

## Morphological Processes in Indo-Aryan Languages: A Case of Magahi

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### Abstract

The morphology of the Bihari languages is highly complex and rich. One of the most complex paradigms in Indo-Aryan languages, verb agreement paradigms co-refer to a large number of participants. The verb agreement enables the simultaneous encoding of numerous referents in various case relations (Bickel et al., 1999; Kashyap, 2012). There are only a few affixes for number and gender in Magahi morphology. This paper attempts to study the morphological processes found in Magahi, an Indo-Aryan language spoken in the Indian states of Bihar, Northern Jharkhand, some pockets of West Bengal, as well as in certain parts of Nepal. The data have been obtained from recorded speech samples from twenty native speakers of the language, both - males and females. Findings suggest that affixation, mainly suffixation and prefixation, plays an essential role in the morphological processes in Magahi.

**Keywords:** Indo-Aryan language, Magahi, morphological processes, word formation

### 1. Introduction

The morphological process is the process that occurs to change the meaning and/or part of speech (derivational), while others reveal grammatical relations between words. It serves many functions. One morpheme attaches to another in order to form a word and thus functions as the smallest element in the structure of the word. Due to the morphological process, two morphemes combine into a new morpheme or, in some cases, a word. There are many different processes, although not all of them are prevalent in each and every language. Some of these are non-

concatenative, involving the alternation of internal morpheme features, while others are concatenative, involving the linear combination of morphemes (affixation, for instance). Some of the morphological processes are affixation, concatenation, reduplication, and suppletion. This study, however, only focuses on the morphological processes of Magahi.

Magahi, one of the Bihari languages, is also often referred to as Magadhi. Since Magahi is intimately related to the name Magadhi Prakrit, educated Magahi speakers often prefer to use the term Magadhi instead of Magahi when referring to their language. Grierson (1903) classified Magahi into Indo-Aryan languages. It is spoken in the Indian states of Bihar, Northern Jharkhand, and certain pockets of West Bengal, as well as the Southern Nepal that shares its border with Northern Bihar. Magahi descended from Prakrit, and it is believed to be the court language of the ancient Kingdom of Magadha. The preachings of Budha and the edicts of Ashoka, King of the Mauryan Empire, were inscribed in Magahi and served as the official language of the Mauryan court (Prasad & Mukherjee, 2020). Prominent three of the Bihari languages, Magahi, Bhojpuri, and Maithili, are closely related (Comrie, 2001). There are around 18 million native speakers of the Magahi language. Kaithi and Devanagari are two of its most widely used scripts (Verma, 2007). According to Chatterji (1926), Magahi is a descendant of the Magadhan language along with Bengali, Assamese, and Oriya and is very close to Eastern Indo-Aryan languages. However, the Indian government has not yet acknowledged it as a distinct language. The language has a vast and rich history of folk songs and narratives, despite having little to no historical records.

### **1.1. Literature Review**

The morphological aspects of the language have been noted in some earlier Magahi literature. Verma (2007) focused on the gender, quantity of nouns, and agreement with verbs when studying the noun and verb morphology of the Magahi language. Sinha (1966) has discussed the morphology and phonology of Magahi. Atreya and Sinha (2020) have recently studied the functions of the diminutive markers in Magahi.

## **2. Method**

The data for this study has been gathered through interview methods from the native Magahi speakers who reside in the villages in the Aurangabad district of Bihar. Leipzig Glossing Rules have been employed to show the morpheme-by-morpheme analysis of the collected data. The data have been transcribed and annotated using the International Phonetic Alphabets. This study follows the Item and Process (IP) model (Hockett, 1954) as it fits best with the morphology of Magahi. This study is based on the Basic Linguistic Theory (Dixon, 2010), and the rules were developed using the data that was gathered. The research findings about the morphological processes seen in Magahi are discussed in the following section.

