
/u:/	77	4395.90	331.67	4320.62	4471.18	104	4036.56	507.95	3977.78	4165.35

Table 4.2.5.5: Mean F4 (Hz), SD and 95% confidence interval for mean values across regions

N=4320

Vowel	Coastal					Rayalaseema					Telengana				
	n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean	
				Lower	Upper				Lower	Upper				Lower	Upper
/i/	62	4255.30	427.03	4146.86	4363.75	55	4413.78	421.29	4299.88	4527.67	69	4383.83	474.32	4269.89	4497.78
/e/	152	4215.10	382.87	4276.46	4376.46	122	4354.79	413.59	4180.66	4382.92	157	4269.62	435.22	4201.01	4338.23
/a/	158	4185.56	384.06	4245.91	4345.91	156	4300.20	462.63	4227.03	4373.37	167	4255.56	449.46	4186.90	4324.23
/o/	91	4124.66	393.07	4206.52	4286.52	87	4241.08	461.64	4142.69	4339.47	89	4159.51	473.57	4059.75	4359.27
/u/	131	4087.26	428.05	4013.27	4161.25	142	4221.88	520.40	4135.55	4308.22	136	4142.80	477.89	4061.75	4323.84
/i:/	91	4329.95	385.19	4249.73	4480.17	71	4428.82	449.64	4322.39	4535.25	88	4431.20	455.35	4304.72	4497.68
/e:/	130	4307.61	380.73	4241.54	4403.68	111	4346.78	453.81	4261.42	4432.15	139	4398.88	470.73	4319.94	4477.83
/a:/	202	4199.90	356.63	4060.43	4259.38	194	4303.47	446.56	4180.23	4306.70	212	4370.98	390.02	4138.18	4393.79
/o:/	79	4182.57	420.04	4276.65	4376.65	86	4283.81	545.06	4166.94	4400.67	87	4313.02	501.07	4206.22	4419.81
/u:/	59	4099.26	432.71	3986.49	4212.02	67	4257.38	509.64	4133.07	4381.69	55	4279.01	436.97	4160.88	4397.14

Table 4.2.5.6: Mean F4 (Hz) of vowels preceded by different (manner of articulation) consonants

N=4320

Vowel	Manner of articulation	n	Mean	Std. Deviation
/i/	Stop	123	4332.35	473.666
	Nasal	63	4384.00	389.007
/e/	Stop	134	4257.18	402.616
	Affricate	67	4133.34	413.089
	Nasal	65	4186.23	387.064
	Semi vowel	59	4330.70	386.884
/a/	Lateral	59	4368.63	431.072
	Trill	47	4198.88	423.226
	Stop	192	4231.86	475.018
	Nasal	53	4240.84	395.422
/o/	Fricative	66	4233.70	422.251
	Semi vowel	119	4247.58	415.438
	Lateral	51	4326.67	383.471
/u/	Stop	169	4233.78	447.866
	Nasal	98	4162.30	441.614
/i:/	Stop	211	4212.81	473.046
	Affricate	105	4025.70	481.650
	Fricative	54	4388.98	480.031
	Trill	39	4188.49	408.081
/e:/	Stop	126	4402.94	431.559
	Affricate	60	4327.46	408.789
	Nasal	64	4396.24	447.082
/a:/	Stop	254	4382.10	450.633
	Affricate	64	4264.59	429.874
	Nasal	62	4321.60	377.685
/o:/	Stop	389	4211.66	398.819
	Affricate	57	4120.80	425.665
	Nasal	101	4112.70	398.463
	Fricative	61	4152.73	389.827
/u:/	Stop	190	4282.21	489.661
	Affricate	62	4200.70	508.067
/u:/	Stop	103	4278.04	503.595
	Nasal	78	4125.75	403.725

Table 4.2.5.7: Mean F4 (Hz) of vowels preceded by different (place of articulation) consonants

N=4320				
Vowel	Place of articulation	n	Mean	Std. Deviation
/i/	Bilabial	62	4261.32	432.646
	Dental	61	4404.55	505.353
	Alveopalatal	63	4384.00	389.007
/e/	Bilabial	192	4250.64	387.766
	Alveopalatal	173	4231.39	431.902
	Retroflex	66	4272.05	424.862
/a/	Bilabial	127	4272.28	429.722
	Alveopalatal	226	4260.08	402.537
	Velar	128	4198.99	492.278
/o/	Bilabial	155	4207.20	459.236
	Dental	58	4212.78	447.254
	Alveopalatal	54	4202.90	413.205
/u/	Bilabial	63	4074.78	453.236
	Dental	118	4291.85	462.497
	Alveopalatal	198	4156.84	490.634
	Velar	30	4191.80	500.984
/i:/	Bilabial	63	4403.00	411.963
	Alveopalatal	124	4362.96	428.634
	Velar	63	4402.87	453.626
/e:/	Bilabial	127	4357.62	408.647
	Dental	67	4378.09	478.211
	Alveopalatal	64	4264.59	429.874
	Velar	122	4379.05	446.219
/a:/	Bilabial	180	4176.28	387.380
	Dental	125	4233.43	386.813
	Alveopalatal	171	4134.63	405.588
	Velar	132	4196.89	426.413
/o:/	Bilabial	61	4304.34	519.490
	Dental	65	4277.49	476.885
	Alveopalatal	62	4200.70	508.067
	Retroflex	64	4265.91	480.092
/u:/	Bilabial	79	4165.80	490.810
	Dental	59	4335.55	460.848
	Alveopalatal	43	4129.09	407.530

Table 4.2.5.8: Mean F4 (Hz) of vowels across preceding voicing feature of consonants

Vowels	N=4320					
	Voiced consonants			Voiceless consonants		
	n	Mean	SD	n	Mean	SD
/i/	61	4404.55	505.35	62	4261.32	432.65
/e/	65	4186.23	387.06	134	4257.18	402.62
/a/	129	4230.85	455.12	63	4233.93	517.21
/o/	101	4173.49	470.77	112	4240.5	439.91
/u/	98	4276.36	449.49	113	4157.71	487.85
/i:/	63	4402.87	453.63	63	4403	411.96
/e:/	189	4353.55	434.75	127	4395.06	441.83
/a:/	247	4185.21	407.14	190	4216.59	388.95
/o:/	64	4265.91	480.09	126	4290.49	496.14
/u:/	94	4255.9	450.77	44	4200.92	551.81

APPENDIX – VIII g*4.2.6 First Formant Bandwidth (B1)*

Table 4.2.6.1: Mean B1 (Hz), SD and 95% confidence interval for mean of all short and long vowels

Vowel	n	Mean	SD	N=4320	
				95% CI for mean	
				Lower	Upper
/i/	215	58.55	18.59	56.05	61.05
/e/	502	56.39	17.04	54.9	57.89
/a/	570	57.71	20.19	56.05	59.37
/o/	355	57.78	19.05	55.79	59.77
/u/	630	56.69	19.25	55.19	58.2
/i:/	287	58.07	19.44	55.81	60.31
/e:/	429	55.51	16.95	53.9	57.12
/a:/	713	58.07	23.69	56.33	59.81
/o:/	286	56.95	19.18	54.72	59.19
/u:/	282	56.16	21.47	53.64	58.68

Table 4.2.6.2: Mean B1 (Hz), SD and 95% confidence interval for mean values for front, central and back vowels

Place of constriction	n	Mean	SD	N=4320	
				95% CI for mean	
				Lower	Upper
Front	1433	56.79	17.77	55.87	57.71
Central	1283	57.91	22.19	56.69	59.12
Back	1553	56.89	19.6	55.92	57.87

Table 4.2.6.3: Mean B1 (Hz), SD and 95% confidence interval for mean for three age groups

N=4320

Vowel	Children					Adolescent					Adult				
	n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean	
				Lower	Upper				Lower	Upper				Lower	Upper
/i/	71	62.47	23.34	56.95	68.00	72	56.11	12.47	53.18	59.04	72	57.12	18.06	52.88	61.36
/e/	167	56.18	18.37	53.37	58.98	168	55.88	12.13	54.03	57.73	167	57.12	19.74	54.11	60.14
/a/	191	60.81	25.11	57.22	64.39	191	56.19	13.24	54.30	58.08	188	56.10	20.17	53.20	59.00
/o/	117	60.31	22.50	56.14	64.43	118	54.56	11.89	52.40	56.73	120	58.48	20.74	54.73	62.23
/u/	208	57.80	19.60	55.12	60.48	213	54.54	13.80	52.68	56.40	209	57.78	23.16	54.63	60.94
/i:/	96	60.93	22.90	56.29	65.57	95	56.15	15.74	52.94	59.35	96	57.10	18.84	53.28	60.91
/e:/	142	55.00	19.48	52.37	58.83	143	54.60	12.54	52.53	56.67	144	56.33	18.10	53.35	59.31
/a:/	237	61.92	28.95	58.21	65.62	240	54.76	14.72	52.89	56.63	236	57.58	24.73	54.40	60.75
/o:/	95	52.18	20.36	53.98	62.27	96	54.15	13.99	51.32	56.98	95	57.62	22.16	54.10	63.13
/u:/	93	60.15	26.98	54.55	65.71	95	54.75	17.30	51.23	58.28	94	53.63	18.59	49.83	57.44

Table 4.2.6.4: Mean B1 (Hz), SD and 95% confidence interval for mean values across gender

N=4320

Vowel	Female					Male				
	n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean	
				Lower	Upper				Lower	Upper
/i/	108	60.46	17.64	57.10	63.83	107	56.62	19.39	52.90	60.33
/e/	252	56.83	16.72	54.76	58.91	250	55.95	17.38	53.79	58.12
/a/	286	60.28	23.10	57.59	62.97	284	55.12	16.39	53.20	57.03
/o/	179	59.90	21.64	56.71	63.09	176	55.63	15.77	53.28	57.97
/u/	318	57.67	19.28	55.55	59.80	312	55.69	19.19	53.56	57.83
/i:/	143	58.43	18.72	55.33	61.52	144	57.71	20.18	54.38	61.03
/e:/	214	55.01	15.32	52.95	57.08	215	56.01	18.44	53.53	58.49
/a:/	355	59.34	24.99	56.73	61.95	358	56.82	22.29	54.50	59.13
/o:/	142	57.68	17.55	54.77	60.59	144	56.23	20.71	52.82	59.64
/u:/	140	57.56	22.40	53.82	61.31	142	54.78	20.49	51.38	58.18

Table 4.2.6.5: Mean B1 (Hz), SD and 95% confidence interval for mean values across regions

Vowel	Coastal					Rayalaseema					Telengana				
	n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean	
				Lower	Upper				Lower	Upper				Lower	Upper
/i/	72	60.42	19.61	55.81	65.02	72	61.29	23.78	55.70	66.88	71	53.87	7.75	52.04	55.71
/e/	167	61.35	19.59	58.35	64.34	167	56.51	19.05	53.60	59.43	168	51.35	8.87	50.00	52.70
/a/	188	60.09	20.33	57.17	63.02	191	62.74	25.77	59.07	66.42	191	50.32	7.95	49.18	51.45
/o/	119	61.86	19.79	58.27	65.45	118	60.65	23.28	56.41	64.90	118	50.79	9.31	49.10	52.49
/u/	210	61.61	22.84	58.51	64.72	207	57.37	21.49	54.43	60.32	213	51.18	9.00	49.97	52.40
/i:/	95	62.48	18.12	58.79	66.17	96	59.05	25.74	53.83	64.26	96	52.72	10.03	50.69	54.75
/e:/	142	60.41	17.87	57.45	63.38	143	55.13	20.36	51.76	58.49	144	51.06	9.44	49.51	52.62
/a:/	236	60.27	24.52	57.12	63.41	237	64.11	30.31	60.23	67.98	240	49.96	8.14	48.92	50.99
/o:/	94	62.43	21.15	58.09	66.76	96	58.20	22.52	53.64	62.77	96	50.34	9.11	48.50	52.19
/u:/	92	57.96	19.58	53.90	62.02	94	60.23	29.84	54.12	66.34	96	50.45	8.46	48.74	52.17

N=4320

Table 4.2.6.6: Mean B1 (Hz) and SD of vowels preceded by different (manner of articulation) consonants

N=4320

Vowel	Manner of articulation	n	Mean	Std. Deviation
/i/	Stop	143	58.99	19.504
	Nasal	72	57.67	16.732
/e/	Stop	144	57.55	16.208
	Affricate	72	54.10	15.015
	Nasal	72	58.12	18.686
	Semi vowel	71	57.90	15.643
	Lateral	71	52.04	13.016
	Trill	72	57.45	22.428
/a/	Stop	211	58.96	22.696
	Nasal	71	58.94	21.214
	Fricative	72	55.91	15.792
	Semi vowel	144	55.93	18.390
/o/	Lateral	72	58.16	18.757
	Stop	212	57.61	18.930
/u/	Nasal	143	58.04	19.288
	Stop	347	56.52	19.993
	Affricate	142	58.38	19.394
	Fricative	69	55.72	16.711
/i:/	Trill	72	55.10	17.594
	Stop	143	57.97	18.635
	Affricate	72	54.25	15.755
/e:/	Nasal	72	62.08	23.405
	Stop	285	54.71	15.342
	Affricate	72	54.47	17.723
/a:/	Nasal	72	59.74	21.295
	Stop	429	58.80	24.643
	Affricate	71	57.27	24.145
	Nasal	141	56.68	21.637
/o:/	Fricative	72	57.24	21.454
	Stop	216	56.99	18.582
/u:/	Affricate	70	56.83	21.067
	Stop	140	55.06	20.442
	Nasal	142	57.25	22.449

Table 4.2.6.7: Mean B1 (Hz) and SD of vowels preceded by different (place of articulation) consonants

N=4320

Vowel	Place of articulation	n	Mean	Std. Deviation
/i/	Bilabial	72	59.21	19.741
	Dental	71	58.77	19.398
	Alveopalatal	72	57.67	16.732
/e/	Bilabial	215	57.41	16.328
	Alveopalatal	215	54.54	17.381
	Retroflex	72	58.87	17.738
/a/	Bilabial	141	56.99	20.948
	Alveopalatal	287	56.94	17.611
	Velar	142	59.96	23.934
/o/	Bilabial	213	57.49	18.179
	Dental	70	58.17	20.653
	Alveopalatal	72	58.27	20.181
/u/	Bilabial	137	56.93	21.184
	Dental	140	55.44	18.232
	Alveopalatal	283	56.90	18.320
	Velar	70	57.89	21.113
/i:/	Bilabial	72	57.33	17.576
	Alveopalatal	144	58.17	20.264
	Velar	71	58.61	19.755
/e:/	Bilabial	144	56.25	18.188
	Dental	70	52.90	13.366
	Alveopalatal	72	54.47	17.723
	Velar	143	56.58	16.818
/a:/	Bilabial	214	57.47	23.536
	Dental	144	58.34	23.260
	Alveopalatal	213	56.97	22.231
	Velar	142	60.36	26.408
/o:/	Bilabial	72	58.05	19.601
	Dental	72	58.45	20.032
	Alveopalatal	70	56.83	21.067
	Retroflex	72	54.48	15.825
/u:/	Bilabial	142	56.84	21.482
	Dental	70	52.99	19.916
	Alveopalatal	70	57.96	22.858

Table 4.2.6.8: Mean B1 (Hz) of vowels across preceding voicing feature of consonants

Vowels	N=4320					
	Voiced consonants			Voiceless consonants		
	n	Mean	SD	n	Mean	SD
/i/	71	58.77	19.398	72	59.21	19.741
/e/	72	58.12	18.686	144	57.55	16.208
/a/	141	57.56	18.995	70	61.80	28.695
/o/	141	57.77	19.038	142	57.54	18.598
/u/	139	55.78	20.466	208	57.02	19.705
/i:/	71	58.61	19.755	72	57.33	17.576
/e:/	213	55.65	17.668	144	55.83	15.491
/a:/	287	58.91	24.661	213	58.05	23.829
/o:/	72	54.48	15.825	144	58.25	19.749
/u:/	142	54.79	21.097	70	57.13	20.892

APPENDIX – VIII h*4.2.7 Second Formant Bandwidth (B2)*

Table 4.2.7.1: Mean B2 (Hz), SD and 95% confidence interval for mean of all short and long vowels

Vowel	n	Mean	SD	N=4320	
				95% CI for mean	
				Lower	Upper
/i/	212	133.97	17.53	131.6	136.35
/e/	496	137.73	16.04	136.32	139.15
/a/	566	137.11	15.04	135.87	138.35
/o/	351	134.75	16.48	133.02	136.48
/u/	608	136.9	17.1	135.53	138.26
/i:/	287	134.07	17	132.1	136.04
/e:/	428	137.63	17	136.01	139.24
/a:/	714	137.57	16.04	136.39	138.75
/o:/	282	136.12	18.42	133.96	138.28
/u:/	273	134.67	15.27	132.85	136.49

Table 4.2.7.2: Mean B2 (Hz), SD and 95% confidence interval for mean values for front, central and back vowels

Place of constriction	n	Mean	SD	N=4320	
				95% CI for mean	
				Lower	Upper
Front	1423	136.4	16.82	135.53	137.28
Central	1280	137.37	15.6	136.51	138.22
Back	1514	135.85	16.91	135	136.7

Table 4.2.7.3: Mean B2 (Hz), SD and 95% confidence interval for mean for three age groups

