A Feature-based Analysis of Interlanguage Phonology of the Pakistani Learners of English

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The current study is based on substitution of phonemes of English with the corresponding L1 phonemes by adult Pakistani learners of English. The target population of this article is the beginners. So, the interlanguage phonology of Pakistani learners of English is studied in this paper with reference to feature geometry. For L2 Southern English was considered as standard. As there are many languages spoken in Pakistan, the substitution pattern of those learners of English is the focus of discussion who speak Saraiki as L1. However, most of the problems related to consonants are common among the speakers of most of the languages spoken in Pakistan. Thus the discussion in part 1 of the paper which is about the substitution of consonants of English is equally applicable to most of the Pakistani learners of English. However, the discussion about the substitution of vowels is mostly relevant to the Saraiki learners of English.

Introduction

Many researchers have already discussed the problems that the Pakistani learners of

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English face at early stage of learning English as a second or foreign language (see for example Rehman 1990, 1991; Mahboob & Ahmar 2004, Shamsuddin 1989 etc). However, neither of these has discussed and analyzed the interlanguage of Pakistani learners of English with reference to feature geometry of the L1 of the learners. The current study is an attempt to explain the difficulties that the adult Pakistani learners of English face at the early stages of learning. The strategies that the Pakistani learners use in solving their difficulties have been analyzed in terms of feature geometry.

Different models of feature geometry have been presented in phonology. As the current study is not an evaluation of models of feature geometry, we are not going to select (and justify our selection of) any specific model. The features used in the study are those which have been commonly used by most of the models of feature geometry. So, any of the models of feature geometry can fit in the analysis presented below.

The paper is divided into two main parts. First part is about the difficulties that the Pakistani learners of English face at initial stage of learning English as a second language. Although the study is focused on those learners who speak Saraiki (a language spoken in central Pakistan) but the findings are equally applicable for speakers of other languages of Pakistan like Balochi, Pashto, Sindhi, Punjabi and Urdu. However, part two which is about the difficulties that the L2 learners face in acquisition of English vowels is specifically focused on the difficulties that the Saraiki learners of English face in L2 learning.

1. Consonants

In this part, the difficulties which the Pakistani learners of English face in the acquisition of consonant of English at early stage of learning are discussed. The possible strategies that the Pakistani learners of English adopt in the acquisition of consonants of English are analyzed using feature geometry model.

1.1. Affricates
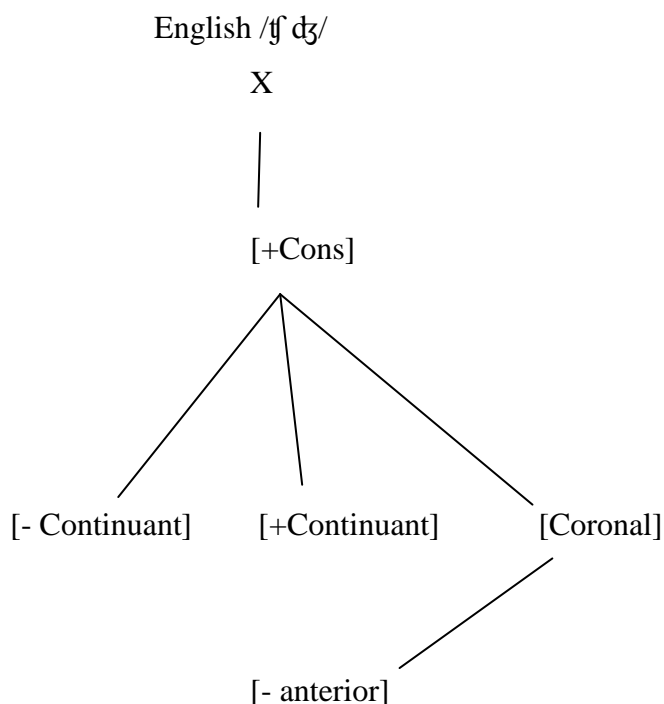
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In Saraiki we have sound /c/ and /ɟ/ quite similar in place of articulation to English /ʧ/ and /ʤ/. The only difference is that the former do not have +continuant feature (e.g. they are only stop (Shackle 1976, Varma 1936)). So, English /ʧ/ and /ʤ/ are also uttered as stop by Saraiki speakers of English though these (English /ʧ/ and /ʤ/) are [+continuant] with delayed release features (Roca & Johnson 2005 p. 206). The L1 of the learners has both fricatives and stops in its phonemic inventory but English affricates have two different features mixed in one phoneme. It is something new for the learners. So what they utter is simply stops on account of the negative transfer from their L1. In terms of feature geometry, English affricates lose [+continuant] feature in the production of Pakistani learners as reflected in (1) and (2).