### 3. Result and Discussion

The major morphological processes that have been observed in Magahi, including inflection, derivation, compounding, and reduplication, are presented and discussed in this section. Typological classifications of languages around the world include synthetic, agglutinating, isolating, and fusional. Different grammatical structures of indigenous languages have been highlighted by Abiog & David (2020). Like the majority of other Indo-Aryan languages, Magahi belongs to the group of synthetic languages and is morphologically fusional. The morpheme boundaries of Magahi words are usually ambiguous, and words typically consist of many morphemes. Affixes are usually added to the roots or words in Magahi to create new terms. Below is a discussion of the various morphological processes in Magahi.

#### 3.1. Inflectional Processes in Magahi

There are inflections for various grammatical categories in Magahi. Some include tense, aspect, mood, degree, quantity, classifier, and case. The discussion of various inflection processes is provided below.

##### 3.1.1. Number Inflections

There are two grammatical numbers for nominal constructions in Magahi - singular and plural. While plural noun formulations require plural morphemes, singular nouns are uninflected for numbers. In the Magahi language, the plural morphemes are /-ən/, /səb/, and /log/.

	Noun	Suffix	Pl. Noun	Gloss
(1a)	ləika	-ən	ləik-ən	‘children’
	ləika	-ən səb	ləik-ən səb	‘children’
	ləika	-ən log	ləik-ən log	‘children’
(1b)	kutt̪a:	-ən	kutt̪-ən	‘dogs’
	kutt̪a:	-səb	kutt̪a: səb	‘dogs’

As it is illustrated in (1a), *ləika* takes all three allomorphs of plural markers, whereas *kutt̪a:* in (1b) takes only two allomorphs of the plural marker. The allomorph /-log/ is applied to only human nouns, whereas /-ən/ and /səb/ can be attached to countable nouns to express their plural number. It must be noted here that the plural allomorphs are phonologically realised depending on the ending of the base noun in this context, causing morphophonemic alternations. This study, however, does not address the same issue.

When definite article or familiarity inflections are applied to plural nouns, the definitive article marker /wa:/ or its allomorph comes before the number marker morphemes or allomorphs.

	Noun	Suffix	Pl. Noun	Gloss
(2a)	ləika	wa:+-ən	ləik-w-ən	‘the children’
	ləika	wa:+-ən səb	ləik-w-ən səb	‘the children’
	ləika	wa:+-ən log	ləik-w-ən log	‘the children’
(2b)	kutt̪a:	wa:+-ən	kuṭ-w-ən	‘dogs’
	kutt̪a:	wa:+ -səb	kuṭ-w-ən səb	‘dogs’

### 3.1.2. Classifiers

Magahi numerals can be inflected for classifiers. In Magahi, classifiers follow the numerals. For instance:

Classifiers	Noun	Examples	Gloss
go	ṭ̪in kələm	ṭ̪in go kələm	‘three pens’
ṭ̪ <sup>h</sup> o	ca:r bilai	ca:r ṭ̪ <sup>h</sup> o bilai	‘four cats’

### 3.1.3. Case Inflections

Nouns in Magahi are additionally inflected for case indicators. A noun and verb phrase are connected syntactically and semantically by a grammatical category known as the case. In Magahi, there are ten cases. The examples below illustrate the case inflections.

Case	Markers	Example	Gloss
Subjective	-Ø	kuṭ-wa: bəiṭ <sup>h</sup> əl həi	‘The dog is sitting.’
Executor	-ke	həm ba:bu ke ʒəgəliəi	‘I woke the kid up.’
Unmarked objective	-Ø/ke	bauʒi səbbe ke dā:ṭ̪ləṭ̪ <sup>h</sup> in	‘Father scolded everyone.’
Locative	-me/pər	həm isku:l mē hiəi	‘I am at school.’
Ablative	-se	həm c <sup>h</sup> əṭ-wa: per se gir geliəi	‘I fell off from the roof.’
Direction	kihā:/ḍəne	ṭ̪u Beni kihā: jaiṭ hə	‘Are you going to Beni’s?’
Benefactive	-ke	u: əppən ija:r ke kita:b ḍeləi	‘He gave his friend a book.’
Instrumental	-se	u: cəmməc se k <sup>h</sup> aiṭ həi	‘He is eating with a spoon.’
Sociative	-(ke) saṭ <sup>h</sup> e	ḍiḍi ṭ̪ora: sa:ṭ <sup>h</sup> e ʒəṭ <sup>h</sup> un	‘Didi will go with you.’
Genitive	-ke	mohiṭ ke ija:r	‘Mohit’s friend’

### 3.1.4. Tense Inflections

Magahi has two major tenses - future and non-future tenses. The non-future can also be divided into the simple present and past tense. The past tense verb form in Magahi is marked. The simple present tense is not marked, unlike the past tense, with the exception of stative verb forms.