N=4320

Vowel	Children					Adolescent					Adult				
	n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean	
				Lower	Upper				Lower	Upper				Lower	Upper
/i/	69	134.94	14.22	131.52	138.35	71	136.46	16.39	132.59	140.34	72	130.60	20.88	125.69	135.50
/e/	163	140.22	18.69	137.33	143.11	166	136.62	12.39	134.73	138.52	167	136.40	16.27	133.92	138.89
/a/	190	136.65	17.81	134.10	139.20	191	136.90	13.10	135.03	138.77	185	137.80	13.82	135.80	139.81
/o/	117	133.10	17.23	129.25	136.25	118	133.91	16.71	130.86	136.96	116	137.27	15.30	134.45	140.08
/u/	205	135.11	17.55	132.69	137.53	200	137.63	16.16	135.38	139.89	203	137.97	17.47	135.56	140.39
/i:/	96	137.08	15.82	133.87	140.28	95	132.71	16.31	129.39	136.03	96	132.42	18.40	128.69	136.15
/e:/	141	140.66	20.94	137.17	144.14	143	137.13	13.00	134.98	139.29	144	135.15	15.80	132.55	137.75
/a:/	238	136.35	19.30	133.88	138.81	238	137.76	12.85	136.12	139.41	238	138.59	15.29	136.64	140.55
/o:/	94	132.45	18.50	128.66	136.24	95	135.91	16.67	132.52	139.31	93	140.05	19.42	136.05	144.05
/u:/	88	132.86	19.31	128.77	136.95	94	133.88	11.79	131.46	136.29	91	137.23	13.81	134.35	140.10

Table 4.2.7.4: Mean B2 (Hz), SD and 95% confidence interval for mean values across gender

N=4320

Vowel	Female					Male				
	n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean	
				Lower	Upper				Lower	Upper
/i/	107	135.60	15.12	132.70	138.50	105	132.32	19.61	128.52	136.12
/e/	249	138.55	17.34	136.39	140.71	247	136.91	14.60	135.08	138.74
/a/	284	138.85	16.27	136.95	140.75	282	135.36	13.50	133.77	136.94
/o/	178	134.80	16.23	132.40	137.20	173	134.69	16.79	132.17	137.21
/u/	305	136.60	16.60	134.73	138.47	303	137.20	17.61	135.21	139.19
/i:/	143	136.10	15.69	133.51	138.70	144	132.06	17.97	129.10	135.01
/e:/	213	138.47	18.56	135.97	140.98	215	136.79	15.29	134.73	138.84
/a:/	357	138.41	18.47	136.49	140.33	357	136.73	13.15	135.36	138.10
/o:/	140	136.98	17.45	134.07	139.90	142	135.27	19.36	132.06	138.48
/u:/	132	135.67	14.46	133.18	138.16	141	133.73	15.99	131.07	136.39

Table 4.2.7.5: Mean B2 (Hz), SD and 95% confidence interval for mean values across region

N=4320

Vowel	Coastal					Rayalaseema					Telengana				
	n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean	
				Lower	Upper				Lower	Upper				Lower	Upper
/i/	72	133.57	18.17	129.31	137.84	69	133.89	16.49	129.93	137.86	71	134.46	18.08	130.18	138.74
/e/	166	138.27	16.27	135.77	140.76	162	140.43	17.47	137.72	143.15	168	134.60	13.76	132.50	136.70
/a/	185	136.67	13.37	134.73	138.61	190	139.72	18.34	137.09	142.34	191	134.94	12.38	133.17	136.70
/o/	117	134.62	16.15	131.66	137.58	117	135.09	19.00	131.61	138.57	117	134.54	14.08	131.96	137.11
/u/	203	137.71	17.05	135.35	140.07	194	138.14	17.99	135.59	140.68	211	134.97	16.19	132.78	137.17
/i:/	95	129.00	17.46	125.44	132.56	96	138.69	19.20	134.80	142.59	96	134.47	12.16	132.01	136.94
/e:/	142	135.92	15.83	133.29	138.55	142	142.82	20.75	139.38	146.26	144	134.19	12.24	132.17	136.20
/a:/	238	138.27	16.01	136.23	140.32	236	139.30	19.12	136.85	141.75	240	135.17	12.03	133.64	136.69
/o:/	93	137.30	19.36	133.31	141.29	94	133.99	18.14	130.28	137.71	95	137.08	17.74	133.46	140.69
/u:/	92	133.85	13.42	131.07	136.63	88	135.62	15.20	132.40	138.84	93	134.57	17.08	131.06	138.09

Table 4.2.7.6: Mean B2 (Hz) of vowels preceded by different (manner of articulation) consonants

N=4320

Vowel	Manner of articulation	n	Mean	Std. Deviation
/i/	Stop	141	134.13	15.064
	Nasal	71	133.67	21.725
/e/	Stop	141	137.60	16.280
	Affricate	72	137.04	14.305
	Nasal	70	136.99	11.871
	Semi vowel	71	140.41	19.015
	Lateral	70	136.50	19.239
	Trill	72	137.97	14.270
/a/	Stop	212	138.74	16.063
	Nasal	71	136.54	15.542
	Fricative	71	137.36	13.948
	Semi vowel	142	134.47	13.848
/o/	Lateral	70	137.83	14.332
	Stop	210	134.20	17.509
/u/	Nasal	141	135.57	14.856
	Stop	334	136.89	16.489
	Affricate	137	138.56	17.485
	Fricative	66	136.85	21.999
	Trill	71	133.79	13.498
/i:/	Stop	143	133.59	18.553
	Affricate	72	135.82	15.847
	Nasal	72	133.28	14.637
/e:/	Stop	285	138.02	18.193
	Affricate	71	135.31	13.603
	Nasal	72	138.35	14.979
/a:/	Stop	429	137.73	13.880
	Affricate	72	138.27	16.578
	Nasal	143	136.06	15.671
	Fricative	70	138.95	25.850
/o:/	Stop	213	135.87	17.361
	Affricate	69	136.88	21.483
/u:/	Stop	136	134.48	14.655
	Nasal	137	134.85	15.915

Table 4.2.7.7: Mean B2 (Hz) of vowels preceded by different (place of articulation) consonants

N=4320				
Vowel	Place of articulation	n	Mean	Std. Deviation
/i/	Bilabial	71	134.16	16.852
	Dental	70	134.09	13.126
	Alveopalatal	71	133.67	21.725
/e/	Bilabial	213	138.88	16.133
	Alveopalatal	214	137.17	16.011
	Retroflex	69	135.92	15.814
/a/	Bilabial	141	135.87	16.773
	Alveopalatal	284	136.46	14.155
	Velar	141	139.66	14.748
/o/	Bilabial	210	133.68	17.773
	Dental	70	136.08	15.107
	Alveopalatal	71	136.61	13.499
/u/	Bilabial	128	136.59	14.820
	Dental	138	138.54	17.105
	Alveopalatal	274	136.91	17.837
	Velar	68	134.08	17.970
/i:/	Bilabial	72	132.50	17.306
	Alveopalatal	144	134.55	15.254
	Velar	71	134.70	19.798
/e:/	Bilabial	144	139.78	17.684
	Dental	70	136.80	18.511
	Alveopalatal	71	135.31	13.603
	Velar	143	137.01	16.967
/a:/	Bilabial	214	136.47	14.189
	Dental	143	137.74	14.999
	Alveopalatal	214	138.28	19.921
	Velar	143	137.99	12.921
/o:/	Bilabial	70	132.60	12.559
	Dental	72	137.90	16.574
	Alveopalatal	69	136.88	21.483
	Retroflex	71	137.06	21.501
/u:/	Bilabial	133	134.27	17.013
	Dental	70	135.89	14.411
	Alveopalatal	70	134.20	12.497

Table 4.2.7.8: Mean B2 (Hz) of vowels across preceding voicing feature of consonants

N=4320

Vowels	Voiced consonants			Voiceless consonants		
	n	Mean	SD	n	Mean	SD
/i/	70	134.09	13.126	71	134.16	16.852
/e/	70	136.99	11.871	141	137.60	16.280
/a/	143	137.90	16.301	69	140.50	15.525
/o/	140	133.06	17.488	140	135.50	16.781
/u/	131	136.71	16.006	203	137.00	16.831
/i:/	71	134.70	19.798	72	132.50	17.306
/e:/	213	137.37	16.074	144	139.15	19.592
/a:/	286	137.32	13.793	214	137.19	14.464
/o:/	71	137.06	21.501	142	135.28	14.919
/u:/	137	135.71	16.703	66	132.99	14.875

APPENDIX - VIII i*4.2.8 Third Formant Bandwidth (B3)*

Table 4.2.8.1: Mean B3 (Hz), SD and 95% confidence interval for mean of all short and long vowels

N=4320					
Vowel	n	Mean	SD	95% CI for mean	
				Lower	Upper
/i/	205	229.9	18.54	227.35	232.46
/e/	469	230.26	17.62	228.66	231.86
/a/	498	228.3	17.84	226.73	229.87
/o/	274	230.37	16.63	228.39	232.35
/u/	420	229.98	19.34	228.12	231.83
/i:/	271	229.93	14.58	228.19	231.68
/e:/	419	231.93	17.44	230.26	233.61
/a:/	649	228.91	17.95	227.53	230.29
/o:/	250	227.36	20.06	224.86	229.86
/u:/	177	229.81	17.9	227.16	232.47

Table 4.2.8.2: Mean B3 (Hz), SD and 95% confidence interval for mean values for front, central and back vowels

N=4320					
Place of constriction	n	Mean	SD	95% CI or mean	
				Lower	Upper
Front	1364	230.66	17.15	229.74	231.57
Center	1147	228.65	17.89	227.61	229.68
Back	1121	229.47	18.67	228.37	230.56

Table 4.2.8.3: Mean B3 (Hz), SD and 95% confidence interval for mean for three age groups

N=4320

Vowel	Children					Adolescent					Adult				
	n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean	
				Lower	Upper				Lower	Upper				Lower	Upper
/i/	68	229.33	15.83	225.5	233.17	68	227.96	16.29	224.02	231.9	69	232.38	22.64	226.94	237.81
/e/	154	231.22	15.44	228.77	233.68	157	228.61	18.08	225.76	231.45	158	230.97	19.09	227.97	233.98
/a/	175	226.34	17.77	223.69	228.99	166	227.94	17.56	225.25	230.63	157	230.87	18	228.03	233.71
/o/	89	231.12	18.31	227.26	234.98	94	227.38	15.31	224.25	230.52	91	232.73	15.93	229.41	236.05
/u/	133	227.63	20.47	224.12	231.14	123	229.49	17.11	226.43	232.54	164	232.25	19.82	229.19	235.31
/i:/	91	231.11	15.17	227.95	234.27	89	228.45	14.29	225.44	231.46	91	230.21	14.3	227.23	233.19
/e:/	137	231.29	19.18	228.05	234.53	140	232.47	12.34	230.41	234.53	142	232.03	19.89	228.73	235.33
/a:/	220	227.87	18	225.48	230.26	216	229.36	14.9	227.37	231.36	213	229.52	20.58	226.74	232.3
/o:/	90	224.39	23.39	219.49	229.29	83	228.02	13.69	225.03	231.01	77	230.13	21.39	225.28	234.99
/u:/	49	231.98	16.74	227.17	236.79	63	227.85	17.42	223.46	232.23	65	230.08	19.22	225.32	234.84

Table 4.2.8.4: Mean B3 (Hz), SD and 95% confidence interval for mean values across gender

N=4320

Vowel	Female					Male				
	n	Mean	SD	Lower	Upper	n	Mean	SD	Lower	Upper
/i/	102	227.67	18.17	224.10	231.24	103	232.11	18.72	228.45	235.77
/e/	240	231.13	14.77	229.25	233.01	229	229.36	20.18	226.73	231.98
/a/	242	227.26	17.07	225.10	229.43	256	229.00	18.51	227.01	231.56
/o/	134	228.57	17.58	225.57	231.57	140	232.10	15.55	229.50	234.70
/u/	199	226.85	18.97	224.20	229.50	221	232.79	19.27	230.24	235.35
/i:/	130	231.36	12.25	229.24	233.49	141	228.61	16.37	225.89	231.34
/e:/	206	231.67	16.72	229.37	233.97	213	232.19	18.14	229.74	234.64
/a:/	319	228.04	16.53	226.21	229.86	330	229.76	19.21	227.68	231.84
/o:/	122	227.15	20.82	223.42	230.88	128	227.57	19.39	224.18	230.96
/u:/	73	230.09	16.38	226.27	233.91	104	229.62	18.97	225.93	233.30

Table 4.2.8.5: Mean B3 (Hz), SD and 95% confidence interval for mean values across region

N=4320

Vowel	Coastal					Rayalaseema					Telengana				
	n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean		n	Mean	SD	95% CI for mean	
				Lower	Upper				Lower	Upper				Lower	Upper
/i/	69	227.31	16.34	223.39	231.24	66	229.76	20.77	224.66	234.87	70	232.59	18.24	228.24	236.94
/e/	161	228.51	17.46	225.79	231.22	153	231.51	20.89	228.17	234.85	155	230.86	13.83	228.66	233.05
/a/	159	229.04	16.70	226.43	231.66	173	227.42	21.23	224.24	230.61	166	228.51	14.82	226.24	230.78
/o/	89	229.36	15.92	226.01	232.71	96	231.83	20.37	227.70	235.95	89	229.82	12.37	227.21	232.42
/u/	131	228.50	20.31	224.99	232.01	145	232.15	21.86	228.57	235.74	144	229.13	15.23	226.63	231.64
/i:/	91	229.15	14.42	226.15	232.15	86	231.18	18.67	227.18	235.19	94	229.55	9.75	227.55	231.54
/e:/	139	230.06	18.36	226.99	233.14	138	234.11	19.81	230.77	237.44	142	231.65	13.48	229.41	233.88
/a:/	209	226.93	19.61	224.26	229.61	216	230.55	20.78	227.76	233.34	224	229.17	12.44	227.54	230.81
/o:/	80	224.06	19.10	219.81	228.31	88	229.09	24.75	223.80	234.28	82	228.79	14.42	225.62	231.96
/u:/	59	229.25	19.10	224.28	234.23	64	229.24	20.48	224.13	234.36	54	231.09	12.82	227.59	234.59

Table 4.2.8.6: Mean B3 (Hz) of vowels preceded by different (manner of articulation) consonants

N=4320

Vowel	Manner of articulation	n	Mean	Std. Deviation
/i/	Stop	137	229.48	19.940
	Nasal	68	230.75	15.435
/e/	Stop	136	228.63	24.019
	Affricate	66	230.32	14.277
	Nasal	66	232.25	13.996
	Semi vowel	67	231.02	14.932
	Lateral	68	230.94	14.179
	Trill	66	230.11	13.916
/a/	Stop	187	228.39	18.007
	Nasal	59	228.33	16.830
	Fricative	62	223.94	20.099
	Semi vowel	127	230.43	15.377
	Lateral	63	228.03	20.145
/o/	Stop	167	230.56	17.522
	Nasal	107	230.08	15.215
/u/	Stop	201	229.68	19.981
	Affricate	106	232.12	18.536
	Fricative	54	228.86	16.775
	Trill	59	228.16	20.780
/i:/	Stop	135	228.38	15.225
	Affricate	65	230.49	14.731
	Nasal	71	232.38	12.913
/e:/	Stop	279	231.93	17.795
	Affricate	70	232.30	17.463
	Nasal	70	231.58	16.147
/a:/	Stop	402	228.70	17.907
	Affricate	66	229.34	22.156
	Nasal	118	228.31	17.240
/o:/	Fricative	63	230.89	14.565
	Stop	191	226.85	21.516
/u:/	Affricate	59	229.02	14.420
	Stop	97	231.50	16.701
	Nasal	80	227.77	19.158

Table 4.2.8.7: Mean B3 (Hz) of vowels preceded by different (place of articulation) consonants

N=4320

Vowel	Place of articulation	n	Mean	Std. Deviation
/i/	Bilabial	70	229.53	21.428
	Dental	67	229.43	18.420
	Alveopalatal	68	230.75	15.435
/e/	Bilabial	200	230.50	17.099
	Alveopalatal	200	230.46	14.059
	Retroflex	69	229.00	26.482
/a/	Bilabial	123	230.13	16.716
	Alveopalatal	250	227.41	17.761
	Velar	125	228.30	19.017
/o/	Bilabial	154	231.45	17.545
	Dental	61	230.40	16.274
	Alveopalatal	59	227.52	14.309
/u/	Bilabial	60	230.61	23.195
	Dental	109	228.05	18.263
	Alveopalatal	219	230.25	18.766
	Velar	32	233.51	19.072
/i:/	Bilabial	69	231.39	13.375
	Alveopalatal	136	231.48	13.793
	Velar	66	225.23	16.463
/e:/	Bilabial	140	232.79	17.970
	Dental	70	229.15	17.101
	Alveopalatal	70	232.30	17.463
	Velar	139	232.29	17.090
/a:/	Bilabial	189	226.54	18.487
	Dental	133	230.09	19.018
	Alveopalatal	191	230.35	17.992
	Velar	136	229.04	15.775
/o:/	Bilabial	62	226.99	27.519
	Dental	66	225.41	19.782
	Alveopalatal	59	229.02	14.420
	Retroflex	63	228.23	16.100
/u:/	Bilabial	74	228.61	16.857
	Dental	60	232.64	17.652
	Alveopalatal	43	227.92	19.829

Table 4.2.8.8: Mean B3 (Hz) of vowels across preceding voicing feature of consonants

Vowels	N=4320					
	Voiced consonants			Voiceless consonants		
	n	Mean	SD	n	Mean	SD
/i/	67	229.43	18.420	70	229.53	21.428
/e/	66	232.25	13.996	136	228.63	24.019
/a/	128	229.26	17.031	59	226.51	19.988
/o/	103	233.55	14.292	112	228.95	19.234
/u/	86	228.27	16.443	115	230.74	22.276
/i:/	66	225.23	16.463	69	231.39	13.375
/e:/	208	230.51	16.887	141	233.85	18.139
/a:/	262	228.24	17.636	196	228.40	18.327
/o:/	63	228.23	16.100	128	226.17	23.762
/u:/	97	230.71	18.099	37	229.64	15.079

APPENDIX – IX :

Letter seeking administrative permission



Manipal College of Allied Health Sciences
A constituent college of Manipal University



Manipal
7th February, 2005

To
The Dean
Manipal College of Allied Health Sciences
MAHE, Manipal

Through
The HoD
Department of Speech and Hearing
Manipal College of Allied Health Sciences
MAHE, Manipal

permitted
[Signature]
07/02/2005
Dean, HoD

DEAN
Manipal College of Allied Health Sciences
Manipal University, MANIPAL - 576 104

Dear Sir,

Sub: Permission to conduct the study

I would like to request you to permit me to conduct my PhD research project titled "Acoustic characteristics of vowels in Telugu" at department of Speech and Hearing, MCOAHS.