(1) English affricates in the interlanguage phonology of the Pakistani learners

English /ʧ ʤ/

X

[+Cons]

[- Continuant]   [+Continuant]   [Coronal]

[- anterior]

(Roca & Johnson 2005 p. 227)

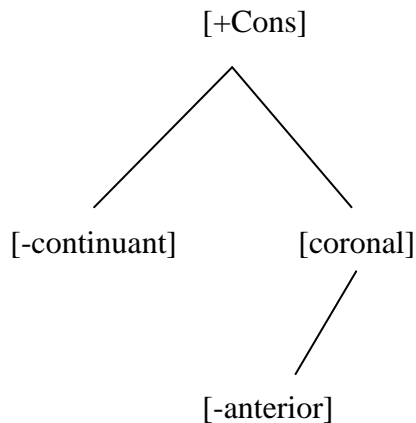(2) Substitution in the L2 acquisition by adult Pakistani L2 learners

/c ɟ/

X

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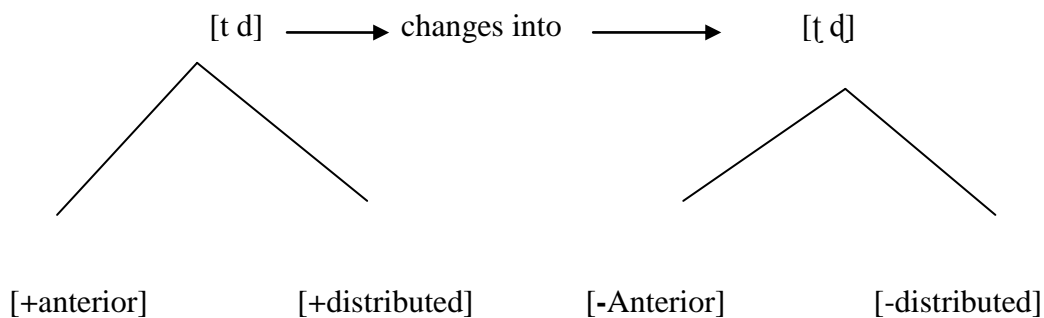Syed, Nasir A. R., M.A. (UK), M. Phil. (Pakistan)
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[+Cons]

[-continuant]　　　[coronal]

[-anterior]

1.2.　Alveolar stops

The sounds [t d] are somewhat similar in the L1 and L2 of the Pakistani learners. The only difference is that the former are retroflex (Shamsuddin 1989:5-6). So, in terms of feature geometry the L1 sounds of the learners corresponding to the English /t d/ consonants are [-anterior -distributed] while the English ones are alveolar which are [+anterior +distributed]. The Pakistani learners of English substitute the features of these English sound segments with the corresponding L1 sounds as the figure (3) shows;

(3) English /t d/ in the interlanguage phonology of the Pakistani learners

[t d]　───▶ changes into ───▶　[t d]

[+anterior]　　[+distributed]　　[-Anterior]　　[-distributed]

(Irrelevant features and nodes have been deleted)