(3a)	verb	past form	gloss
	pi	pi-ləi	‘drank’

(3b)	suṭ	suṭ-ləi	‘slept’
	verb	future form	gloss
	pi	pi-tṭəi	‘will drink’
	suṭ	suṭ-tṭəi	‘will sleep’

In the illustration above, (3a) represents the past form of the verb, which takes the -əl/-el form, whereas (3b) takes -əṭ as a simple present marker. However, depending on the person's noun and relationship to the speaker, the surface representations of these two tense markers vary.

### 3.1.5. Aspect Inflections

The aspect of a sentence deals with the internal constituency of actions, events, states, processes, or situations. It may indicate that an action is completed or still ongoing. Four different aspects have been observed in Magahi. These are illustrated below with examples.

Aspect	Markers	Examples	Gloss
Habitual aspect	-ə	ləika: k <sup>h</sup> el-ə həi	‘Kids play.’
Immediate aspect	-ṭe	ləika: k <sup>h</sup> el-ṭe həi	‘The kid is still playing.’
Progressive aspect	-iṭ	ləika: k <sup>h</sup> el-iṭhəi	‘The kid is playing.’
Perfective aspect	-lele	həm k <sup>h</sup> el-lele hī	‘I have finished playing.’

All these tense aspects are realised along with other morphemes representing the tense of the nouns' action, number, and honorifics.

### 3.1.6. Mood

Mood conveys varying degrees of the reality or desirability of an event or activity. The action of a verb, when combined with the modal markers, expresses the attitudes of speakers toward the subject in terms of obligation, necessity, contingency, and desire. Magahi has a host of many moods. Below are instances, along with a discussion of these.

Mood	Markers and usages	Examples	Gloss
Obligation	-ke ca:hi	həmni ke pəṭ <sup>h</sup> e ke ca:hi	‘We should study.’
Probability	-səkə	ṭu ja: səkə hə	‘You can go.’
Intentive	-əl ca:hə	həm suṭəl ca:hə hī	‘I want to sleep.’
Imperative	-ə/ə/o	suṭə/neho	‘Sleep/take a shower.’
Precative	-ṭəi/iḥə/bəhū	pəṭ <sup>h</sup> -ṭəi/iḥə/bəhū	‘You will study.’
Optative	ja:e/ja:i	ṭor nəokri ho ja:e/ja:i	‘May you get a job.’
Permissive	-e ḍə/ḍəhū	həmra suṭe -e ḍə	‘Let me sleep.’
Capability	səkə/pa:wə	həm ḍəuṭ səkə/pa:wə hī	‘I am able to run.’

### 3.1.7. Degree Inflections

When any attribute of a noun is compared to that of another noun, the comparison particle /-se/ is attached to the noun.

Degree	Markers	Example	Gloss
Positive	Ø	nimən	‘good’
Comparative	-se	həm ʈora se bəʈ hɪ	‘I am older than you.’
Superlative	səb se	həm səb se bəʈ hɪ	‘I am the oldest.’

### 3.2. Derivational Processes

Through the process of derivation, a word is derived from another word or additional parts. Magahi makes use of various procedures to form new words. Below is an explanation of the processes.

#### 3.2.1. Derived Nouns

In order to form new nouns in Magahi, certain nominalizing affixes are attached to a variety of grammatical categories, including nouns, verbs, and adjectives.