As a part of this study, I will be visiting different schools and institutions to record speech sample from the participants after obtaining their consent. I request you to kindly introduce me to concerned head of the institutions. Your kind help is much appreciated.

Thanking you

Yours sincerely

[Signature]

Krishna. Y
Sr. Grade Lecturer
Dept., of Speech and Hearing
MCOAHS, Manipal

APPENDIX – IX :

Consent form for participants of the study

Consent form for participants of the study (English)

I _____ (participants name) agree to participate in the research project on “Acoustic characteristics of vowels in Telugu” being conducted by Mr. Krishna. Y, who is PhD student and faculty of Manipal College of Allied Health Sciences, Manipal University, Manipal.

I understand the purpose of this study is to investigate the acoustic characteristics of vowels in Telugu language. This will help in obtaining normative data across the age, gender and regions. This will be achieved by analyzing the speech sample recorded.

I understand that my participation in this research will involve 10 to 15 minutes for recording the speech sample. I also understand that this will not cause any risk or harm to me or to my work.

I am aware that I can contact Mr. Krishna. Y (@ 0820 2922748) if I have any concerns about the research. I also understand that I am free to withdraw my participation my participation from this research project at any time I wish and without giving a reason.

I agree that the research data gathered from this project may be published in form that does not identify me any way.

Signature of Participant/Guardian

Date

Consent form for participants of the study (TELUGU)

నేను _____ (పేరు) మనిపాల్ కాలేజ్ ఆఫ్ అలైడ్ హెల్త్ సైన్స్ లో పని చేస్తున్న శ్రీ శ్రీష్ట గారు చేస్తున్న రీసర్చ్ లో పాల్గొనడానికి సమ్మతిస్తున్నాను.

నాకు ఈ రీసర్చ్ గురించి అవగతము అయింది. తెలుగు వోవల్స్ యొక్క ఆకౌస్టిక్ పరితలను, వాటిని రికార్డు చేసి అనలసిస్ చేయడము వలన లభ్యమగును.

నేను శ్రీ శ్రీష్ట గారిని (0820 2922748) ఫోను ద్వారా ఎప్పుడైన ఈ రీసర్చ్ గురించి మాట్లాడ వచ్చును. నేను ఈ రీసర్చ్ నించి ఏ కారణములేకుండా బయటకు రావచ్చును.

ఈ రీసర్చ్ ద్వారా వచ్చిన ఫలితాలను నా యొక్క అనన్యతను తెలుపకుండా ముద్రణ చేయడానికి వొప్పుకోంటున్నాను.

Signature of Participant/Guardian

Date

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Suggesting & Implementing a Reflective Model of Teacher Education

Looloo Mohammed Alraimi, M.Ed.

Abstract

This research study suggests (and tries to implement) a reflective model of teacher education that may repair the teaching-practice experiences at Najran University and foster a deeper understanding of teaching-learning practices than has so far been planned to. Underlying this exercise was the firm belief that:

Teacher growth is less a question of polishing existing teaching skills or of keeping up with the latest teaching developments and more a function of a teacher's changing as a person – of seeing himself or herself, the school, the curriculum and the students differently. (Bamber 1987: 125)

The study aims to open a new dimension in Teacher Education that enables the teacher- trainees to evaluate/observe one another's teaching, think critically, make corrective actions, decisions for planning, do self-inquiry and collaborative-exploration about the presented teaching. Consequently, they would be directed to professional development and growth of the teaching processes.

Statement of the Problem

It is the convention at the college of Sciences and Arts/ Najran University that the teacher-trainees, after having a few courses and some theories that prepare them for teaching, go right away to schools to practise teaching without having the chance –an experience- at the college (a peer/micro teaching) to

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carry out and rehearse what they have learnt and hence they would attempt a critical thinking on their performances before exposing themselves to actual teaching situations. Students need to get trained on the language and the skills they have acquired; to reflect on their teaching performance where they may attempt dialogic exchange, rational discussion, critical thinking, self-inquiry, and exchange one another's perspectives. This way, they may get deep understanding of the teaching processes and consequently get led to professional development. According to Dewey (1933:89)

Education in order to accomplish its ends both for the individual learner and for society, it must be based upon experience – which is always the actual life experience of some individual.

Discussion

The issue raised in this forum relates to the implementation of Reflective Teacher Education in the K.S.A. context.

Traditionally, in the faculty of Sciences and Arts (for girls), Najran University, level 8 students (the trainees) experience teaching in local government schools through one semester (15 weeks) of teaching practice. During this period, the trainees attempt real teaching facing real school students. The aim of this session is to enable the trainees to put into practice the knowledge of methods/ techniques/ skills acquired from their studies in the college.

Therein lies a gap/mismatch of what students have learnt so far and their ability to reflect this knowledge in practical situations without a previous experience. Unless students have an experience, make some reflection/exploration on teaching/learning, some dialogic exchange on intention and interpretation; reveal their perceptions on teaching/learning, professional growth on teaching may not take place.

It is suggested, therefore, that some further training is needed to expose students to an environment where they can reflect critically on classroom actions (peer/micro teaching) which may afterwards show the way to professional growth in teaching.

The current teaching practice programme in Najran University is very traditional. In the first two weeks of the training session, student-teachers observe the actual/real teacher teaching in the English classrooms and record their observations. In the third week, they assume the role of substitute teachers. The trainees' performance is monitored, frequently, by the actual teachers responsible for each class. The college supervisor meets the trainees in the schools for two or maximum three times and observes their teaching and assesses them accordingly.

Break with Tradition

During the current semester, as the researcher was a lecturer teaching a course in English Language Teaching Methods at the college of Sciences and Arts for girl students level 7, a small attempt was

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made to break with tradition and loosen some of the fetters by adopting informal modes of tutoring to foster a deeper understanding of teaching-learning than has so far been planned to.

After students have been introduced to some theories, methods and techniques of teaching, the last three weeks (out of fifteen weeks) of the teaching duration were devoted to practice teaching and to implement a suggested reflective model of teacher education.

The Try-out Group

The try-out group comprised 11 girl students, level 7, and the tutor. To make the break with tradition possible, a few preliminary matters had to be addressed. Three problems were anticipated. They were,

- The students' obsession with marks and grades
- Hesitation and lack of confidence to make the first move in the endeavour
- Their discomfort in using English.

The first matter became less problematic when the students were promised that this attempt was not going to be assessed and rather would prepare them for the next teaching practice semester. The following log-book entry of one of the group shows the general feeling of relief:

You have fitted¹ [satisfied?] me. I think that because of your encouragement and kindness to go ahead, I must be careful about the way that I will use in my teaching, not my marks.

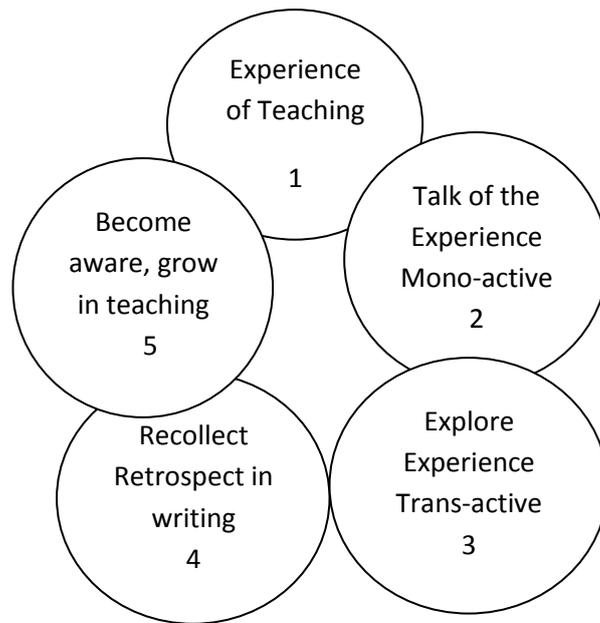
As for the second problem, the tutor provided the students with a chance for teaching demonstration. As modelling teaching, one of the English department teachers had planned a lesson and presented it to the participants. Comments were followed and the written lesson plan was handed to the participants. This aimed at motivating the participants and raising their confidence to go ahead in the endeavour.

For the third problem, the participants were given the option, if you think that you do not have the English words/expressions for something you want to say, no problem, you can use Arabic (Mother Tongue) or code-switch from English to Arabic and back wherever necessary.

The students did not seem to be convinced to code- switch. Their action spoke: only one student wrote her comments in Arabic, the others stuck to English [with sometimes atrocious spellings and grammar]. Later, the lone student who had initially recorded her feelings in Arabic, switched over to English in her subsequent comments.

The Plan of Action

The plan that is suggested for a reflective teacher education is schematised below:



1. In circle 1 the trainees are expected to teach their peers any lessons they choose for 30 minutes.
2. In circle 2, each individual will then “reflect” on her own teaching and talk about its “what” and “why” (talking about teaching mono-active).
3. In circle 3, the group will talk interactively about the teaching they see, experience as learners, and hear about (transactive talking about teaching).
4. The action in circle 4 is retrospective recollections. The participants may record their personal feelings about the whole experience and show their notebooks to one another and to the tutor.
5. Circle 5 represents the goal and the purpose of the whole actions; the understanding and awareness of teacher education reflection.

Circles 1 – 3 represent action of the participants as they differ in the nature of their roles and statuses. They could be teachers or observers.

The time and space for the actions in circles 1 – 3 are contained in one session without any breaks.

There is no fixed time slot or place for action in circle 4. The action here is off-line retrospective recollections. Participants may write their feeling in their free time or at home.

This plan is further characterized by a number of “freedom”; the freedom to choose the date/ time and turn of teaching (The days continued to be Sunday and Tuesday.); the freedom to choose the book (one of the series books prescribed for government school teaching) lesson, topic, item to be taught or skills/ sub-skills to focus on; the freedom to plan teaching without being tied down by the directions in the teacher’s book.

The Researcher’s Role

1. Observing the participants’ teaching performances.

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2. Listening to each individual's comment reflecting in her teaching experience.
3. Sharing the group discussion by posing some questions to draw their attention to crucial aspects in teaching.
4. Collecting the participants' writing notes in which they have recorded their feelings about the entire experience.
5. Analyzing the data collected paying special attention to the participants' awareness of classroom actions and the features of critical teaching reflection that they have exposed.

Literature Review

Let us begin looking at the notion of “reflection” in the context of Teacher Education, and the means of effecting “reflection” suggested in the literature.

❖ “Reflection” leading on to Reflective Teacher Education

Reflective Teacher Education is projected as a non-(ego) threatening and collaborative way of effecting professional expertise. Dewey (1970) observed that preparing teachers to be critically reflective about their practice may be more important in the long term than focusing on mastery of the techniques and skills that form the mainstay of educational practice. A critically reflective approach is one in which inquiry and reflection are seen as central to the process of teacher development. The skills needed are self-inquiry and critical thinking.

What does “reflection” involve in the dominant tradition of ELT education? Fanselow, Wallace, Richards and other modern masters look on reflection or “critical reflection” as an activity or process in which an experience is recalled, considered, and evaluated, usually in relation to a broader purpose (verbalization- offline). It is a response to a past experience and involves conscious recall and examination as a basis for evaluation and decision making and as a source for planning and corrective action. As Bartlett (1990) suggests,

Becoming critical means that as teachers we have to transcend the technicalities of teaching and think beyond the need to improve our instructional techniques. This effectively means we have to move away from the “how” questions, which have a limited utilitarian value to the “what” and “why” [of how] questions, which regard instructional and managerial techniques not as ends in themselves, but as a part of broader educational purposes.

Traditionally, the “means” available for enabling learners to reflect critically on their classroom actions include the following:

- Experiencing teaching and talking about it;
- Observing others' teaching "to gain experiential knowledge";
- Reflecting on teaching-learning (teacher journals, written activities on classroom experience, portfolios, diaries); (Can recorded retrospections be considered reflections?)
- Investigating teaching-learning (analyzing classroom processes, establishing databases);
- Focusing on critical events in teaching (role-play, case studies);
- Action research (projects addressed to practical problems in the teacher's own context).

(Source: Wallace, 1991; Richards, 1998; Gebhard and Oprandy, 1999)

❖ **Critical Reflection in Context: Conceptual flaws and loopholes in practice**

It is generally believed that how teachers/ students-teachers accept expressed opinions /observations/ suggestions of "others" regarding teaching, and how they look back on their own teaching, have an effect on their classroom actions. But one must remember that despite the emphasis on building up non-judgmental and collaborative explorations, a certain amount of threat is inevitable. As Fanselow (1984:2) remarked:

While supervisors that describe rather than judge may be a refreshing change from supervisors that judge, a supervisor is still a supervisor.

It has also been pointed out that many aspects of teaching are not observable and also that what we can observe is dependent on our point of view. Sense datum differs from person to person. Thus, as Richards (1998: 142) citing Fanselow (1977) observes:

When different people discuss the same lesson (e.g., a teacher, a supervisor, and a student teacher) they often give contradictory accounts of the same event.

Further, when exposed to the ideas of classroom dynamics, some teachers/ student-teachers may feel threatened. No amount of sugar-coating can mask the insecurity of exposing one-self to the other's view. The threat may increase when the individual is a novice in teaching and has inadequate understanding and knowledge of English. In fact, thinking-rethinking and verbalizing reflections may well be beyond the capacity of learners whose socio-educational backgrounds may act as barriers to reflection. This brings us to the question of context.

Reflective practitioners have often tended to "Vaseline" the context of reflection and focus on reflection as an isolative practice. This had led to the hypostatization of knowledge – the trainee – reflector's thinking against a zero/ neutral/ sterile background. There seems to be a tacit assumption that the training environment is "constant". However, as Srinivasan and Roy (2001) stated:

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In a reflective situation, trainee-identity and trainee-will are not constant; neither are they isolative. Trainee environment is never sterile or neutral; it comprises a culturally inherited legacy of “rules” and personal theory-laden goals.

❖ The Self and the “Other”

Reflection / explorations do not occur in a vacuum. This is recognized in current tradition (Gebhard and Oprandy: 1999:5, 6). The ‘other’ is projected as a mirror, a source, a ‘perceptual’ filter, or an enabler of alternatives. But the self /other concept is problematic. We need the other to define ourselves (Donne-no man is an island, etc.). But with the continued presence of the other in us we evolve a new identity as a continual; we have to reject the other to preserve ourselves. Again in any social transactions, we plan/act on the premises which have been/are being taken into consideration by the other(s). The degree of confidence we feel that ours have been/are taken into account decides the depth/level of our relationship with the other/others. Further, the self’s processing approach and method changes as the self’s perception of external conditions (the other-world) keeps changing; as the self changes, it attempts to bring about changes in the other/ others, changes which the self desires. This in essence is a metonymy for the self/ other problematic.

There is an underlying assumption in this tradition that a “reflector” can reflect, like a mirror, reconstructively and faithfully on his “cognitive experience”. For instance, Fanselow (1987: 476) affirms: “Any lens reveals.” Again, there are seeds for a problem here. Do observation and self-reflection automatically lead to informed practice? What about “blindness” involved in observing self and others. It is not only in fairy tales that a mirror says “You are the fairest of them all.”

Tutor-trainee collaborative exploration is the crucial element in a reflection-based model. Unless there is a basic trust, true communication cannot occur. We often encounter the world with a mask , appropriate to the purpose, agent/audience and context, to minimize social frictions, to lubricate social interactions, or to even hide our intentions’, fears, anxieties and weaknesses. We doff the mask when we are in the company of others only if we are confident of being understood, accepted for what we are or when we are sure the others have seen through the mask. In other words, intentions manifest themselves faithfully only when ‘intersubjectivity’ has been ensured.

The questions then are: ‘How to enable the trainees to lower their masks?’ ‘How to make them reflect on their intentions and actions, to validate actions against intentions and to evaluate intentions in terms of “feasible” actions?’ Ensuring the creation of an inter-subjective zone suggests itself as an immediate answer. The creation of a rational, non-coercive discourse among trainees and trainer (teachers and supervisors) will be possible only when the former are convinced that their premises will not only be something admitted prima facie but also something on which the others will act---- when the trainees are free and equal

Without such a rational, non-coercive discourse can reflection be possible in any real teacher education context?

Under the pragmatic presuppositions of an inclusive and non-coercive rational discourse among free and equal participants, everyone is required to take the perspective of everyone else, and thus projects himself into the understandings of self and world of all others (Habermas 1995:117).