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1.3. Liquids

There is no distinction of dark and clear [l] in most of the Pakistani languages. So, the Pakistani learners of English cannot differentiate between dark and clear /l/ in English. The dark /l/ in English has a slight dorsal gesture before the coronal (Wyn Johnson personal communication), but in the L1 of the learners, the slight dorsal gesture changes order and occurs at the end of the utterance. According to Clements (1995 p.218) the clear [l] has [+anterior -high -back] feature while the dark one has [+anterior +high +back]. Another liquid /ɹ/ in English has different realization from that of the L1 of the learners on account of its distribution in English. In the beginning of words of English it is a consonant and at the end it is pronounced as a vowel. But in Pakistani languages, /r/ is pronounced similarly in word-initial and final positions. So, the Pakistani learners of English utter /r/ as a trill at the end of English words. In terms of feature geometry, English /r/ loses its [-consonant] feature in the speech of the Pakistani learners as figure (4) below shows;

(4) Substitution of English approximant /ɹ/ with the L1 /r/ by Pakistani learners

/ɹ/ ⟶ /r/

[- consonant]   [+consonant]
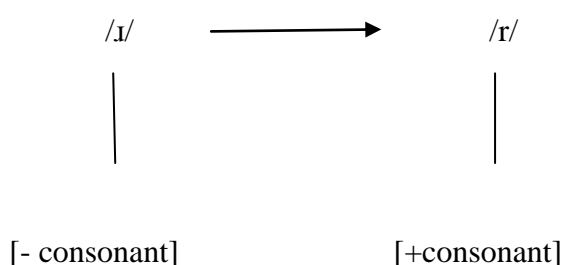
1.4. Glides

English approximant /j/ exists in Pakistani languages but palato-alveolar fricative /ʒ/ does not exist in many Pakistani languages. As a result, the Pakistani learners of English cannot differentiate between English /j/ and /ʒ/. The first consonants of the English word 'yes' and the second last consonant of the English word 'vision' by a Pakistani learner are normally produced as same. So, [-sonorant] feature of /ʒ/ is substituted with the [+sonorant] in L2 phonology of the Pakistani learners of English

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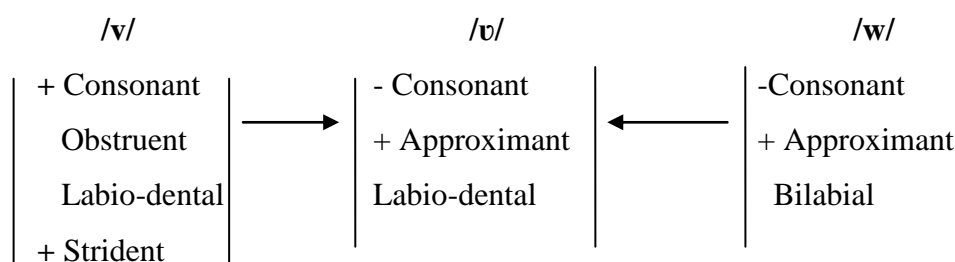
in production of the English alveo-palatal fricatives. Besides, [+strident] feature of /ʒ/ is also lost as reflected in the figure (5) below;

(5) Substitution of an obstruent with a sonorant by the Pakistani learners

/ʒ/ ⟶ /j/

[+strident] [-sonorant]   [+sonorant]
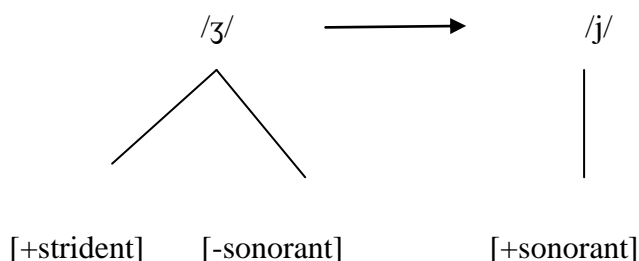
English phonemes /v/ and /w/ also do not exist in many Pakistani languages including Saraiki as two separate consonants. In Pakistani languages, one phoneme exists which is approximant like /ʋ/. So, the Pakistani learners of English cannot differentiate between the English /v/ and /w/ and they use a single phonetic representation for the first phonemes occurring in the beginning of the English words 'very well.' The Pakistani learners change the features of both English sounds /v/ and /w/ which is reflected below. As two consonants are involved in this case, so for formatting constraints the rules-based representation (instead of feature geometry tree diagram) is given for these substitutions in the figure below. The