Noun	Gloss	Suffix	Derived nouns	Gloss
buʈ <sup>h</sup> a:	old man	-ri	buʈ <sup>h</sup> a:-ri	‘old age’
mitt <sup>h</sup> a:	jaggery	-i	mitt <sup>h</sup> aɪ	‘sweets’
Verb	Gloss	Suffix	Derived nouns	Gloss
piʈ	‘to beat’	-aɪ	piʈ-aɪ	‘beating’
ləʈ	‘to fight’	-aɪ	ləʈaɪ	‘fight’
Adjective	Gloss	Suffix	Derived nouns	Gloss
gol	‘round’	aɪ	golaɪ	‘roundness’
ləmba:	‘tall’	aɪ	ləmbaɪ	‘height’

#### 3.2.2. Derived Verbs

Verbs can also be derived from other form classes by adding suffixes. To form derived verbs in Magahi, the causation process and the addition of two or more verb roots or particles can be used. Even though derived verbs have multiple morphemes, they only have one structural element or stem. The following examples illustrate the many types of verbs found in Magahi as well as newly derived verbs.

Verb	Gloss	Derived verb	Gloss
k <sup>h</sup> a:	‘eat’	k <sup>h</sup> ia:	‘feed’
suʈ	‘sleep’	suʈa:	‘make sb sleep’

Nouns	Gloss	Derived verb	Gloss
<i>la:t̪</i>	‘foot’	<i>la:t̪-i-ja:</i>	‘to hit with foot’
<i>soʈa:</i>	‘stick’	<i>soʈia:</i>	‘to hit with stick’
Adjective	Gloss	Derived verb	Gloss
<i>sa:tʰ</i>	‘sixty’	<i>sa:tʰ-ija:</i>	‘to get old’
<i>həriər</i>	‘green’	<i>həriana</i>	‘to become green’

### 3.2.3. Derived Adjective

Prefixation and suffixation are two ways to derive adjectives. Below are some illustrations of how adjectives are formed through derivation.

Adjective	Gloss	Derived adjective	Gloss
<i>a:ge</i>	‘front’	<i>əgla:</i>	‘front one’
<i>pi:cʰe</i>	‘behind’	<i>picʰ-la:</i>	‘the back one’
Nouns	Gloss	Derived adjective	Gloss
<i>ḍuḍʰ</i>	‘milk’	<i>ḍuḍʰa:ru</i>	‘milk producing cow’
<i>maug</i>	‘woman’	<i>məuga:</i>	‘woman-like’
<i>nin</i>	‘sleep’	<i>ninua:l</i>	‘sleepy’

### 3.2.4. Derived Adverbs

In addition to base adverbs, other grammatical categories can also be used to form adverbs in Magahi. Below are some examples of the derived forms of adverbs.

Noun	Gloss	Derived adverb	Gloss
<i>sa:l</i>	‘year’	<i>səla:na:</i>	‘yearly’
Adjective	Gloss	Derived adverb	Gloss
<i>sus̪t̪</i>	‘lazy’	<i>sus̪t̪ se</i>	‘lazily’

## 3.3. Compounding in Magahi

In order to form new words through the morphological process of compounding, two free morphemes are often concatenated (Abbi, 2001). Two immediate elements combined to make a sequence. Semantically, endocentric, exocentric, copulative, and appositional compounding is of the four types, according to Brahma (2013a). In terms of structure, compounds can be divided into a number of categories, including Noun-Noun, Noun-Verb, Noun-Adjective, and Verb-Verb. Below is a description of the compounding that has been seen in Magahi.

### 3.3.1. Endocentric Compound

In an endocentric compound, one of the words becomes the head of the compound. For example:

<i>ḍu</i>	‘two’	<i>cəkka:</i>	‘wheel’	=	<i>ḍu cəkwa:</i>	‘two wheeler’
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### 3.3.2. Exocentric Compound

In an exocentric compound, none of the constituents acts as ahead. For example:

ca:r ‘four’ + ã:k<sup>h</sup> ‘eye’ = cər ãk<sup>h</sup>a: ‘person who wears glasses’  
ga:j ‘cow’ + b<sup>h</sup>əĩs ‘buffalo’ = ga:j-b<sup>h</sup>əĩs ‘cattle’

### 3.3.3. Copulative Compound

In a copulative compound, two or more semantic heads are joined. For example:

b<sup>h</sup>a:r ‘brother’ + bəhən ‘sister’ = b<sup>h</sup>a:r-bəhən ‘siblings’  
gung ‘speechless’ + bəhir ‘deaf’ = gung bəhir ‘deaf and dumb’

### 3.3.4. Appositional Compound

In an appositional compound, the components provide different descriptions of a single referent. For example:

mūh ‘mouth’ + cor ‘thief’ = mūhcor ‘who doesn’t stand up’

### 3.3.5. Structurally Classified Compounds

There are several possible structurally classified compounds observed in Magahi. These are shown below.