Deep respect for the tutor and basic lack of confidence in the tutees are explicit in the following quotations:

“I want to be like you [referring to the tutor]. But at the same time I feel I cannot be as you, because you have efficiency to change your techniques and ways to teach very good and make the students understand you clearly...”

“I can’t organize my thoughts like you. I want to be as fluent as you.”

“I wish to be as student X² because you praised her lesson. Everyone liked her lesson. She is always the top in the class...”

The learners’ insecurity and dependence on the other as a role model lessened in the ensuing days, but they did not disappear despite positive feeling like:

“On returning home, I thought a lot. I saw it was a good idea for us to develop by ourselves”

“I feel like a real teacher, because I *planned* (planned?) my lesson by myself.”

“I feel that I’m a real teacher. When they praised my techniques in teaching this gave me confidence”

Conclusion

The days for the endeavour sketched in this study came to an end. A small beginning had been made to bring in an air of freedom that is crucial to professional growth. Efforts made to create rational, non-coercive discourse among student-teachers and supervisors. The trainees could expose the skills needed for critical reflection in their retrospective recollection. The following points were observed as the training session progressed; critical thinking, self-inquiry, evaluating others, building new identity, raising confidence, realizing mistakes, accepting others’ opinions, doing corrective actions, making decisions for planning, and getting self-satisfaction. These points are again stated below with some quotations from the trainees’ log-books for the sake of illustration.

➤ Critical thinking

“I think my friend X was supposed to explain the meaning of some words when first introduced the exercise because they seemed new to students”

“In my opinion, the teacher has to raise the level of teaching so that students will push themselves up to reach it”

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“I think that one of my classmate’s shortcomings is that she didn’t verify that students have really understood. She just asked “Have you understood?” students said “Yes” then she immediately moved to the next point and that led her to end the class soon. She could check students’ understanding by posing many questions not only saying (Have you understood?)”

➤ **Self-inquiry**

“When I was planning my lesson, I was wondering whether the activities I prepared would be useful or not. Though I have read in one book about its efficiency in teaching pronunciation, but the application of it I was not sure about”

➤ **Evaluate others**

“Student X is one of the kinds of teachers who can help the students to get to the intended message easily”

“My friend X has a deficiency in explaining grammar to students. She keeps speaking a lot without making the rules clear to students”

➤ **Build new identity**

“I thought that it would be too hard for me to teach English, but after I tried I felt it isn’t. Teaching English is very interesting but you only need to develop useful techniques”

“Before now, I wasn’t (didn’t?) know exactly the way and the order of teaching a lesson, but now I have a good way of teaching and explaining.”

“Before I introduce the lesson in front of my friends I was worried about several things like how to start the class, how to present an interesting introduction and how many questions I should ask to make a successful class, but later everything becomes clear to me and I am now able to modify my teaching ways according to the needs of the class.”

“Before now I wasn’t sure about the ways of teaching, but after the practice I knew many ways and good techniques in teaching English. I understood how to deal with teaching and make it better”

➤ **Raise confidence**

“After I taught my first lesson, all my worries have gone. I’m confident now.”

“I feel like a real teacher. When my friends agreed on my idea, I became more confident.”

➤ **Realize mistakes/ accept others’ opinions**

“My introduction wasn’t good. As my friends suggested I could introduce the new lesson by asking simple questions that opens students’ minds to receive the new lesson.”

“All the comments my friends said were valuable and helped me correct my mistakes.”

“I do value my friends’ observations and consider them in my next lesson.”

“It is not a shame if we apply others’ ideas in teaching if they are useful.”

“I felt happy when my friends accepted my views and tried to follow. I feel like a true teacher.”

“My friends’ comments helped me notice my mistakes in teaching.”

“I think we all are good in teaching. Everyone is able to observe the other and see her fault and repair it.”

➤ **Do corrective action**

“After my attempt I knew that teaching reading doesn’t only mean explaining meaning and reading aloud. It should rather involve developing students’ comprehension of the text.”

➤ **Make decisions for planning**

“In my next lesson I will be more careful about students’ understanding by asking them many questions.”

“In future, when I become a real teacher, I will help my students to speak English frequently and communicate with me only in English.”

➤ **Get self-satisfaction**

“All the points I mentioned are my perspectives as a student without any real teaching experiences. I thank you teacher that you provided us this chance to think critically on our teaching.”

“Before now I was really asking myself ‘how can I teach English in schools without training?’ I know that I’m studying something about teaching but practice is different from theory. So this training experience is very important for us.”

“After I taught my first lesson I got that teaching isn’t hard as I was thinking, but it needs good preparation or practice. Indeed, I’m very thankful to you teacher for this training.”

“Practising teaching this way is good for us. It helps us to exchange our ideas and see our mistakes. Once a mistake occurred it gets corrected and will not occur anymore.”

“This training is useful, because it helps us to see others’ teaching and listen to everyone’s point of view.”

“We are used that the teachers always points our mistakes. She knows what is going well and what is bad. But this time it is different. We have to realize by ourselves what is good and what is bad. It is a challenge and that what we really need to develop ourselves.”

Final Remarks

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The ultimate aim of the current study is evidently manifested in the above points that show the critical reflection features and the participants' understanding and awareness of teacher education reflection. So what trainees need to develop their skills in teaching is conscious understanding, self-inquiry and critical thinking/reflection on classroom actions in which an experience is recalled, considered and evaluated. This way, professional growth in the teaching processes may take place.

Notes

1. Spelling, syntax and vocabulary of the trainees' writing are unaltered.
2. The trainees' names are not mentioned; instead they are symbolized by the cross mark X.

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I am particularly grateful to Dr. Hassan Almatari, an assistant professor at Najran University, for his helpful discussion, guidance and encouragement. His depth of knowledge in the English Language has been an invaluable help/support to me throughout the period of this work.

I am also thankful to Dr. Shereen Abdelgelil, an assistant professor at Najran University and a colleague, who did the proofreading of this work.

Most importantly, I would like to thank my students who have been the subjects of the study, and who allowed me to implement a Reflective Model of Teacher Education.

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Role of Management Information System (MIS) in COMSATS Institute of Information Technology

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Abstract

This study was designed to find out the role of the Management Information System (MIS) in COMSATS Institute of Information Technology (CIIT), Islamabad, to define the concept and scope of management information system (MIS), to explore the role of Management Information System (MIS) in smoothening the academic and administrative activities of COMSATS Institute of Information Technology and identify the bottlenecks of Management Information System (MIS) if any, and suggest measures to overcome these problems. There were seven campuses of COMSATS Institute of Information Technology in Pakistan. Keeping in view the time and finance constrains the study was delimited to the COMSATS Institute of Information Technology Islamabad only.

12 managers using management Information System and 20 percent out of 4000 students of COMSATS Information Technology were randomly drawn from each faculty as a sample for this study. Two separate questionnaires were designed for the managers using Management Information System (MIS) and students of COMSATS Institute of Information Technology

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(CIIT). The questionnaires are attached as annexure-A and annexure-B. Both of the questionnaires are consists on the 19 and 18 questions respectively. Questionnaires were personally delivered and collected by the researcher from the respondents of the study. For the purpose of the data analysis Statistical Package of Social Science (SPSS) was used. Data was analyzed and interpreted in the light of the objectives of the study. Findings were drawn on the basis of data analysis

Key Words: Management, Information, Technology, Institute, System, Comsats

Introduction

In this information age, coupled with the complex nature of increasingly large modern organizations such as the universities, there is the need for acquisition of appropriate information equipment to process data into information and disseminate the information for management use, towards effective university administration. Information is an important resource in the effective management of any organization. Information is based on facts, which is useful in making a specific decision among alternative courses of action. The information potential of data is enhanced by refinement, which involves selection, processing, sorting, and re-organizing the data into a usable form and transmission to the appropriate end-users. So, there exists a need for an effective Information System.

Information consists of data that have been processed and are meaningful to a user. A system is a set of components that operate together to achieve a common purpose. Thus a management information system collects, transmits, processes, and stores data on an organization's resources, programs, and accomplishments. The system makes possible the conversion of these data into management information for use by decision makers within the organization. A management information system, therefore, produces information that supports the management functions of an organization (Davis & Olson, 1985; Lucas, 1990; McLeod, 1995).

Literature Review

Management Information System (MIS) that provides managers tools for organizing, evaluating and efficiently running their departments. By using the past and present information, universities can predict their future result or estimate their expected expenses. An MIS can use software that helps in managing the data source of the university e.g. database, the hardware resources of a system, decision support systems, people management and project management applications, and any computerized processes that would enable them to making effective decisions.

Educational Management

Management in all business and organizational activities is the act of getting people together to accomplish desired goals and objectives efficiently and effectively. Educational Management comprises planning, organizing, staffing, leading or directing, and controlling an organization (a group of one or more people or entities) or effort for the purpose of accomplishing a goal.

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Educational organizations can be viewed as systems; management can also be defined as human action, including design, to facilitate the production of useful outcomes from a system.

<http://en.wikipedia.org/wiki/Management> retrieved on 13-Dec-10 at 3000 hrs.

Data

At the start, internal reporting and record was made manually in the organizations, which gave limited and delayed information for management activities. Previously, data had to be separated individually by the people as per the requirement and necessity of the organization. Later, data was distinguished from information, and so instead of the collection of mass of data, important and to the point data was stored that is needed by the organization. (Brien, J (1999), Management Information Systems – Managing Information Technology in the Internetworked Enterprise)

Information

Ajayi and Omirin, (2007) quoted about the information as, this view is buttressed by Murdick and Ross (1971), when they opined that: Information is absolutely essential to the survival of an organization. As organizations grow, the pressure of scale, complexity and an increased rate of change make adequate information processing capacity inevitable, if effective control, consequent upon coordination of individual activities to be achieved.

Information is a critical resource in the operation and management of organizations. Timely availability of relevant information is vital for effective performance of managerial functions. An information system in an organization is like the nervous system in the human body: it is the link that connects all the organization's components together and provides for better operation and survival in a competitive environment. Indeed, today's organizations run on information. (<http://www.fao.org/docrep/w5830e/w5830e0k.htm> retrieved on 02-Dec-10 at 2100)

Information consists of data that have been processed and are meaningful to a user. A system is a set of components that operate together to achieve a common purpose. Thus a management information system collects, transmits, processes, and stores data on an organization's resources, programs, and accomplishments. The system makes possible the conversion of these data into management information for use by decision makers within the organization. A management information system, therefore, produces information that supports the management functions of an organization (Davis & Olson, 1985; Lucas, 1990; McLeod, 1995).

Need of Management Information System

The growing complexity of education systems has made information one of the essential elements of the administration, management and planning of education system. The strengthening of an information system depends on a simple premise, all the organizations; have to generate information to inform their condition, functioning and results. Without data, no system can function rationally, and consequently no operational decision can be made.

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Management Information System (MIS) can therefore produce summary reports for detailed data analysis as well as baseline information which can be helpful for the completion of ongoing project and forecasting future needs. (Luis Carrizo, Claude Sauvageot and Nicole Bella, 2003)

Concept of Management Information System

A management information system (MIS) is a system or process that provides information needed to manage organizations effectively. Management information systems are regarded to be a subset of the overall internal controls procedures in an organization. (Kotler, Philip; Keller, Kevin Lane, 2006)

A management information system (MIS) is a system that optimizes the collection, transfer and presentation of information throughout an organization through an integrated structure of database and information flow. It is, according to Sambo (1992), a system that uses formalized procedures to provide management at all levels and in all functions with appropriate information, based on data from both internal and external sources. In the same way, Lucy (1989) viewed MIS as a system to convert data from internal and external sources into information and to communicate that information in an appropriate form to management at all levels, to function.

Educational Management Information System (EMIS)

The term management information system (MIS) is well accepted, but the management information system (MIS) may also be called an organizational information system, a computer-based information system. When this management information system is used to help manager and administer by basing itself on modern management tools in the educational system it can also be term as the education management information system or EMIS

Educational management information system (EMIS) helps to generate multiple routine data and operational information such as, monthly and weekly records of the management and financial transactions, the presence and movements of personnel and pupils, the pay slips, results of tests and examinations, etc. Such information is mainly important for managing educational activities. The education management information system (EMIS) is a sub-system of an education system, which aim at to collect, store, process, analyze and propagate information. (L. Carrizo, Sauvageot, and Bella)

Educational management system (EMIS) is aimed to strengthen capacities in management, planning and dissemination of information at all levels of the education system. To attain this goal, it has to:

- a) Improve capacities in such way that planners, administrators and managers could base their judgment on timely and reliable data.
- b) Centralize and coordinate the dispersed efforts in acquiring, processing, analyzing and disseminating education management information

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- c) Rationalize the nature and flow of information necessary for decision making by reducing and eliminating duplications, and by filling in the information gaps;
 - d) Link and assemble different existing information systems;
 - e) Integrate and synthesize in one single system the quantitative and qualitative data;
 - f) Improve data collection, and the use and dissemination of information for education management, in order to respond to the constantly evolving needs for information;
- (http://en.wikipedia.org/w/index.php?title=Management_information_system&action=edit retrieved on 15-Nov-10 at 0700 hrs)

Management Information Systems (MIS) is important in educational institutions activities and helped educational institutions achieves mature level of automation.

University Management Information System

Managing universities activities requires University Management Information System (UMIS). According to Hazem, (2009); University Management Information System (UMIS) broadly refers to a computer-based system, a collection of hardware, software, people, data, and information, which provides managers with the tools for organizing, evaluating and efficiently running their departments.

There are many educational technologies have recently begun to be used separately as teaching and learning tools. These technologies include conferencing software, e-mail, on-line resources, search engines and multi-media databases, video-conferencing, shared whiteboards and interactive simulations

(http://www.leeds.ac.uk/educol/documents/00001237.htm#_Toc463843827 retrieved on 9 December 2010 at 1300 hrs)

Examples of university information system components include Student Information System (SIS), Library Information System, Faculty Information System, and Finance System

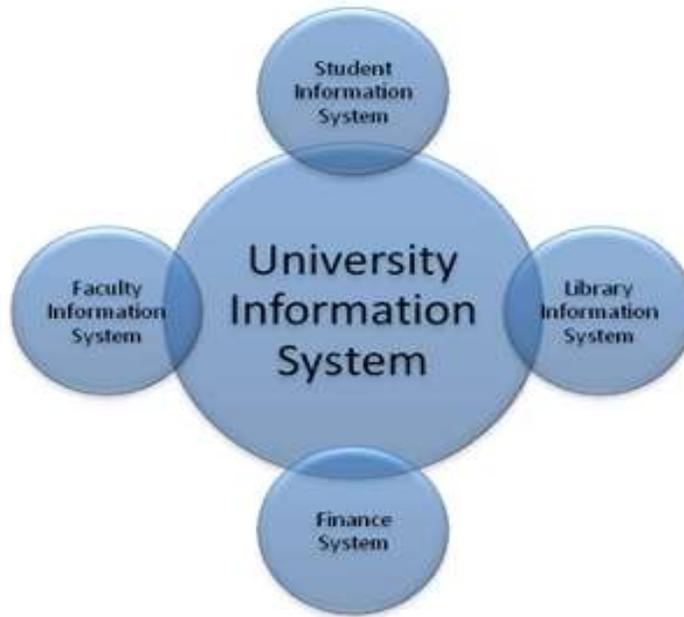


Figure 1. A prototypical university management information system.

Student Information System (SIS)

Student information system (SIS) is a use for educational establishments to manage student data. Student information systems provide capabilities for entering student test and examination scores, building student schedules, tracking student attendance, and managing many other student-related data needs in any educational institution. The basic functions of a student records system is to support the maintenance of personal and study information relating to:

- Inquiries from prospective students
- The admissions process
- Enrolling new students and storing teaching option choices
- Creating class & teacher schedules
- Records of examinations, assessments, marks and grades and academic progression
- Maintaining records of absences and attendance
- Recording communications with students
- Maintaining discipline records
- Providing statistical reports
- Communicating student details to parents through a parent portal
- Human resources services
- Accounting and budgeting services
- Student health records

(http://en.wikipedia.org/wiki/File:Student_Data_Management.gif, retrieved on 09-Dec-10 at 1900 hrs)

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Library Information System

Library Information System is responsible for managing and automating library. Automated Libraries are called those libraries which contain material in digitized form. Automated Library Information System database record reflects managerial tasks performed by librarians in order to effectively manage libraries. A typical Library Information System record normally consist on Book ISBN, Name, Author(s), Keyword(s), and data like Section, List of all the books, List of books available, List of borrowed books, who is borrowing, when they should return, etc. (Haitham A. El-Gharee, 2009)

Faculty Information System

Faculty Information System is responsible for managing and automating managerial activities related to faculty and staff, Courses, and intersection between them. A typical faculty information system database record includes Faculty data; ID, Name, Departments, Courses data; Course ID, Name, Description, Name, Age, Gender, Address (Street, City, Country), Email, Username, Password, DOB (Date of Birth) etc. Faculty Information System by itself is not directly involve in the academic activates, its basic purpose is to organize faculty and university managerial activities; the learning process is not the main orientation. Faculty information system capabilities are to generate courses report(s), for example, that includes course managerial issues. (Hazem M. El-Bakry, (2009) E-Learning and Management Information Systems for E-Universities)

Finance Information System

Finance system is responsible for managing financial issues related to any organization. However, financial issue of the educational institution doesn't have anything to do with academics activities at all. Some academic issues might include some financial issues relating to the cost of course materials, etc. However, this should not force academic activities to be under the control of university financial system. (Haitham, 2009)

Yet, the financial information system of the university can be used to keep the record of the submission of fees and about the salary of the employees. The record of the outside financial aids and its utilization regarding the project may also kept.