(6) Substitution of English /v w/ with the single L1 phoneme

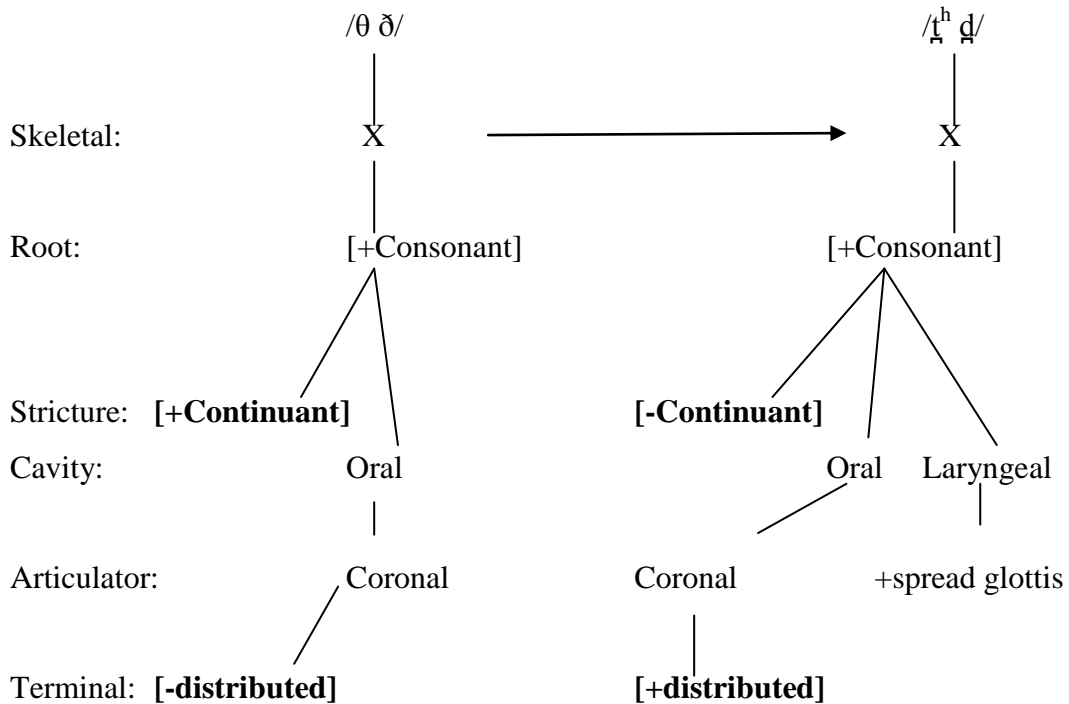| **/v/**	**/ʋ/**	**/w/**
+ Consonant	- Consonant	-Consonant
Obstruent	+ Approximant	+ Approximant
Labio-dental	Labio-dental	Bilabial
+ Strident		

1.5.   Fricatives

English fricatives /f s z ʃ/ exist in Pakistani languages. So the adult L2 Pakistani learners of English can utter these sounds properly. However, /θ/ and /ð/ sounds of English do not exist in most of the Pakistani languages. So, the English words like 'thank' or 'that' may not be produced by the adult L2 Pakistani learners of English

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quite accurately and they replace these English sounds with the nearest L1 sounds which are /t̪ʰ d̪/. As a result of this substitution the [+continuant –distributed] features of the English dental fricatives change into [-continuant +distributed] respectively as shown in (7) below;

(7) Substitution of dental fricatives with the L1 dental stops by the Pakistani learners

                    /θ ð/   /t̪ʰ d̪/

Skeletal: X   →   X

Root: [+Consonant]   [+Consonant]

Stricture: **[+Continuant]**   **[-Continuant]**

Cavity: Oral   Oral   Laryngeal

Articulator: Coronal   Coronal   +spread glottis

Terminal: **[-distributed]**   **[+distributed]**

(Adopted and modified from Kenstowicz 1994)