Noun-Noun

ka:m ‘work’ + cor ‘thief’ = kəmcor ‘lazy’

Noun-Verb

k<sup>h</sup>el ‘sport’ + kəriṭ ‘doing’ = k<sup>h</sup>el kəriṭ ‘having fun’

Verb-Verb

kəha: ‘tell’ + suni ‘hear’ = kəha:-suni ‘conflict’

## 3.4. Reduplications in Magahi

Reduplication is a morphological process in which all or a part of a form is repeated. Reduplication in Magahi is used to form collective nouns and adverbs, intensifying the action of the verb, among others. In Magahi, reduplications usually appear to the right of the roots or stems. The following types of reduplication have been observed in Magahi based on the data.

### 3.4.1. Full Reduplication

Full reduplication is a process where the entire word is reduplicated. For example:

*ḍin-ḍin*                      *b<sup>h</sup>ər*                      *suṭəl*                      *rəhə*                      *həi*  
day-RED                      CLF                      sleep.PST                      ASP                      be  
‘He/she sleeps all day.’

### 3.4.2. Partial Eeduplication

In partial reduplication, only a part of the reduplicated root or stem is reduplicated. For example:

Word	gloss	semantic
ca:j-wa:j	tea-RED	'tea and snacks'
k <sup>h</sup> a:na-una:	food-RED	'food and all'

### 3.4.3. Expressives (Morphological Reduplication)

In expressive reduplication (Abbi, 1992), no part of the reduplicated word exists as a word until they are reduplicated. It is only after reduplication that it becomes a word. For example:

kəreɟ-wa:	ɖ <sup>h</sup> ək-ɖ <sup>h</sup> ək	kəriɟ	həi
heart	sound of pulse-RED	do.ASP	be

'The heart is beating so fast.'

### 3.4.4. Rhyming Reduplication

In rhyming reduplication, a rhyme ending is added with the root/stem, which often forms a collective meaning. For example:

ç <sup>h</sup> ət-wa:	pər	ba:nər-unər	rəhə	həi
the roof	at	monkey-RED	live	be

'There live monkeys and other animals on the roof.'

### 3.4.5. Exact Reduplication

In exact reduplication, the word is reduplicated without any alteration. For example:

həm	k <sup>h</sup> eɟe-k <sup>h</sup> eɟe	əili
I	field-RED	come.PST

'I came running through the field.'

## 4. Conclusion

Morphological processes observed in Magahi were discussed in the previous sections. Inflection, derivation, compounding, and reduplication were important morphological processes, as was already mentioned. Inflected for number, classifier, case, tense, aspect, mood, and degree are the grammatical categories in Magahi. The process of affixation that is more prevalent in Magahi is suffixation. In Magahi, the numerals come before the classifiers that modify them. In the Magahi language, new nouns, verbs, adjectives, and adverbs are formed through the derivation process by adding affixes to the various roots/words. The causative prefix may also be added to some verbs to derive a new verb. In Magahi, compounding also contributes to the formation of new words. Multiple compounding processes, such as Noun-Noun, Noun-Verb, Noun-Adjective, Pronoun-Noun, Verb-Verb, and Verb-Adjective, have been observed. In the Magahi language, reduplication is another process of word formation. The various varieties of reduplication seen in

Magahi include full, partial, expressive, rhyming, and exact. In addition to producing new words, reduplication occasionally makes the impact of the adjectives and verbs more intense. This study aims to demonstrate the various morphological processes found in Magahi. As this study was based on limited data, more comprehensive data might reveal some other morphological processes in Magahi.

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