University Management Information System (UMIS) Role

University Management Information System (UMIS) achieving success from last many years and prove efficiency and effectiveness within educational institutions. University Management Information System (UMIS) is required for smoothly running the academic and administrative activities within the educational institutions. University Management Information System (UMIS) manages educational institutions, and more attention should be paid to the learning process with the presence of UMIS. (Hazem M. El-Bakry, (2009), E-Learning and Management Information Systems for E-Universities).

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Objectives of University Management Information System (UMIS)

According to Ajayi and Fadekemi (2007), the following are the objectives of the University Information System (UMIS):

- i. To standardize the system of obtaining reports and statistical information from the various universities on: students, staff, financial matters, and library.
- ii. To record such information on diskettes or tapes at the universities for budgeting, information storage, analysis and retrieval purposes.
- iii. To ensure that such information are accurate and timely.
- iv. To organize information for planning, budgeting and decision making.
- v. To help the universities put in place effective management system and improve utilization of resources. Management Information System (MIS) is basically concerned with the process of collecting, processing, storing and transmitting relevant information to support the Management operations in any organizations. (Ajayi, I. A. and Omirin, Fadekemi F. (2007), The Use of Management Information Systems (MIS) In Decision Making In The South-West Nigerian Universities)

Approach to Management Information System (MIS) Design

A classical systems and software engineering approach is recommended to ensure the development of a management information system that is fully responsive to the users' performance, its objectives and resource constraints. The first step in an MIS development task is the development of an MIS management plan, which describes the major tasks and schedule of work for the MIS activity. This approach includes the following major components:

- **Systems analysis**, which includes information needs evaluation, requirements and specification analysis
- **Systems design**, which includes synthesis of alternatives, cost-effectiveness analysis, specification of criteria for selecting a preferred alternative, selection of a preferred alternative
- **Systems implementation**, which includes forms development, specification of data collection and entry procedures, development of editing and quality control procedures, software coding and testing, development of training materials and training, integration of the software components with other system components (e.g., personnel, communications, data transfer and assembly, report preparation and distribution, feedback), and system-level testing
- **Systems operation and support**, which includes not only routine operating procedures but also provision for on-going system financing and management, quality control, software maintenance and updating, personnel training, and system maintenance and improvement (including periodic review of system performance and diagnosis and correction of problems) While the preceding

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system development phases are completed in sequence, there is some time overlap between them.

(Joseph George Caldwell, (2009), Approach to Management Information System Design Joseph George Caldwell) and (<http://www.foundationwebsite.org> retrieved on 7-Dec-10 at 1300 hrs)

Applications of Management Information System (MIS)

As this is a technology era, there's hardly any large business that does not rely extensively on their IT systems. However, there are several specific fields in which MIS has become invaluable.

Strategy Support

While computers cannot create business strategies by themselves they can assist management in understanding the effects of these strategies, and enable them for the effective decision-making.

MIS systems can be used to transform data into information which is necessary for the decision making. Computers can provide various sorts of the reports and statement which are helpful in the planning, monitoring, implementation and evaluation of the strategy.

Data Processing

Management Information System (MIS) not only allow to collection and interpretation of vast amounts of the data, but they also provide a valuable time saving benefit. Where in the past the information had to be manually processed for filing and analysis it can now be entered quickly and easily onto a computer by a data processor. That shows the quickest reflexes of the project and enables the managers for effective and faster decision making.

(<http://www.bestpricecomputers.co.uk/glossary/data-recovery.htm> retrieved on 7-Dec-10 at 1500 hrs)

Characteristics of MIS

To function effectively as an interacting, interrelated, and interdependent feedback tool for faculty and staff, Management Information System (MIS) must be useable. The five elements of a useable MIS system are: timeliness, accuracy, consistency, completeness, and relevance. The usefulness of Management Information System (MIS) is hindered whenever one or more of these elements are compromised.

Timeliness

To simplify prompt decision making, an institution's Management Information System (MIS) should be capable of providing and distributing current information to appropriate users. Information systems should be designed to accelerate reporting of information. The system

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should be able to quickly collect and edit data, summarize results, and be able to adjust and correct errors promptly.

Accuracy

A sound system of automated and manual internal controls must exist throughout all information systems processing activities. Information should receive appropriate editing, balancing, and internal control checks. A comprehensive internal and external audit program should be employed to ensure the adequacy of internal controls.

Consistency

Data should be processed and compiled consistently and uniformly. Variations in data collection and its reporting can distort information and trend analysis. Data collection and reporting processes will change over times; organizational management should establish a reluctant procedure which accepts the changes in the systems. These procedures should be well defined and documented, clearly communicated to appropriate and should monitor properly.

Completeness

Decision making process needs accurate relevant and complete information in a summarize form. Therefore, generated reports should eliminate confusions and voluminous detail. Information that is inappropriate, unnecessary, or too detailed is in vain for effective decision making. Management Information System (MIS) must be appropriate and supported the management of all level.

(http://wiki.answers.com/Q/Characteristics_of_management_information_system_n_of_management_information_system#ixzz17cLwXsoj retrieved on 5-De-10 at 1200 hrs)

Management by Objectives

Management Information System (MIS) is very useful in generating statistical reports and data analysis. It can also be of use for a Management by Objectives (MBO) tool.

Management by Objectives (MBO) is a management process by which managers and their subordinates agreed upon a series of objectives to achieve within a set time period. These objectives are set using the SMART ratio. This SMART ratio means that objectives should be Specific, Measurable, Agreed, Realistic and Time-Specific.

(http://wiki.answers.com/Q/management_by_objective#ixzzs12wdeXsa retrieved on 2-Dec-10 at 1100 hrs)

Goal of Management Information System (MIS)

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Management Information System (MIS) is used mostly at every levels of management. It should be supportive for the institutions in term of achieving its goals and objectives. On the other hand Management Information System (MIS) can be used as financial accounting systems that are used to maintained record keeping activities of the financial matters. According to Comptroller's Handbook, An institution's Management Information System (MIS) should be designed to achieve the following goals:

- Enhance communication among employees.
- Deliver complex material throughout the institution.
- Provide an objective system for recording and aggregating information.
- Reduce expenses related to labor-intensive manual activities.
- Support the organization's strategic goals and direction.

As Management Information System (MIS) provides fact to the decision makers, it supports and enhances the overall decision making process. Management Information System (MIS) also enhances job performance throughout an institution. At the top level management, management information system (MIS) provides the relevant information which is helpful for the strategic planning or decision making. On the other hand Management Information System (MIS) also provides the means through which the organization activities are monitored and information is disseminate to management, employees, and end users.

Effective Management Information System (MIS) should ensure the appropriate presentation formats and time frames required by operations. Management Information System (MIS) can be maintained and developed by either manual or automated systems or a combination of both. It should always be sufficient to meet an institution's unique goals and objectives. These systems should be accessible and useable at all appropriate levels of the organization.

Management Information System (MIS) is a critical component of the institution's overall risk management strategy. Management Information System (MIS) supports management's ability to perform such reviews. Management Information System (MIS) should be used to recognize, monitor, measure, limit, and manage risks. Risk management involves four main elements:

- Policies or practices.
- Operational processes.
- Staff and management.
- Feedback devices.

Frequently, operational processes and feedback devices are intertwined and cannot easily be viewed separately. The most efficient and useable Management Information System (MIS) should be both operational and informational. As such, management can use Management Information System (MIS) to measure performance, manage resources, and help an institution comply with regulatory requirements. Management Information System (MIS) can also be used by management to provide feedback on the effectiveness of risk controls.

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Controls are developed to support the proper management of risk through the institution's policies or practices, operational processes, and the assignment of duties and responsibilities to staff and managers. (Comptroller's Handbook, Management Information Systems, p 5)

Benefits of Management Information System (MIS)

The Management Information System (MIS) can deliver great benefits to enterprises in educational institutions. These benefits are following:

Core Competencies

Every market leading enterprise will have at least one core competency, a function they perform better than their competition. By building an exceptional management information system into the enterprise it is possible to push out ahead of the competition. MIS systems provide the tools necessary to gain a better understanding of the market as well as a better understanding of the enterprise itself.

Enhance Supply Chain Management

Improved reporting of business processes leads inevitably to a more streamlined production process. With better information on the production process comes the ability to improve the management of the supply chain, including everything from the sourcing of materials to the manufacturing and distribution of the finished product.

Quick Reflexes

As a corollary to improved supply chain management comes an improved ability to react to changes in the market. Better MIS systems enable an enterprise to react more quickly to their environment, enabling them to push out ahead of the competition and produce a better service and a larger piece of the pie.

Further information about MIS can be found at the Bentley College Journal of MIS and the US Treasury's MIS handbook, and an example of an organizational MIS division can be found at the Department of Social Services for the state of Connecticut.

(<http://www.bestpricecomputers.co.uk/glossary/data-recovery.htm> retrieved on 3-Dec-2010 at 2300 hrs)

The importance of management information technology in an organization and its effectiveness is being realized over the world. As elucidated 'by Dan-Isa (2001), the fact that the provision of efficient information system in an organization, which is almost as crucial as the supply of funds to an organization, has led to the emergence of a special unit in organizations, called "Management Information Systems" (MIS). Management Information Systems (MIS) focus primarily on resource administration and provide top management with reports of collective data

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(Adamu, 2001). Available literature on Management Information Systems shows that studies on the relevance of MIS to organizational management and effectiveness are mainly on business organizations. Furthermore, studies on MIS in the school system focus attention largely on higher educational institutions, especially the Universities. Batsman (1972) determined the current status of MIS assisted by electronic data processing in higher education in America and found that MIS was predominantly utilized in the areas of student records and finance. However, Garret's (1990) study concluded that information systems are useful for decision-making with a particular reference to fiscal planning and allocation of personnel resources in the North Carolina Universities. Alabi's (1998) study revealed that MIS was significantly used for administrative decision making in the Nigerian universities, while the system was not effectively utilized for budgeting control in state universities. (W.B. Adeoti-Adekeye, The importance of management information systems p 324)

COMSATS Institute of Information Technology

Introduction

The Commission on Science and Technology for Sustainable Development in the South (COMSATS) is an international organization. It aims to reduce the ever-growing gap between the developed and developing world through useful applications of science and technology.

One of the most successful projects of the COMSATS has been the establishment of the COMSATS Institute of Information Technology (CIIT) in Islamabad, Pakistan. It was established with the objectives of providing quality education and training in the field of Information Technology (IT).

The COMSATS Institute of Information Technology made a humble start in April 1998 by initiating certificate and diploma courses in IT. The achievements in its initial two years were so impressive that when the CIIT requested for its own charter, the Government of Pakistan readily acknowledged its excellent services and reposed its confidence by according to it the degree awarding status in August 2000. Ever since, the CIIT has been progressing and growing by leaps and bounds. The CIIT has been ranked among the top 7 universities/DAIs during 2006 by the Higher Education Commission.

The CIIT is now slated for up gradation as a university by the name of 'COMSATS University' through an Act of the Parliament.

At present the CIIT, besides its principal seat, has seven other fully functional campuses at Islamabad, Lahore, Abbottabad, Wah, Attock, Sahiwal, and Vehari, while more campuses at Gujrat and Toba Tek Singh are in advanced planning stage. On the advice of the Federal Government of Pakistan, efforts are under way for opening up of more campuses in the provinces of Sindh and Balochistan as well. The CIIT is exploring possibility of opening an overseas campus in the Gulf region.

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Vision

The CIIT is dedicated to the search for truth through advancement of learning and extending the frontiers of knowledge; to the sharing of this knowledge through education in academically

diverse disciplines; and to the application of this knowledge to benefit the people of Pakistan in particular, and the Muslim Ummah and the world, in general.

The Mission

CIIT, founded in the belief that understanding enriches all people, is dedicated to the search for truth through advancement of learning and extending the frontiers of knowledge; to the sharing of this knowledge through education in an academically diverse range of disciplines; and to the application of this knowledge to benefit the people of Pakistan in particular, and the Muslim Ummah and the world, as a whole. The Institute's mission is threefold:

Research and Discovery

Generate and preserve knowledge, understanding, and creativity by instigating enquiry, conducting high-quality research, and promoting scholarship that benefit students, scholars, and communities across the country, Muslim Ummah, and the world at large.

Teaching and Learning

Share that knowledge, understanding, and creativity by providing a broad range of educational programs among a diverse community of teachers, and taught, and prepare professional graduate, and undergraduate students, as well as non-degree-seeking students interested in continuing education and lifelong learning, for active roles in competitive and culturally diverse environments.

Outreach and Public Service

Extend, apply, and exchange knowledge between the institute and society by applying scholarly expertise to intellectual, social and technological problems, by helping organizations and individuals respond to their changing environments, and by making the knowledge and resources created and preserved at the institute accessible to the citizens. Using the resources of its multiple campuses in an integrated fashion, the Institute vies to strengthen the services to the society through educating a modern work force, undertaking research and development, technology commercialization, and partnership with businesses, government and civil society groups.

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Strongly Agreed		Agreed		Uncertain		Disagreed		Strongly disagreed	
F	%	F	%	F	%	F	%	F	%
4	33.3	8	66.7	0	0	0	0	0	0

Table: 4.1 *MIS make it easy to answer the daily queries.*

Strongly Agreed		Agreed		Uncertain		Disagreed		Strongly disagreed	
F	%	F	%	F	%	F	%	F	%
4	33.3	8	66.7	0	0	0	0	0	0

Table: 4.2 *MIS reduce the work load*

Strongly Agreed		Agreed		Uncertain		Disagreed		Strongly disagreed	
F	%	F	%	F	%	F	%	F	%
2	16.7	2	16.7	8	66.7	0	0	0	0

Table: 4.3 *Data updation is made on regularly basis*

Table: 4.4 *In Service training are given*

Strongly Agreed		Agreed		Uncertain		Disagreed		Strongly disagreed	
F	%	F	%	F	%	F	%	F	%
4	33.3	6	50.0	0	0	2	16.7	0	0

Table: 4.5 *The MIS contribute to generate different sort of report in short period of time*

Table: 4.24. *Students are equally benefited by the MIS as other departments*

Strongly Agreed		Agreed		Uncertain		Disagreed		Strongly disagreed	
F	%	F	%	F	%	F	%	F	%
2	16.7	10	83.3	0	0	0	0	0	0

Strongly Agreed		Agreed		Uncertain		Disagreed		Strongly disagreed	
F	%	F	%	F	%	F	%	F	%
5	41.7	7	58.3	0	0	0	0	0	0

Strongly Agreed		Agreed		Uncertain		Disagreed		Strongly disagreed	
F	%	F	%	F	%	F	%	F	%
7	58.3	5	41.7	0	0	0	0	0	0

Strongly Agreed		Agreed		Uncertain		Disagreed		Strongly disagreed	
F	%	F	%	F	%	F	%	F	%
5	41.7	5	41.7	0	0	2	16.7	0	0

Strongly Agreed		Agreed		Uncertain		Disagreed		Strongly disagreed	
F	%	F	%	F	%	F	%	F	%
2	16.7	8	66.7	0	0	2	16.7	0	0

Table: 4.25. *Your MIS is centralized.*

Table: 4.26. *Your MIS is connected with others departments.*

Table: 4.27. *Other departments / campuses are also getting benefits by your MIS.*

Table: 4.28. *The facilities provided by the university are satisfactory to run this*

Strongly Agreed		Agreed		Uncertain		Disagreed		Strongly disagreed	
F	%	F	%	F	%	F	%	F	%
6	50.0	6	50.0	0	0	0	0	0	0

Table: 4.29. *Sometimes you face hurdles to maintain the system.*

Strongly Agreed		Agreed		Uncertain		Disagreed		Strongly disagreed	
F	%	F	%	F	%	F	%	F	%
5	41.7	2	16.7	0	0	2	16.7	0	0

Table: 4.30. MIS is used to forecast future

Strongly Agreed		Agreed		Uncertain		Disagreed		Strongly disagreed	
F	%	F	%	F	%	F	%	F	%
8	66.7	4	33.3	0	0	0	0	0	0

Strongly Agreed		Agreed		Uncertain		Disagreed		Strongly disagreed	
F	%	F	%	F	%	F	%	F	%
7	58.3	5	41.7	0	0	0	0	0	0

Table: 4.31. Record kept under MIS is better than manual.

Table: 4.32. Chances of the errors are reduced due to MIS.

Table: 4.33. MIS version are made regularly

Strongly Agreed		Agreed		Uncertain		Disagreed		Strongly disagreed	
F	%	F	%	F	%	F	%	F	%
3	25.0	4	33.3	5	41.7	0	0	0	0

Strongly Agreed		Agreed		Uncertain		Disagreed		Strongly disagreed	
F	%	F	%	F	%	F	%	F	%
3	25.0	5	41.7	2	16.7	2	16.7	0	0

Table: 4.34. MIS is essential for the smooth administrative activities.

Strongly Agreed		Agreed		Uncertain		Disagreed		Strongly disagreed	
F	%	F	%	F	%	F	%	F	%
4	33.3	5	41.7	3	25.0	0	0	0	0

Table: 4.35. Do you evaluate your system using MIS on regular basis?

Yes		No	
F	%	F	%
200	100	0	0

Table: 4.36. Do you think professional / training education is require to run MIS system?