1.7. Aspiration contrast

In English, aspiration is allophonic but in several Pakistani languages it is phonemic. In some of the languages spoken in Pakistan like Balochi or Pashto there is no aspiration contrast. Aspiration in voiceless stops in English is a non-contrastive phenomenon as aspirated stops are at complementary distribution with unaspirated stops in English. While in those Pakistani languages which have aspiration at phonemic level, aspirated and unaspirated stops are two different phonemes. When Pakistani learners first time come across the English stops /p t k/ they equate these sounds with unaspirated /p t k/ sounds of their L1. Mostly, the Pakistani learners of

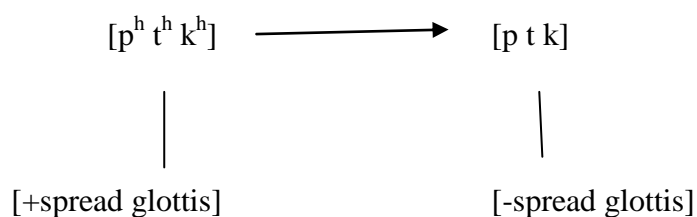Language in India www.languageinindia.com
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English after having become familiar with the allophonic variance of aspiration in English, utter unaspirated stops in the environment where they should utter the aspirated ones in their fluent or unconscious speech. Thus in the pronunciation of Pakistani learners of English, the aspirated stops of English are unaspirated which means the English stops which are [+spread glottis] in English are produced as [-spread glottis] by adult Pakistani learners of English as reflected below;

(8) Aspiration contrast in the L1 and L2 of the Pakistani learners of English

$$[p^h \ t^h \ k^h] \longrightarrow [p \ t \ k]$$

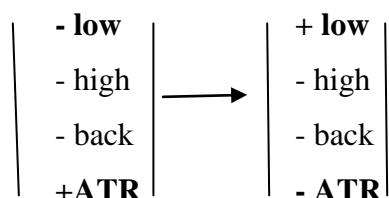[+spread glottis]　　　　　　[-spread glottis]

2. Vowels

In this part, the difficulties that the Saraiki learners of English face in acquisition of English are discussed and analyzed.

Saraiki does not have English /e/ used in words like 'ten' or 'hen'. So the Saraiki learners of English substitute it with the vowels /æ/. So, the high mid feature of English /e/ is substituted with [+low] and [+ATR] with [-ATR] by Saraiki learners of English in the initial stage of learning as (10) shows;

(9) Substitution of /e/ to /æ/

$$
\begin{bmatrix}
\textbf{- low} \\
\text{- high} \\
\text{- back} \\
\textbf{+ATR}
\end{bmatrix}
\longrightarrow
\begin{bmatrix}
\textbf{+ low} \\
\text{- high} \\
\text{- back} \\
\textbf{- ATR}
\end{bmatrix}
$$

(Features adopted from Kenstowicz 1994 p. 20)

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English /ei/ as in 'day' does not exist in Saraiki. So Saraiki Learners of English substitute it with Saraiki */e/* and pronounce the syllables like 'day' 'say' etc. as /d*e*/, /s*e*/ instead of /dei/ and /sei/. The dipthong /ei/ is lowered by Saraiki learners and changed into monophthong. The English /ei/ starts with a tense vowel and ends at the lax vowel. But Saraiki */e/* is a lax vowel. It is a loss of radical feature [+ATR] in the beginning of the English /ei/ as a result of substitution which is reflected below;
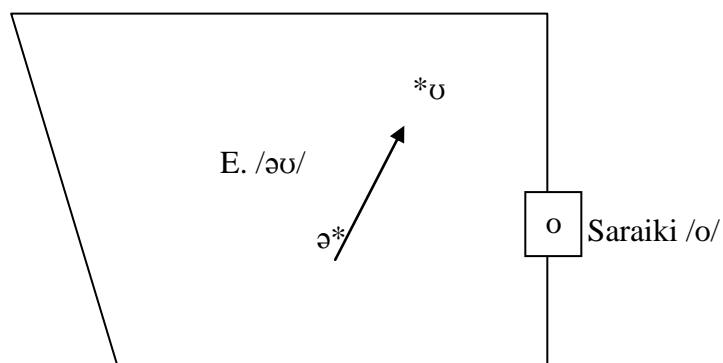
(10)   Substitution of /ei/ to /e/
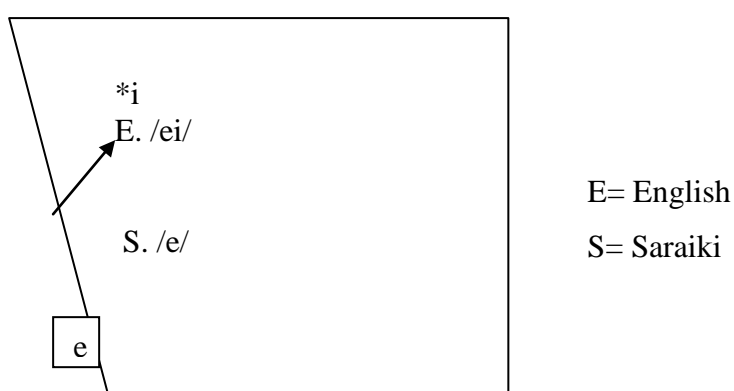
E= English