Respondents	Strongly Agreed		Agreed		Uncertain		Disagreed		Strongly disagreed	
	F	%	F	%	F	%	F	%	F	%
Students										
Strongly Agreed	4	33.3	5	41.7	3	25.0	0	0	0	0
Managers										
Strongly Agreed	5	25.0	6	30.0	5	25.0	5	25.0	2	10.0
	5	41.7	2	16.7	5	41.7	0	0	0	0

Strongly Agreed		Agreed		Uncertain		Disagreed		Strongly disagreed	
F	%	F	%	F	%	F	%	F	%
5	41.7	7	58.3	0	0	0	0	0	0

--	--	--	--	--	--	--	--	--	--	--

Strongly Agreed		Agreed		Uncertain		Disagreed		Strongly disagreed	
F	%	F	%	F	%	F	%	F	%
50	25.0	69	34.5	25	12.5	41	20.5	10	5.0

Table: 4.1. *You have account on COMSIS.*

Strongly Agreed		Agreed		Uncertain		Disagreed		Strongly disagreed	
F	%	F	%	F	%	F	%	F	%
15	7.5	73	36.5	35	17.5	52	26	25	12.5

Table: 4.10. *The management information system is reliable as compare to manual record keeping.*

Table: 4.11. *Library MIS system is facilitated to search a book.*

Table: 4.12. *MIS of library record is up to date.*

Table: 4.15. *You can register yourself in any course online.*

Conclusion and Discussion

All students have access to the COMSIS account from anywhere; the system is friendly in use but the required information regarding admission, time table and date sheet is not available to the majority of the students. Students have facility to register online in any course and their results are also available to them online. Students have access to digital library. Library Management

Strongly Agreed		Agreed		Uncertain		Disagreed		Strongly disagreed	
F	%	F	%	F	%	F	%	F	%
25	12.5	52	26.0	55	27.5	43	21.5	25	12.5

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Strongly Agreed		Agreed		Uncertain		Disagreed		Strongly disagreed	
F	%	F	%	F	%	F	%	F	%
40	20.0	71	35.5	40	20.0	28	14.0	21	10.5

system is up to date however a majority of the students do not use it for searching books. The Management Information System (MIS) facilitates the academics and administrative activities and is more reliable than manual record keeping. The Management Information System (MIS) is not centralized for all the campuses; updating is not made on the regular basis. Managers of MIS sometimes face hurdles regarding the maintenance of the system. Management Information System (MIS) contributes to forecast the future, evaluate the system and to generate different sorts of the reports in short period of the time. Management Information System (MIS) make easy to address daily queries and has reduced the work load and chance of error. Almost all managers were professionally qualified. However, they are of the opinion that in service trainings are essential for the smooth functioning of the system.

Recommendations

There are seven campuses of COMSATS Institute of Information Technology (CIIT), they may be interconnected with centralized database, e.g. COMSIS. Although majority of the manager were professional qualified but in service training would be useful to keep their knowledge update to meet emerging challenges and problems. System may be evaluated on regular basis to make it more effective. For better utilization of the system, student may be given orientation trainings and feedback about the effectiveness of the system can be taken from them. To make the system more effective information about the time table, date sheet, lectures etc, may be provide to the student through the system. Due to the time and finance constrains; this research was restricted to only COMSATS Institute of Information Technology (CIIT), Islamabad, so its, so its result would not be over generalized. To overcome these deficiency following are the recommendation of the future studies: Further studies can be undertaken to find out the role of the Management Information System (MIS) in all campuses of the COMSATS Institute of Information Technology (CIIT).Sample size may also be enlarged. Different tools for the data collection e.g. interview and check list can also be taken for the future studies.

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Sociolinguistic Impact of Loanwords of Arabic Origin on the Urdu Language**

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Abstract

This paper is restricted to the discussion of the socio-cultural impact of loanwords of Arabic origin on Urdu in the Indian sub-continent. The present paper begins by giving a brief history of the Arabs' contact with the population of the Indian sub-continent speaking different languages. It discusses briefly the advent of the Muslims speaking different languages including Arabic resulting in the evolution of a new language, later known as Urdu. The paper discusses the circumstances under which word-borrowing has taken place.

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An attempt has been made to discuss the conditions and the results of interaction between two cultures and a linguistic amalgamation in terms of cultural interaction and its acceptance, acculturation and culture learning. The conditions and the results of such interaction of cultures resulted in the inflow of Arabic loanwords into Urdu related to Islamic theology, philosophy, customs, traditions and spiritual values.

This study is part of our continuing attempt to present a comprehensive study of loanwords of Arabic origin with specific reference to the socio-cultural aspects of these loanwords. A comprehensive list of loanwords of Arabic origin has been prepared and presented with a view to studying the socio-cultural aspects of these words. Keeping in view the limited scope of this paper, the words related to the religious domain have been discussed in some details. Finally, an attempt has also been made to discuss the extent of borrowing and subsequent acculturation and culture learning.

Key Words: Loan words, Socio-cultural synthesis, Linguistic amalgamation, Acculturation, Culture learning, Directionality, Extent of borrowing, Qualitative description of loanwords of Arabic origin

1.0 Introduction

The Arabs, Arabic language, Islam and the Prophet Muhammad (PBUH) are inseparable. The contact with the Arabs and Islamic culture had exercised an immense impact on the socio-cultural life of the Muslims in the Indian subcontinent.

The vocabulary of a language is one of the most reliable sources indicating the socio-cultural changes taking place during a specific period of time. It also indicates the socio-cultural advancement of a particular linguistic community. The Urdu language of today reflects the growth and development over the past few centuries. The political, social, and religious events over these centuries had not only affected the Urdu speakers but also had a recognizable effect on their language and culture. The contact with the Arabs and the Turks' invasions of the Indian sub-continent resulted in a considerable fusion of different cultural groups - Arabs, Iranians, Turks, Afghans, etc. The socio-cultural contact between the Muslim soldiers speaking different languages including Arabic and the local population of the Indian sub-continent resulted in the

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evolution of a new language, later known as Urdu. Consequent upon this sustained contact between the languages of the soldiers and the dialects spoken by the local population, the process of linguistic amalgamation started. Lexical borrowings into Urdu vocabulary may be considered as the outcome of the socio-cultural impact of Arabic and Persian on various groups of people of the Indian sub-continent and their culture. The historical overview of Urdu vocabulary reveals the fact that one of the sources of new words during the last few centuries had been the borrowing from other languages in contact.

Urdu, a member of the Indo-Aryan family of languages, has been especially hospitable towards Persian and Arabic. The exposure to Arabic language and Islamic culture had a major impact on the social life of Urdu speakers and their language. The first exposure to Islamic culture and Arabic language began with the arrival of the Arabs in the early part of the 8th century. Additional and sustained contact continued when the Mughals came to the Indian sub-continent and established their empire. It was during this period that the exposure to the Islamic faith influenced the population in various parts of the Indian sub-continent (where the Mughals had their effective rule), which led to the evolution of Urdu as a language through the borrowing of a large number of Arabic and Persian words and expressions into Urdu vocabulary.

1. 1. Research Hypotheses

- i) Lexical borrowing is an outcome of a sustained contact between different speech communities.
- ii) The vocabulary of a language is a reliable source for analyzing the sociocultural changes during a specific period of time.
- iii) With cultural synthesis, the process of linguistic amalgamation influences the linguistic scenario of linguistic communities in contact.
- iv) Linguistic amalgamation results in acculturation and culture learning.

1.2. Scope of the Study

This paper discusses the contact the Arabs had with the people of the Indian-subcontinent resulting in a sociocultural synthesis and in a process of linguistic amalgamation. This paper is restricted to

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the discussion of the sociocultural impact of Arabic loanwords on the present-day vocabulary of the Urdu language.

1.3. Material studied

The research presented in this research paper is a qualitative study and hence it is not based on empirical-experimental research. It is a descriptive analytical study of Arabic loanwords in Urdu. The data has been collected over a period of nearly two years while teaching at the College of Languages and Translation, King Khalid University, Kingdom of Saudi Arabia. The sources of the data include

- i) Arabic- Urdu dictionaries
- ii) Urdu-Arabic dictionaries
- iii) Urdu- Arabic list of words randomly found
- iv) Words collected from religious books (mainly the translation of Arabic texts)
- v) Words collected from the other domains such as administration, arts and learning, medicine, education domestic items, literary words, legal terms, etc.
- vi) Words based on the experience of the authors of this paper who happen to be the native speakers of Urdu from different parts of India and who have a working knowledge of Arabic.

Methods of Analysis

- i) A fairly large number of words (Arabic loanwords) used in the present-day vocabulary of Urdu were collected.
- ii) These words have been transcribed, using a certain number of diacritics whenever needed.
- iii) These words have been categorized according to their occurrence in different domains.
- iv) These loanwords were analyzed so as to understand the extent of borrowing, the amount of culture learning and the directionality.
- v) An attempt has been made to discuss the process of acculturation resulting in the sociocultural impact of these words on the Urdu language and its speakers.

2.0. The Socio-Historical Contexts

2.1. The Advent of Muslims in the Indian Sub-continent: Its Socio-Cultural Impact on Urdu

Mohammad Bin Qasim was the first Arab, who entered the northwestern part of the Indian sub-continent in the year 711 A.D. along with his army. The first intensive exposure to the Islamic

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culture and Arabic language came with the arrival of these Arabs in the northwestern part of the subcontinent. Mohammad Bin Qasim established a Muslim state in and around the province of Sindh and the Arabs remained in power continuously for 300 years or so (711 to 1000 AD). A little later, Mohammad Ghaznawi took over the province of Sindh in the year 1023 A.D. Thus, the Arab influence continued for about 300 years on the languages as well as on the socio-cultural life of the people in North-Western part of India.

Then, another political change took place, when the Persian and the Turkish speaking Muslims took over the power in the later part of the 10th century. These new settlers remained confined to the province of Punjab and influenced the socio-cultural milieu of the people. In the 12th century AD, the Mughals appeared in north India and settled in and around Delhi. A new political change took place when Delhi was conquered by them in 1193 AD. This political change had a great impact on the social and cultural life of the people. By this cultural synthesis, a large number of loan words entered into the local dialects of Delhi.

Baber, the first Mughal king, invaded south Asia with a large army comprising soldiers from different countries (Turkey, Arab, Iran, Afghanistan, Russia, and some other countries). These soldiers had problems in interacting with one another and hence an urgent need of a medium of communication among them laid the foundation for the emergence of a new language.

The newly evolved language containing words from different languages of the soldiers and the words from local dialects (Khari Boli, Haryanvi, and Braj Bhasha) was called during medieval period by various speech communities and during different periods of time as Hindavi, Zuban-e-Urdu-e-Muallah, Zuban-e-Urdu, Zuban-e-Hind, Hindi, Zuban-e-Delhi, Gujri and Rekhta. The term *Urdu* (after a Turkish word meaning ‘army’) became popular only when the Mughal emperor Shahjahan built a walled city Shahjahanabad as his capital in Delhi in the year 1639 AD. The market area close to the Royal Fort (Red Fort) popularly known as Lal-Qila, was called Urdu Bazaar. However, Urdu emerged as the dominating force replacing Persian gradually in the 18th century only.

2.2 The Growth and Development of Urdu

Urdu, a member of the Indo-Aryan family of languages uses Perso-Arabic script, indigenously modified to suit the requirements of *Prakrit* based *Apbhransh* dialects sharing Indic base.

As stated earlier, Urdu grew out of the interaction between the Muslims speaking different languages and the dialects spoken by the native population. Like all other languages, Urdu had to pass through the process of evolution over a period of 800 years or so. Historically, Urdu originated in the later part of the 12th century AD when the Muslim rule was established in Delhi initially in the north western part of the Indian sub-continent. These Muslims used to speak

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different languages. However, Arabic remained their commonly accepted religious language whereas Persian continued to be their cultural as well as the language of administration. It is also noted that the elite and the ruling class spoke the Turkish language along with Persian.

The political incident making Delhi as the capital had a far reaching impact on the socio-cultural life of the native people of north India. Besides, the cultural synthesis, the process of linguistic amalgamation started. Urdu, a newly born Indo-Aryan language, flourished at a very rapid speed in India. This newly evolved language spread very fast in the Indian sub-continent by 'Sufis' who traveled far and wide preaching the message of Islam. Urdu reached south India (Deccan) in 1294 AD when Malik Kafur conquered Devagari (Daulat Abad).

The change of capital from Delhi to Daulat Abad resulted in large migration of people from north India to south India. These people spoke the same language called Hindavi or Rekhta (mixed language) which was in the state of fluid and undergoing the process of its formation. It may be pointed out that the people of north India, irrespective of their cultural and religious affiliations equally participated and contributed towards the growth and development of Urdu. When Urdu was used for literary purposes including poetic expressions, Muslims, Hindus, Sikhs and others contributed towards its development. It may be concluded from the above discussion that the Urdu language is purely an Indo-Aryan language born in India and it is the symbol of common cultural heritage.

3.0. The Socio-Cultural Context

Since the arrival of the Arabs in 711 A.D. until the advent of the 21st century is a stretch of more than 1300 years. During this period of socio-cultural and socio-religious changes, words of Arabic origin must have made their way into Urdu lexicon directly or through Persian. The spread of Islam resulted in mosque-building and establishing schools (madrasas) for Islamic teaching which were quite often attached to the mosques. Apart from the impact and power of Mughal rule, it is also likely that the conversion to and practice of Islam was responsible for the borrowing of Arabic words into vocabulary used by the people of the sub-continent, especially in the north and northwestern parts. The earlier borrowing included a large number of words associated with the new faith (Islam). Garland Cannon (1994: 2-3) states: "The Mogul Movement through the Middle-East all the way into India assured historical transfer of Arabic religious and other words into languages from Turkey to Bay of Bengal". Thus it may be surmised that Arabic loanwords may have found their way into the newly evolving language Urdu vocabulary through religious writings prior to their entry into both religious and non-religious Urdu literature. The presence of Arabic loanwords is attested in the 12th century A.D. in the poetry of Amir Khusrau and in the *Sayings of Sufis* composed in Urdu. The presence of Arabic loanwords is also attested in the Deccani Urdu poets, like Khuwaja Banda Nawaz Gesu

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Daraz, Aminuddin Ala, Mullah Wajhi, et al. The rapidity with which the loanwords of Arabic origin were assimilated is evidenced by the promptness with which many of these words have become the basis of derivatives, though the basic structure of these words remained purely Urdu. With the passage of time, certain loanwords have been nativized or naturalized as they have undergone the same process that affects the other words of Urdu confirming to the pronunciation and grammatical rules of Urdu language (for details, see Khan and Alward, 2011).

5. 0. Linguistic-Outcomes of Socio-Cultural Synthesis and Amalgamation of Urdu and Arabic

As a language of the Holy Qur'an, Arabic enjoyed a very special status and supplied the needed vocabulary of its theology to hundreds of millions of people, who embraced Islam in different parts of the world. Historically, for theological concepts, Urdu depended upon Arabic as English remained dependent upon Latin and Greek for Christian theology and its related concepts. As a result of socio-cultural synthesis and linguistic amalgamation of Arabic and Urdu, the inflow of Arabic words into Urdu vocabulary got accelerated through the translation of Arabic books on Islam into Urdu between the 12th and the 18th centuries. However, Urdu is not the only language which absorbed thousands of words of Arabic origin in its lexicon. The other languages spoken in the Indian sub-continent also received and retain a good number of words and phrases in both religious and non-religious domains in their vocabulary.

5. 1. The Extent of Loanwords of Arabic Origin in Urdu

Even a cursory look on an Urdu dictionary makes one realize the extent of loanwords of Arabic origin into Urdu vocabulary. The researchers are not aware of any survey indicating the approximate number and the percentage of these loanwords into the present-day vocabulary of Urdu. Arabic loanwords are attested in almost all the domains as a linguistic-outcome of the contact between Arabic and Urdu. A large number of these words and their derivatives belong to religious domain, frequently and commonly used by the Urdu speakers as well as by the Muslims speaking languages other than Urdu and residing in different parts of the Indian sub-continent. There is ample research evidence to conclude that many of these words have been assimilated and nativized in Urdu language. Further, some of these words are commonly used by the Urdu speaking population irrespective of their religious faith. There are many words which form an integral part of every-day speech. These loanwords of Arabic origin employed in the every-day vocabulary indicate their presence in almost all walks of life. It will not be out of the place to mention that Arabic numerals with the decimal system revolutionized the thinking of the entire world.

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The following is a considerable sample of loanwords of Arabic origin used in different socio-cultural domains. The listing of these words has been done with a view to providing a broad idea of the extent of borrowing and its impact on the phonological, morphological, and semantic levels of Urdu. Keeping in view, the limited scope of this paper, loanwords of Arabic origin used by the Urdu speakers in the following domains (religion, culture, philosophy, language and literature), have been discussed. The following are the basic Arabic loan words belonging to different domains. However, no claim is made to produce a complete list of words belonging to these domains.