S= Saraiki

The English /əʊ/ in RP as in the word 'no' does not exist in Saraiki. So it is replaced with Saraiki */o/*. English words like 'so' /səʊ/ and 'no' /nəʊ/ etc. are pronounced like /s*o*/ and /n*o*/ by Saraiki learners of English. What happens as result of this substitution is;

        a. change of diphthong into monophthong

        b. the final element of the English diphthong is a bit lowered

        c. the [-back] feature of the final part of the diphthong is also changed into absolute backness as is apprent from the following figure;

(11)   Substitution of /əʊ/ to /o/

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Sometimes English /əʊ/ is substituted with Saraiki long /u:/ when it occurs in CVC syllable. For example the English word 'phone' is uttered by Saraiki speakers as /f*u*:n/.

Saraiki has got a trend to shorten the vowels as well as diphthongs. For example, Saraiki long /*a*/ is not as longer as English /ɑ:/ in the word 'father.' English /ɑ:/ is more open and hence relatively lower. So, the Pakistani learners who speak Saraiki shorten the English long /ɑ:/. They do not differentiate between the vowel in the word 'saw' and that in the first syllable of word 'father.' In other words English /ɑ:/ has two slots on timing tiers, but in the speech of Pakistani learners it loses one of the slots as reflected below;
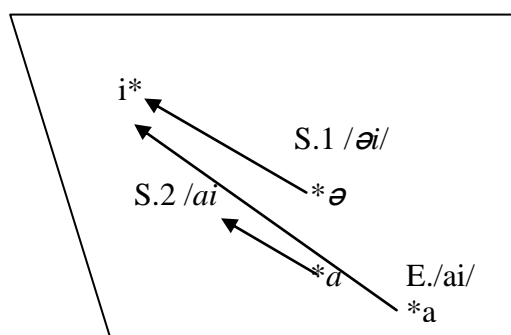
(12)   Shortening of English /a/

(Partially adopted and modified from Rocca & Johnson (2005:208))

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Saraiki does not have vowel equivalent to English /ɒ/ in words like 'pot'. So the Saraiki learners of English either substitute it with /a/ or with /o/. Consequently, they produce the word 'college' either like /kalɪʝ/ or /kolɪʝ/. A Saraiki learner of English replaces the English vowels /a:/ , / ɒ/ and / ɔ:/ with one Saraiki vowel /a/ which is not so long as English /a:/. In other words a Saraiki learner, unless otherwise trained, pronounces the words 'Polish' /pɒliʃ/, 'Pauline' /pa:li:n/ and 'saw' /sɔ:/ with the same vowel that is closer to English/ɔ:/. In terms of FG, English /ɒ/ either loses its roundedness and high mid position or becomes more rounded and higher in the interlanguage of the Saraiki speakers under the influence of L1. Using the terms of Pulleyblank (1995), it either 'advances' or 'retracts'. (p.18). However, /ɔ:/ is substituted with /a/ and is uttered a bit further front than its real position which may be called partial loss of backness.
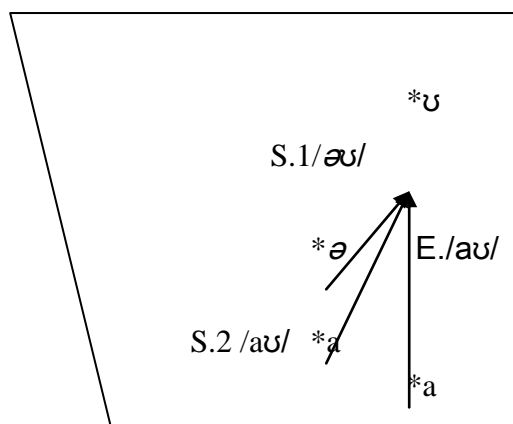
In the initial stage of learning, the Saraiki learners who speak Southern Saraiki pronounce /ai/ and /au/ as /əi/ and /əʊ/ as the former do not exist in Southern Saraiki. So, words like 'my' and 'now' are pronounced as /məi/ and /nəʊ/. After training even, what they mostly utter is /*ai*/ and /*aʊ*/ (remember Saraiki /a/ is not as open and long as English /a:/ as in the word 'father'.) This is reflected in the following diagrams;

(13)   Substitution of English /ai/ to the L1 /*ai*/

English /ai/ ⟶ Saraiki /əi/ ⟶ /*ai*/

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(14)   Substitution of English /au/ to the L1 /au/

*ʊ

S.1/əʊ/

*ə   E./aʊ/

S.2 /aʊ/   *ɑ

*a

S.1: Saraiki learner at stage1   S.2: Saraiki leaner stage 2

English /ɔi/ is most difficult of the diphthongs to produce for the Saraiki speakers and in a variety of ways the Saraiki learners produce it. English /ɔi/ changes into /əi/, /ʊəi/, or /oi/ in the interlanguage phonology of Saraiki learners of English. But it is important to note that when the Saraiki learners of English change the English words like /kɔin/ into /kʊəin/ or even /koin/ they mostly resyllabify it as /kʊə.in/ or /ko.in/.

(15)   English /ɔi/ in the interlanguage of the Pakistani learners
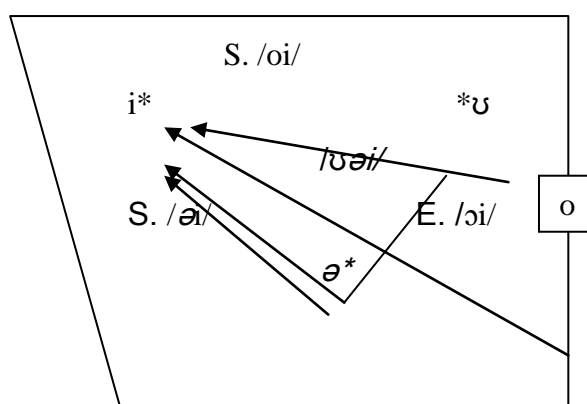
S. /oi/

i*   *ʊ

/ʊəi/

S. /əi/   E. /ɔi/   o

ə*

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3. Discussion

As pointed out by Kirchner (2001), our phonological systems are binary based and hence don't account for many gradient phonetic realities. For example, reproducing the example given by Kirchner (2001), we have nasal or non-nasal phonemes. It means we do not have any stages between these two phonological realities. While phonetically, there may be minor nasalization, partial nasalization, strong nasalization etc. Same may be observed in case of VOT in the utterance of plosives which is different in English, and the L1 of the Pakistani learners. But it is neither noted nor corrected most of the times.