5.1.1. Words Belonging to Religious and Cultural Domain

Among the nouns borrowed from Arabic and having to do with Islamic belief and doctrine are the following :/i:man/ 'faith'/di:n/'religion' /əzan/ 'call for prayer' / muəzzin/ ' the one who gives a call for a prayer' /imam/'one who leads a prayer' / məsʒid /'mosque' / səla(t)/ 'prayer' / vuzu/ 'ablution'/təyəmmum/ 'dry ablution' / niyə(t)/ 'intention' / rəkət/ ' a part of a formal prayer' /ruku/ 'bow on to the knees in formal prayers' / səjdə/ 'prostration at the time of prayer' / fərz/ 'obligatory prayer/act' / sunnə(t) 'the acts and prayer performed by the Prophet Muhammad(pbuh) /hədi:s/ 'The Prophet's traditions and sayings' /səhabə/ 'the companions of the Prophet'/təhjud/ 'late night prayers' /xhutbə/ 'adrees, speech, etc.' /vajib/ 'obligatory act or prayer next to fərz' / nəfl/ ' voluntary prayer' / dua/ 'supplication' /γusl/ 'bath' /təharə(t)/ 'cleanliness' / həj/ 'pilgrimage to Makkah' / umra/ 'mini-haj' / təvaf/ 'circling around the Ka'ba' / zəka(t)/ 'purifying dues'/ fitrə/ 'charity' / sədqə/ 'alms' /əhram/ 'loin-cloth to be worn at the time of Hajj and Umrah' muhrrəm/The first month in the Islamic calendar' //nikah/ ' Islamic marriage bond'/vəli:ma/ 'wedding feast'/ təlaq/ 'divorce' /əzab/ 'punishment' /əjr/ 'reward' / həram/ 'forbidden' /həlal/ 'permissible' / təqva/ 'inner conscience' / Šəriyə(t)/ ' religious code of conduct'/əqi:də/ 'belief' /fətvaə/ 'legal opinion on religious matters'/mufti:/ 'a religious scholar who issues a decree'/quran/ 'the Holy Book of Muslims' /ayat/ 'verses from the Holy Qur'an' surə(t)/ ' a collection of some aya(t)' / hafiz/ 'one who memorizes the Quran' /tilavə(t) 'recitation of the Quran' / təwhi:d/ 'monotheism' / nəbi: / 'prophet' / məlayik/ 'angel' /širk/ 'polytheism' /mušrik/ ' polytheist/pagan' / šəytan/ 'satan' /jənnə(t)/ 'heaven' /jəhnnəm/ 'hell'/munafiq/ 'hypocrite'/kafir/ 'non-believer'/ fasiq/ 'sinner, untrustworthy'// təvhi:d/ 'Islamic theology, monotheism'/ axirə(t) ' the world hereafter' /qəyamə(t)/ 'dooms day' / umma/ 'Islamic community' / alim/ 'learned person/scholar'/xəlifə/ 'a successor of the Prophet Mohammad'(pbuh) /muršid/ , 'guide'/ nəqš/ 'pattern, design'/ələm/ 'flag'/vəfat/ 'demise'/ ru:h/ 'soul'/ yəhu:d/ 'jew' /səlam/ 'peace' /təwbə/ 'repentance' /kəfən/ 'coffin'/ ərkan/ 'principles of Islam' /dəfən/ ' to burry' /kəfən/ 'coffin'/ ərkan/ 'principles of Islam'./izzə(t)/ 'respect/honour'

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/ixlaq/ ‘manners/behaviour’/əhtiram/ ‘showing respect/regard’/ziyarə(t)/ ‘visit’ /əwlad/ ‘children’/intizar/ ‘wait’ /baqi:/ ‘remaining/debt’/ səfər/ ‘journey’/musafir/ ‘passenger/traveler’/muhəzzəb/ ‘cultured/disciplined’

5.1.2. Names of Different Prayers

/fəjr/, /zuhər/, /əsər/, / məγrib/, /iŠa/ (five obligatory prayers); /təhəjjud/ ‘late night prayer’ /etc.

5.1.3. Names of the Prophets and Angels

/muhəmməd (pbuh)/ ‘the Prophet Muhammad’ /i:sa/ ‘Jesus, the son of Mary’, /mu:sa/ ‘Moses’/davud/ ‘David’ /adəm// ‘Adam’ / ibrahi:m/ ‘Abraham’ Among angels: / jibri:l/ ‘Gabriel’/ israi:l/ ‘israel’/ israfi:l/ ‘israfeel’ and others.

5. 1. 4. Divine Books Revealed on Prophets

/quran/ ‘the Holy Book of Muslims revealed on the Prophet Muhammad (pbuh)’ /inji:l/ ‘the Holy Book revealed on Jesus, /təwrat/ ‘ the Holy Book revealed on Prophet Moses, /zəbu:r/ ‘the Psalms, the scripture revealed on Prophet David.

5. 1. 5. Names of Religious Festivals

/i:dulfitr/ ‘celebration of Eid after the month of Ramazan’, /iduləzha/ ‘celebration of Eid on the occasion of Hajj’.

5. 1. 6. Names of the Months; Days and Directions

/muhərrəm/ ‘the first month of the Islamic calendar / rəməzan/ ‘the ninth month of the Islamic calendar’ / jumə/ ‘Friday’ / məŠriq/ ‘east’ / məγrib/ ‘west’/ Šumal/, / jənu:b/ ‘south.’

5. 2. Words Used in Domestic Life of the People

Arabic loanwords also exercised a profound influence on the domestic life of the people and their culture. This can be attested in the adoption of many loanwords used in almost every walk of life.

5. 2. 1. Words Used in Administration

/hukumə(t)/ ‘government’ /vəzi:r/ ‘minister’ / nizam/ ‘system’ / jurm/ ‘crime’/ mujrim/ ‘criminal’ / qanu:n/ ‘law’/ədl/ ‘justice’ / adil/ ‘fair’ /fəwj/ ‘troops’ / jasu:s/ ‘spy’ /vəzarət-e - xarjə/ ‘ministry of external affairs’ / vəzarət-e- dakhilə/ ‘ministry of interior’ /idarə/ ‘institution’ /ədliyə/ ‘court of law.’

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5. 2. 2. Words Used in Arts and Learning

/ilmenəju:m/‘astronomy’/ki:miya/‘chemistry’/jəʔrafiya/‘geography’/fəlsəfə/‘philosophy’/nəfsiya/‘psychology’/maliyat/‘finance’/hisab/‘accounts’/məntəq/‘logic’/təvari:x/‘history’/fiqə/‘jurisprudence’ /əljəbr(ə)/‘Algebra.’

5. 2. 3. Words Used in Medicine

/təbi:b/‘physician’/tib/‘medicine’/sehə(t)/‘health,physique’/mərz/‘disease’/məri:z/‘patient’/ilaj/‘treatment’/nəbz/‘pulse’/jism/‘body’/jild/‘skin’/Šifa/‘cure’/zukam/‘flue,commoncold’/məwt/‘death’/jərrah/ ‘surgeon’.

5. 2. 4. Words Used in Education

A certain number of words related to education reflect another aspect of socio-cultural impact of Arabic on Urdu. Some of these words are listed below:

/tali:m/‘education’/təbriyət(t)/‘training’/mədrəsə/‘school’/mudərris/‘schoolteacher’/dərs/‘teaching’/ilm/‘knowledge’/muəllim/‘instructor’/alim/‘scholar’/jumlə/‘sentence’/qəwaid/‘grammar’/talib/‘student’ /talibə/ ‘student(female)’.

5. 2. 5. Domestic Items

/qəmi:s/ ‘shirt’ / jəb/ ‘pocket’ /izar/ ‘trousers’ /libas/ ‘dress’ /kursi/ ‘chair’ / qələm/ ‘pen’ /kitab/ ‘book’ /əxbar/ ‘newspaper’/xəbər/ ‘news item’ /jərayid/ ‘magazine’/səndu:q/ ‘box’ /bab/ ‘gate/door’ /nəhər/ ‘canal’/səmə/ ‘fruit, result’ /həlwə/ ‘sweets’/zəytu:n/ ‘olive’/inji:r/ ‘fig’/hijab/ ‘veil’ /itr/ ‘perfume’/yasmi:n/ ‘a fragrant flower’.

5. 2. 6. Literary Words

/ədəb/ ‘literature’ /Šer/ ‘poetry’/qissə/ ‘story’ /rəwayə(t)/ ‘novel’ /insan/ ‘human being’ /həywan/ ‘animal’/Šəjər/ ‘tree’/təʔjəmə/ ‘translation’/ixlas/‘loyalty, sincerity’ /xəli:j/ ‘gulf’ /xəyal/ ‘imagination, fancy’/dəʔjə/‘degree’ / zəxi:rə/ ‘store/provision’ / xəsara/ ‘loss’ /rabtə/ ‘connection, link’/fəxr/ ‘pride’ / dairə/ ‘circle’ / məqsəd/ ‘destination, purpose’/muqabil/ ‘opposite’ /məqalə/ ‘essay, article’ /qətlə/ ‘murder’ / taxi:r/ ‘delay’ /nəfs/ ‘self’ /hazir/ ‘present’/gayib/‘absent’/bəŠər/ ‘human being’ /unvan/ ‘title’/təfsi:r/ ‘interpretation’/təfsi:l/ ‘detail’ /munasib/ ‘appropriate/suitable’/nəzəriyə/ ‘point of view/hypotheses’ /ehsas/ ‘feelings’ /fəqət/ ‘only’ /səbəb/ ‘cause/reason’/tasi:r/ ‘impact/effect’ /səbiq/ ‘former’/kamil/ ‘complete’.

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5. 2. 7. Legal Terms

/ tərəkə/ ‘legal share in the property’ /qazi:/ ‘judge’/fəriqəyin/ ‘ both the parties’ /vələd/ ‘son of’ /bint/ ‘daughter of’ /səmat/ ‘court hearing’ /ədlīya/ ‘court of law’ /šəhadə(t)/ ‘witness’ /dəli:l/ ‘evidence’ /əhkam/ ‘rulings, decrees’/zamin/ ‘guarantor’ /varis/ ‘successor’/ milkiyə(t)/ ‘property’ /vəqf / ‘endowment’/bəyan/ ‘statement’ / məhrəm/ ‘ unmaritable relationship of a woman (such as father, brother, uncle)’ / məhər/ ‘ the money paid by the groom to his bride’/ zulm/ ‘injustice’ / zalim/ ‘ cruel’ /qanu:n/ ‘law’ /mənsu:x/ ‘abrogation’.

5. 2. 8. Numerals

/əvvəl/ ‘first’ /nisf/ ‘half’/ rubə/ ‘one fourth’/suls/ ‘one third’ /sifər/ ‘zero’

5. 2 .9. Commonly Used Words

/hal/ ‘condition’ /həq/ ‘right ,true’ /tərti:b/ ‘sequence, order’ /nəti:jə/ ‘result, consequence’ /si:da/ ‘straight’ /ittifaq/ ‘agreement’ /ehsas/ ‘feelings’ /əsləh/ ‘arms and ammunitions’ /əmanə(t)/‘deposite’/izafə/‘addition’/intixab/‘selection/election’/tasi:r//impact/influence/effect’/təf si:r/’ interpretation, explanation’ /mi:zan/ ‘balance’ /təwsi:/ ‘expansion, extension’ /jahil/‘ignorant/illiterate’ /hərkə(t) ‘movement’/ həmam/ ‘bathroom’/hadis(ə)/ ‘incident’ /mishap/‘həsəd/ ‘jealousy’,/səbəb/ ‘cause/reason’ /səlu:k/‘behaviour’ /Šərt/ ‘condition’/zəru:ri:/ ‘essential/necessary’ /umr/ ‘age’/yar/ ‘cave’ /xalis/ ‘pure’/səhəl/ ‘easy’/xəta/ ‘mistake’ /misal/ ‘example’ /mumkin/ ‘possible’/ məwsəm/ ‘season’ / ziyadə/ ‘excessive’ / tari:x/ ‘date’/mərəkəz/ ‘centre’ / /bulbul/ ‘nightingale’ /əbabi:l/ ‘ a small bird mentioned in the Quran’/ tajir/ ‘trader’ /tījarə(t)/ ‘trade and commerce’ / səval / ‘question’ /jəvab/ ‘answer,reply’ / aləm/ ‘ world’/ tərti:b/ ‘organization/ order’ / məqsəd/ ‘purpose’ /təsəlsul/ ‘ sequence’ / nuqtə / ‘ dot/ point’ / həd/ ‘limit,boundary’ / rizq/ sustenance’ / fayidə/ ‘benefit, advantage’ / fəqət/ ‘only.’

5. 3. Commonly Used Expressions

Arabic loanwords that made their way into Urdu vocabulary were not confined to grammatical categories like **nouns, adjectives, verbal compounds, and conjunctions**, etc., but were extended to commonly used expressions. Most of these expressions are used by the Muslims speaking Urdu and other languages of the sub-continent. These expressions are used as a part of their cultural nuances indicating clearly the socio-cultural impact of Arabic on Urdu language. It is interesting to note that the contextual meanings of some of these expressions are not understood by all the speakers though these are commonly used by them. Some of these expressions are tabulated below:

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Table: 1. Commonly Used Expressions of Arabic Origin in Urdu

Expressions	Gloss	Context of the Usage
bismillah	begin in the name of Allah	It is sunnah to begin any act by uttering this expression.
inšaallah	Allah willing (God's will above all)	This expression is used by Muslims while referring to the future happenings.
Əlhəmdulillah	All praise be to Allah	It is used to express the highest sense of gratitude to Almighty Allah.
mašaallah	what Allah has willed	It is used to express the admiration for something while attributing all the praise to Allah.
Əllahuəkbər	Allah the greatest	It reminds one that no one is greater than Allah. Therefore, one should not be afraid of anyone except Allah.
jəzakəllah	May Allah reward you	This expression is used to acknowledge someone for his/her help and asking Allah to reward him/her.
lahəwləvələquvvət	Not be so by Allah	It is used by a Muslim to find solace, especially when faced with difficulties or something adverse.
lailahailəllah	There is no deity except Allah	It is used by Muslims to testify monotheism.
Əstəyfirullah	Asking Allah for forgiveness	This expression is used in supplication.

5. 4. Formation of Compounds

The socio-cultural impact of Arabic on Urdu has not remained restricted to the borrowings of Arabic lexemes but has extended to the formation of certain number of **compounds**. The compounds are formed by combining elements from different languages that is of Arabic+Arabic, Arabic+Persian, Persian+Arabic, Arabic+Words of Indic origin. These compounds are classified into different socio-cultural domains according to their usage. However, these compounds have neither been categorized nor analyzed linguistically. Some of these compounds are tabulated below.

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Table 2: Compounds Used Exclusively in Urdu

Compound	Composition	Gloss	Domain
/həmd-o-səna/	Arabic+Arabic	Praise be to Allah (God)	Religion
/som-o-səla(t)	Arabic+Arabic	Fasting and prayer	Religion
/jəbl-e-rəhmə(t)	Arabic+Arabic	The mountain of blessings at Arafat	Religion
/nar-e-jəhənnəm/	Arabic+Arabic	Hell fire	Religion
/səŋg-e-əsvəd/	Persian+Arabic	Black stone placed at Ka'bah to be kissed by pilgrims.	Religion
/ab-e-zəməzəm/	Persian+Arabic	The holy water of zamzam-well.	Religion
/šəri:k-e-həya(t)	Persian+Arabic	wife/life-partner	Literature
/subhu-o-šam/	Arabic+Persian	Morning and evening	Literature
/əllah-hafiz/	Arabic+Persian	May Allah protect you	common usage
/həva-pani:/	Arabic+Indic	Climate	common usage
/hal-čal/	Arabic+Indic	Physical and financial conditions	day-to-day conversation
/ədəb-i:-nišəst/	Arabic+Persian	Literary gathering	Literature

It is interesting to note that the compounds tabulated above are not used in Arabic. As such, these compounds are exclusive to Urdu and are used in the religious, cultural and literary texts.

5.5. Adjectives and Adverbs

As stated earlier, there are a few adjectives, adverbs and prepositions borrowed from Arabic. Some of the examples are tabulated below:

Table 3: Adjectives of Arabic Origin

Adjective	Gloss	Domain	Frequency of Usage
/jədi:d/	new	day-to-day conversation	Frequent
/qədi:m/	old/ancient	day-to-day conversation and literature	Frequent
/zəi:f/	weak	day-to-day conversation and literature	Frequent
/əzi:m	great	Literature	Frequent
/ɣəni:/	rich	Literature	Less frequent
/bəi:d/	far away	Literature	Rare
/səhəl/	easy	day-to-day conversation	Less frequent
/munasib/	suitable	literature	Frequent
/muhəzzəb/	civilized/sophisticated	culture/literature	Less frequent

The adjectives listed above are commonly used by the speakers of Urdu irrespective of their religious faith. Some of the adjectives can be transformed into nouns like /qəri:b/ ‘close’ (Adj.) → /qurbət/ (Noun) ‘closeness’, /məşyu:l/ ‘busy’ → /məşyu:lyət/ ‘the state of being busy’. It is noted that the synonyms of Indic origin are also used as counter parts of some of the adjectives for example: /səhəl/ ‘easy’, /miski:n/ ‘poor’, /bəxi:l/ ‘miser’ are frequently replaced by /asan/, /ɣəri:b /kənju:s/ respectively. The use of these adjectives in different domains including day-to-day conversation indicates the immense socio-cultural impact of Arabic on different social groups speaking Urdu.