Learning involves two things; acoustic perceptibility and motor ability. Our perceptibility to see minor differences is minimized with perfection of L1 and ability to produce new sounds decreases with age. So our already existing sound patterns adjust the input in such a way that we cannot see the differences; a mechanism called 'equivalence classification.' (Flege 1987:14)

Orthography triggers a lot of substitution. For example, the substitution of English /θ/ into stops is because stop is less marked compared to fricatives. But in this case orthography also triggers the substitution as English does not have separate letters for this segment on the one hand. On the other, the letters representing aspirated stops in most of the Pakistani languages are 'th'. And English /θ/ is mostly represented by 'th'. Consequently, combination of 't' and 'h' triggers the substitution of /θ/ into an aspirated stop in the speech of the Pakistani learners. It is also significant to point out here that in this context development is the basic motivation as substitution of fricative with stop is considered a developmental error compared to its substitution with fricative (/θ/ into /s/) which is considered transfer error (Hetch &Mulford 1987 p. 222). We can note from our discussion of aspiration in the L2 phonemic inventory of the Pakistani learners of English discussed above, that the Pakistani learners only acquire the phonological features which have semantic representation, but they do not acquire (using the terminology of James 1987) the rhythmic and prosodic features

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associated with the phonemes of English.

Another important observation is in accordance with findings of Brown (1998). The features which are already active in the geometry of the L1 are easier to learn for L2 learners as compared to those which do not have contrastive segments in the L1. Taking the example of aspiration contrast from the above discussion, the learners have both aspirated and non-aspirated phonemes in the L1. So, it is easier for them to acquire English this contrast than /v w/ or /ʒ/. Psychological factors are also involved in substitution. Sometimes, the L2 learners use the segments of English language in L1 manner to avoid looking 'too snobbish and affected' (Major 2008:68).

We observe that as per prediction of Contrastive Analysis Hypothesis (Eckman 1987, Archibald 1998) the difficulties for the learners are due to the differences between native language (NL) and the target language (TL) and the substitutions are in accordance with the nature of differences between the two. Another important thing which we observed is in accordance with the findings of Eckman et al (2003), is that similarity causes the substitution in the L2 phonology of the L2 learners. L1 feature geometry not only substitutes features of L2 with those of L1 but it also blocks the intake of those L2 features which are nonexistent in L1. As Saraiki has got only nine vowels (Shackle 1976: 12) and English has more, the Saraiki learners try to adjust all English vowels in the existing frame work of Saraiki vowels which causes deviations from standard pronunciation of English.

4. Summary of Findings

In this study we came across various types of differences between L1 (Saraiki) and L2 (English) which cause difficulty for learners. Various types of differences that we studied have been summarized in (21) below:

(16)   Summary of the substitutions

Situation	English	Saraiki
Two sounds are allophones of a phoneme in TL while those	/p t k/	/p ṭ k/

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sounds are different phonemes in NL		/pʰ t̪ʰ kʰ/
Two different phonemes in TL but one in NL	/j/, / ʒ/	/j/
Two sounds in TL substituted by a single sound of NL	/w/, /v/	/ʋ/
Two sounds of TL assimilated to a pair in the NL	/ ð/,/θ/	/ d̪/ , /t̪ʰ/

Orthography, L1 interference and developmental process are main reasons of the substitution in the L2 phonemic inventory of the Pakistani learners of English. However, neither of these factors alone can account for the substitutions discussed above. Rather these factors jointly contribute to the substitution of English sounds with the corresponding sounds of the L1 of the learners.

Appendix: Phonemic inventory of Saraiki

	V	Asp	Labial	Dental	Alveolar	Retroflex	Palatal	Velar	Glottal
Plosive	-	-	p	t̪		ʈ	c	K	
	-	+	pʰ	t̪ʰ		ʈʰ	cʰ	kʰ	
	+	-	b	d̪		ɖ	ɟ	g	
	+	+	bʰ	d̪ʰ		ɖʰ	ɟʰ	gʰ	
Implosive			ɓ		ɗ		ʄ	ɠ	
Fricative	-		f		s		ʃ	X	
	+				z			ɣ	h
Nasal	+	-	m		n	ɳ	ɲ	ŋ	
	+	+	mʰ		nʰ	ɳʰ	ɲʰ		
Flaps					r	ɽ			

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					r^h	$\underset{\cdot}{r}^h$			
Lateral					l l^h				
Semi-Vowel		ʋ ʋ^h					j		

===

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