In addition to the adjectives, there are a few adverbs borrowed from Arabic and some of these are tabulated below:

Table 4: Arabic Adverbs Used in Urdu

Adverb	Gloss	Domain	Frequency of Usage
/əmu:mən/	Generally	Day-to-day conversation	Frequent
/ɣalibən/	Probably	Literature	Less frequent
/yəqi:nən/	Certainly	Literature	Frequent
/əvvələn/	Firstly	Literature	Less frequent
/təqri:bən/	Approximately	Day-to-day conversation	Frequent

5. 6. Nativised Forms Exclusive to Urdu

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The socio-cultural impact of Arabic on Urdu morphology has been so immense that the suffixes of Urdu, Persian, and Indic origin are attached to the Arabic stems in order to change the grammatical category whereby one borrowed word is transformed into a word with related meaning but it belongs to a different lexical category: Adj. → Noun etc. Such a **process of derivation** is quiet common to Urdu and the same process is also applied to certain borrowed words of Arabic origin. By nativized forms we mean those forms that have Arabic stems followed by native suffixes. These nativised forms are classified into different categories as listed below:

Table 5. Nativized Forms Exclusive to Urdu

Arabic Stem	Gloss	Derived/nativized forms	Gloss
/məzbu:t/	strong (Adj.)	/məzbu:ti:/	strength(N)
/zəru:ri/	essential (Adj.)	/zəru:rət/	necessity(N)
/lazim/	compulsory(Adj.)	/lazimi/	compulsorily (N)
/məwju:d/	present(Adj.)	/məwju:dgi:/	presence(N)
/baqi:/	remaining(Adj.)	/bəqaya/	credit(N)
/jənnə(t)/	heaven (N)	/Jənnəti:/	One who resides in heaven
/ədəb/	literature(N)	/ədəbi/	literary (Adj.)
/xəyr/	well- being (N)	/xəyriyət/	The state of well-being(Abst. N)
/məşyu:l/	busy (Adj.)	/məşyu:lyət/	the state of being busy (Abst. N)

6. 0. Socio-Cultural Aspects of Loanwords

It is an accepted fact that word-borrowing is an outcome of the languages in contact and interaction between different cultures. However, word-borrowing is not merely a linguistic phenomenon but a cultural behavior of a particular linguistic community reflecting its socio-cultural changes within a certain period of time. It is evident from the above examples that most of the terms relating to Islamic theology and its concepts are direct borrowing from Arabic. It is also noticeable that the majority of loan words of Arabic origin in Urdu are nouns. However, a few adjectives, adverbs are also attested. This observation is in accordance with the findings of earlier studies (Morrow, 1982, Takashi, 1991; Poplack and Sankoff, 1984; Sankoff and Miller, 1988), concerning English loanwords in Japanese, Puerto Rican Spanish, and in Canadian-French respectively. Another feature shared by the words listed above is that there are only a few domains which do not include words of Arabic origin in Urdu. The words listed above can be grouped under various aspects of religious terminology.

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6. 1. Words Related to the Principles (Arka'an) of Islam

Words related to the Declaration of Faith and Testifying the True Spirit of Shahada(t) are: /təhwhi:d/ 'monotheism', /vəhdaniyət/ 'oneness of Almighty Allah', /rəsul/ 'Messenger of Allah' (Prophet Muhammad). These words are the true spirit of shahada(t) saying /əʃhədo ənlah ilaha illəllah, və əʃhədo ənnə muhəmmədur rəsul:lləllah/ 'I bear witness that there is no deity except Allah and I bear witness that Muhammad is the Messenger of Allah'.

Words related to the Preparation and Performance of Prayers are: /təharət/ 'purification by having an obligatory bath', /nəjis/ 'ritually unclean', /niyə(t)/ 'intention- a prerequisite for any kind of Prayers or Allah's worship', /vuzu/ 'ablution', /təyəmmum/ 'dry ablution', /ibadə(t)/ 'Allah's worship', /zikr/ 'any form of verbal prayer', /əzan/ 'a call for a prayer', /imam/ 'the person who leads the prayer', /fərz/ 'obligatory prayer/act', /sunnə(t)/ 'the prayer/act performed by the Prophet Muhammad before and after the obligatory prayer', /vitir/ 'the prayer performed at Isha time', /nifl/ 'voluntary prayer', fəjr, zuhər, əsr, məgrib, iʃa, are the names five of obligatory prayers, a Muslim has to perform a day, /rəkə(t)/ 'a set of actions performed during prayers- standing and facing the Kaba'a, bowing on the knees, two prostrations and sitting between these, etc., /sijdə/ 'prostration', /sijdəsəhu/ 'prostration due to forgetfulness', /səlam/ 'asking for Allah's blessings and peace', /dua/ 'supplication after a prayer'.

Words related to the Third Pillar of Islam, that is Fasting, are commonly used during the month of Ramadan. Fasting in Islam means complete abstention from food, drinks and any kind of physical contact with wives, etc., from dawn till the sun set. The commonly used words during this month are /səhər/ 'the meal taken before the time of Fajr Prayer', /iftar/ 'breaking the fast at a given point of time', /tilavət/ 'recitation of the Holy Qur'an'.

The Fourth Pillar of Islam is Zakaa(t). It means the obligatory alms or the poor dues; a Muslim should pay to the poor and the needy. The word /sədqə/ 'charity, charitable act is an integral part of the religious discourse'.

The Fifth Pillar of Islam happens to be Hajj. It means a pilgrimage to Makkah for those Muslims who could afford to perform it financially and physically. Hajj represents an international congregation of the Muslims at Makkah. Some of the commonly used words by the Muslims performing Hajj are: /mi:qat/ 'appointed places from where a Pilgrim has to put on Ehram', /ehram/ 'loin-cloth- an obligatory dress that a Pilgrim has to put on and abstain from the forbidden acts after reciting the words related to the intention of performing Hajj', /təvaf/ 'going around the Kaba'a (seven times anti-clockwise, starting from and ending at the place where 'Black Stone' is placed', /rəmi/ 'throwing seven pebbles at the pillars of Satan (Jamarat) at Mina, as one of the Hajj rituals'.

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6.2. Directionality, Culture Fusion, Acculturation, Culture Learning and Extent of Borrowing

Word-borrowing from Arabic into Urdu offers a unique example of linguistic necessity so as to fill in the lexical gap related to new concepts regarding the newly adopted religion - Islam. The main factor behind such a large scale of borrowing may be termed as ‘Culture acceptance’ consequent upon the spread of Islam. The factors, most often discussed behind the directionality are intimate cultural contact, economic, military, technological advancement and subsequent dominance of one culture over the other. As for the situation in the Indian sub-continent, the process was a case of culture-fusion or culture acceptance by those who adopted Islam and by those who came in close contact with the ruling power. It became rather obligatory on the part of the Urdu speakers to adopt directly or borrow words from Arabic related to Islamic theology so as to follow the teachings of Islam as originally intended for the followers of Islam. The extent of borrowing shows the intimacy of cultural relationship between the two cultures.

In terms of directionality, Urdu offers an extreme case of ‘asymmetry’, where Urdu borrows numerous words as listed above whereas words of Urdu origin have not been attested in Arabic with the exception of ‘Sambosa, a popular Indian snack and Hindi- an Indian national’. After accepting Islam as their new religion, the converts developed an awful reverence towards Arabic and accepted it as the source language of Islam. However, one is not sure about the correlation between the extent of borrowing and the amount of culture learning. Commenting upon this difficulty, Higa. M, (1973: 77-78) states the following:

“One which was mentioned earlier is that not all of what is learned by one culture from another is reflected in borrowed words. The other is that there is no methodology available for measuring the amount of learning by one culture form another.”

6. 3. The Extent of Borrowing and the Amount of Learning

As stated above, it is not possible to correlate word borrowing with culture learning. However, Urdu speakers present a unique case where the extent of culture learning seems to have exceeded much beyond the lexical borrowing from Arabic. Actually, it is not just a simple case of word borrowing resulting in acculturation and culture learning, rather it relates to their faith. For example, the word ‘zakaah’-the poor dues, is one of the pillars of Islam. As such, it is not only a borrowed word but an important religious concept and it is to be understood in its proper and appropriate context: why pay it, whom to pay it, and what is the percentage out of the total and annual income as well as the acquired wealth of an individual as specified in the religious texts. In case of such borrowed words the quantum of culture learning is bound to exceed the extent of

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lexical borrowing. It necessitated the lexical borrowing so as to perform acts and practices which are permissible (halaal) and abstain from acts and practices that are forbidden (haraam) as per the Islamic code of conduct. It is difficult, if not impossible, to infer the amount of culture learning from the extent of borrowing. It is true that culture learning is difficult to quantify and hence one has to refer to qualitative description of things and concepts that have been learnt (Higa: 1973).

6. 4. Qualitative Description of Items and Theological Concepts

Based on Higa’s above assumption, a comprehensive list has been presented where these loan-words of Arabic origin have been described whenever such a need was felt (please see 5.1. – 5.5). The listed words indicate a wide range of words ranging from religious terminology to words used in day-to-day conversation. According to an estimate, Urdu has approximately 75% of words from Indic sources. About 23% words have been borrowed from Persian, Arabic and Turkish. With the passage of time, Urdu has also borrowed from other modern languages including English. Whatever be the percentage of loan-words of Arabic origin in Urdu, the indexes of cultural influence, cultural growth and culture learning may be studied in relation to the continuous inflow of loan-words in the past few centuries as an outcome of the spread and practice of Islam in the Indian subcontinent.

While borrowing words from different languages for centuries together, Urdu has built up an unusual capacity for assimilating elements of other languages. The process of **assimilation and naturalization** offers an evidence of an intimate culture relationship and culture learning. In spite of grammatical constraints on word-borrowing, a certain number of loan-words have been naturalized. The process of naturalization takes place only when given cultures come in a sustained and intimate contact.

7. 0. Naturalization of Loan-words of Arabic Origin

Naturalization and hybrid formations are attested at the morphological level in the formation of plurals. In addition to the adoption of plural morphemes of Arabic origin, some of the loan-words have undergone the process that affects other words of Urdu, and these words cohere with the pronunciation and the grammatical rules of Urdu language. Some such words have been tabulated below:

Table 6: Naturalization of Plural Morpheme Exclusive to Urdu.

Word (Arabic Stem)	Grammatical Marker	Derived Form (Plural Form)	Gloss
kitab	e	kitab <u>e</u>	book+s=books

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məsjid	<u>e</u>	məsjid <u>e</u>	mosque+s=mosques
fayida	e	fayide	benefit+s=benefits
qəṭər(qatra in Urdu)	e	qətre	drop+s=drops
kursi	<u>a</u>	kusia <u>a</u>	chair+s=chairs
nadi	<u>a</u>	nadia <u>a</u>	valley+s=vallies

It is evident from the above table that the borrowing conforms to the lexical singular forms of words. For their inflectional and syntactic structuring, they are treated like other native words of Indic origin. The given examples indicate that such loan-words of Arabic origin were frequently used and in the process they were quickly assimilated to the extent of being naturalized.

7. 1. Hybrid Formations (Verbal Compounds)

Verbal compounds could be taken as another evidence of the immense impact of Arabic loanwords on Urdu. Verbal compounds are formed with Arabic stem + native verbal elements. Such verbal formations are quite common in Urdu and these verbal formations are the result of hybrid formation only.

Note : e and a = nasalized forms

Some of these verbal formations (verbal compounds) with different verbal elements are listed below:

Table 7: Verbal Formations (Verbal Compounds).

Word(Arabic stem)	Urdu (native) verbal element	Verbal Compound	Gloss
vudu	Kəna	vudu, a popular Indian snack kəna	ablution+to perform=to perform ablution
zəka(t)	Dena	zəka(t) dena	obligatory charity+to give =to give obligatory charity
i:d	Məna	i:dməna	eid+to celebrate=to celebrate Eid festival
qəmi:s	Pəhəna	qəmis pəhəna	shirt+to put on=to put on a shirt
kitab	xəri:dna	kitab xəri:dna	book+to purchase=to purchase a book

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The above examples of verbal compounds function as verbs only when the Arabic Stems are combined with native (Urdu verbal markers). It is interesting to observe that in the case of verbal formations, the loan stems always precede the verbal native elements. This process of verbal formation (hybrid formation) is productive not only in Urdu but also in other languages spoken by Muslims in the Indian sub-continent.

7. 2. Parallel Use of Arabic and Persian Loanwords in Urdu

How influential was Persian during the past few centuries can be visualized from the fact that some of the loanwords from Arabic and Persian are used in Urdu as parallel to each other. This is indicative of the fact that many a word of Arabic origin was routed through Persian into Urdu vocabulary. This bears evidence to the historical fact that the culture of the Indian sub-continent was influenced by the Islamic culture through Arabic and Persian simultaneously. Arabic loanwords entered Urdu vocabulary uninterruptedly during the Persian rule as they also accepted Arabic as a source language of Islam. The following table shows the parallel use of Arabic and Persian loanwords related to religious domain:

Table 8: Parallel Use of Arabic and Persian Loanwords

Arabic Loanwords	Persian Loanwords	Gloss	Frequency of Usage
səla(t)	nəmaz	Prayer	nəmaz is more frequent
siyam	roza	obligatory fasting	siyam is least frequent
əllah	xuda	Almighty-Allah	xuda is less frequent
rəsul	pəyyəmbər	Prophet	pəyyəmbər is more frequent
jəhənnəm	dozəx	Hell	jəhənnəm is more frequent
di:n	məzhəb	Religion	di:n referring to Islam is more frequent

8. 0. Toponyms: Place Names and Proper Nouns

There is an interesting dimension of the cultural influence of Arabic loanwords in the form of toponyms. The place names derived from Arabic are found in most of the places in India, except for those in the north-eastern region and in certain parts of the southern region which never came under the Muslim rule. Regions where place names are particularly common are north India, central India and in certain parts of south like Hyderabad and Mysore. Such place names are also

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common in other countries of the Indian sub-continent. It is to be observed that such place names do not exist in other Muslim countries including the Middle-east. It could be assumed that such place names were used in order to establish a distinct social and religious identity.

Table 9: Place names with Arabic Stems and Suffixes

Arabic stem	Suffix	Derived Forms (place names)
Əzi:m əmana xəyr muhəmməd əhəməd	+abad	Əzi:mabad əmanabad xəyrabad muhəmmədabad əhəmədabad
əli fəzəl	+gənj	əligənj fəzəlgənj
əli azəm	+gər	əligər azəmgər
islam šəms	+pur	islampur šəmspur

The suffix -abad, used quite frequently in India as well as in other countries of the Indian sub-continent, is of Persian origin meaning ‘inhabited place’. The suffixes gənj and gər are from Urdu meaning ‘a place of living’. Place names ending in -pur meaning ‘a small village or town’ are of Indic origin.

After the acceptance of Islam, most of the names of the people were taken either from Arabic or Persian. Most of the Muslims in the Indian sub-continent are named after Allah’s attributes: Karim, Rahman, Rahim, Bashir, Razzaque, Ghaffar, Sattar, Jalal, Jabbar, etc. A large number of Muslims are also named after the Prophet Muhammad(PBUH), his companions and the names of other prophets.

Conclusion

Word-borrowing is not merely a linguistic phenomenon but a cultural behavior which reflects socio-cultural, socio-religious and psychological aspects of the interacting cultures. There is enough research evidence to show that word borrowing is a consequence of cultural contact, resulting into cultural interaction/fusion, acculturation and culture learning. Sociolinguistic

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analysis of loanwords may serve as a useful tool in studying the very extent and the nature of word borrowing resulting into the process of culture learning.

As stated earlier, the vocabulary of a language is one of the most reliable sources, indicating the socio-cultural changes taking place during a specific period of time. By making an in-depth study of the kinds of loanwords of Arabic origin in Urdu and the point of time when these words entered the Urdu lexicon, we are able to identify the historical trends and changes taking place in social, political and cultural contexts.

Major Findings

1. As a language of the Holy Book Qur'an, Arabic enjoyed a special status and supplied the vocabulary of its theology to millions of people who embraced Islam in the Indian sub-continent as well as in other parts of the world. Historically, for theological concepts, Urdu depended upon Arabic as a source language as English remained dependent on Latin and Greek for Christian theology.

2. The exposure to Islamic culture had a major impact on the speakers of Urdu and their culture. A large number of Arabic loans found their way into Urdu lexicon through Persian speakers who inhabited north India during the 12th century AD. Urdu, at this point of time was passing through its formative stage. The socio-cultural contact between the speakers of Persian and Indian dialects and languages resulted not only in the borrowings from Persian but also from Arabic which was accepted as the language of their newly adopted religion - Islam.

3. During the past few centuries (between the 12th and the 18th centuries), the inflow of Arabic loanwords into the evolving Urdu language was accelerated through the translation of Arabic books on different aspects of Islam. Thousands of Arabic loanwords entered different languages of the Indian sub-continent, mainly Urdu, from these translations and formed the core of the new religious faith (Islam).

4. Urdu has borrowed and assimilated a large number of words which are thoroughly domesticated and naturalized. A large number of words belonging to different domains are frequently used, well established and integrated with the phonological, morphological and syntactic systems of the Urdu language. The process of assimilation and naturalization offers an evidence of close cultural contact between Arabic and Urdu leading to acculturation and culminating into culture learning.

5. Usually, the dominance of one culture on the other culture is the main factor behind word borrowing. But in case of Urdu it is primarily the theological acceptance as a driving force that was behind lexical borrowings at such a large scale. In doing so, the borrowing of words and

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concepts related to Islamic theology became an unavoidable lexical necessity. Urdu offers an extreme case of asymmetry where it borrows numerous loan words of Arabic origin whereas only a few words of Urdu origin are attested in Arabic.

6. There is no methodology which could help the researcher in ascertaining the correlation between the extent of borrowing and culture learning. A close study of loan words of Arabic origin in Urdu indicates that the culture learning associated with the adoption of Islam has exceeded the extent of lexical borrowing among the Urdu speakers. In other words, even though the percentage of borrowed words was low, these borrowed words have a higher frequency since these are connected to the day-to-day religious beliefs and practices of the Muslims. This is an interesting asynchronous relationship between borrowed words and culture learning from a purely linguistic point of view. The religious concepts convey not only the literal meaning but various sociocultural connotations they are associated with.

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