

Level Ordered Morphology and Phonology in Manipuri

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1. Introduction

A number of phonological rules in the Tibeto-Burman language Manipuri¹ cannot be characterized without making reference to word formation processes in the language. In this paper, I give a description of such phonological rules and show that the interaction between morphology and phonology in Manipuri can be represented by postulating that the lexicon of language is level ordered (Kiparsky, 1982; Mohanan, 1986). As the linguistic literature available on the phonology and morphology of Manipuri is limited², I will first present a description of the phonemic contrasts and a sketch of the word formation processes available in the language. This will be followed by a list of the relevant phonological rules and with an explanation of how these interact with word formation processes. This list will be used to illustrate the existence of level-ordering in the lexical phonology and morphology of Manipuri.

¹ Manipuri, also known as Meithei or Meithlei, is a Tibeto-Burman language of the Kuki-Chin Group. The dominant Manipuri speaking population of about a million speakers is concentrated in the central valley of Manipur state which is located in Northeastern India. Small pockets of speakers are present in Assam, Bangladesh and Burma.

² The grammars on Manipuri by Primrose (1887) and Pettigrew (1912) provide short sketches of the morphological and syntactic structures in the language. However, neither grammar makes more than a few impressionistic statements about phonological processes in the language. Devi (1979) and Bhat and Ningomba (1986) provide more exhaustive descriptions of the noun and verb morphology in Manipuri. Although both of these works recognize that some morphemes have allophonic variants, neither provides formal statements about the phonological processes in the language. The most detailed description of the sound system of Manipuri available is Singh (1975). As discussed in Chelliah (1986), Singh does provide an accurate description of the phonemic system but does not make reliable statements about or give an exhaustive description of the phonological processes in the language. Finally, in no previous descriptions of Manipuri has a connection been drawn between phonological and morphological processes in the language. Thus the formulation of the phonological rules and the level ordered analysis of their application presented in this paper is original. The analysis is based on data from the works by Primrose, Pettigrew, Devi, and Bhat and Ningomba cited above as well as my own notes and tapes gathered during fieldwork carried out in Delhi in 1984, Manipur State and New Delhi in 1986 and 1987.

2. Consonant and vowel phonemes of Manipuri

An inventory of the consonant phonemes in Manipuri is given in Figure 1.

Figure 1. Chart of consonant phonemes

	Labial	Alveolar	Palatal	Velar	Laryngeal
Stops	p p ^h	t t ^h	c c ^h	k k ^h	
Fricatives					h
Nasals	m	n		ŋ	
Lateral		l			
Semivowels	w		y		

Borrowed words exhibit the voiced unaspirated series /b, d, j, g/ and the voiced aspirated series /b^h, d^h, j^h, g^h/. The voiced aspirated stops occur in borrowed words only. The lateral /l/ varies freely with /n/ word finally; intervocally, /l/ is realized as [r]. The aspirated palatal stop /c^h/ is phonetically realized as [s] or [s^h].³ The phonemic status of the

³ The phonemic inventory of Manipuri given here differs from the one traditionally described for the language. For example, I have indicated that voiced stops are not part of the phonemic inventory of Manipuri: opposed to this is the phonemic inventory provided in Thoudam (1989) where /b, d, g, j/ are said to be phonemic in the language. The following minimal pairs are given as support:

- | | | | |
|------|-----|----------|-----------------------------|
| i. | p/b | ipok | 'my white hair' |
| | | ibok | 'my grandmother' |
| ii. | t/d | ləytəne | 'not living there' |
| | | ləydəne | 'only the flowers' |
| iii. | k/g | ləykən | 'hard surface' |
| | | ləygənbe | 'one who buys all the time' |

As shown in (i) underived voiced stops can be found; however, they are attested only in a small number of kinship terms such as in (iv). The forms are taken from Nameirakpam (1989).

- | | | | | | | |
|-----|----|-----------|------------------|----|----------------|-----------------|
| iv. | a. | ipibok | 'grandfather' | f. | ibay | 'elder brother' |
| | b. | ibok | 'my grandmother' | g. | dəda (təda) | 'elder brother' |
| | c. | əbok iben | 'grandmother' | h. | pəbuŋ | 'father' |
| | d. | iben bok | 'grandmother' | i. | bəbə (or pəbə) | 'father' |
| | e. | ibuŋ | 'elder brother' | | | |

Example (ii) which purports to provide a contrast between /t/ and /d/ is suspect since the marker -də which signifies 'only, exactly' has a variant -tə as in mədutəne 'only by that' (example from Chelliah, field notes). Similarly, the example given to show a contrast between /k/ and /g/ is questionable since the marker -gən 'to V habitually' has a variant -kən as in cətəkəlli 'usually go' (example from Bhat and Ningomba 1986: 4.15). There is no apparent reason why the voiced stop should be considered the underlying one. I propose that the variant with the voiceless stop is the underlying one and that the voiced stops are derived by the application of a single voice assimilation rule (see section 4.1.1). The (non) application of this

consonants is established through the minimal or near-minimal pairs given in the Appendix.

An inventory of the vowel phonemes in Manipuri is given in Figure 2.

Figure 2. Chart of vowel phonemes

	front	central	back
high	i		u
mid	e	ə	o
low		a	

The phonemic status of these vowels is established through the minimal or near-minimal pairs given in the Appendix.

A feature specification of the consonant phonemes is given in Figure 3 and a feature specification of the vowel phonemes is given in Figure 4.

Figure 3. Feature specification of the consonant phonemes

	p	ph	t	t ^h	c	ch	k	k ^h	m	n	ŋ	l	w	y	h
syllabic	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
sonorant	-	-	-	-	-	-	-	-	+	+	+	+	+	+	-
consonantal	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-
anterior	+	+	+	+	-	-	-	-	+	+	-	+	+	-	-
coronal	-	-	+	+	+	+	-	-	-	+	-	+	-	-	-
lateral	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
nasal	-	-	-	-	-	-	-	-	+	+	+	-	-	-	-
voice	-	-	-	-	-	-	-	-	+	+	+	+	+	+	-
strident	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-
spread glottis	-	+	-	+	-	+	-	+	-	-	-	-	-	-	+
continuant	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+

rule is either lexically determined (see section 4.2.2) or governed by the tone of the stem (see Chelliah, *in press*).

Finally, there is good support for the view that [ʃ] and [ʃh] are allophones of /ch/. First, the absence of /ch/ would constitute a noticeable gap in the symmetry of the phonemic system. Second, [ʃ] and [ʃh] trigger rules such as DASP (see section 4.1.2), just like the other phonemes in the aspirated series, e.g. *ʃen* 'money'; *kʰaw* 'bag'; *ʃengaw* 'purse'. As it is precisely the presence of aspiration that triggers the application of the rule, it is reasonable to assume that in these environments [ʃ] and [ʃh] are underlyingly /ch/.

Figure 4. Feature specification of the vowel phonemes.

	i	e	ə	a	u	o
syllabic	+	+	+	+	+	+
sonorant	+	+	+	+	+	+
consonantal	-	-	-	-	-	-
high	+	-	-	-	+	-
low	-	-	-	+	-	-
back	-	-	-	-	+	+
round	-	-	-	-	+	+
tense	+	+	-	+	+	+

3. Morphological sketch of Manipuri.

Words in Manipuri can be derived by means of the phrase structure rules given in 1(a-f). 'W' stands for Word and 'enc' stands for enclitic. INFL refers to a single inflectional suffix (infl) or a sequence of inflectional suffixes. 'Suffix' stands for derivational suffix. ROOT signifies the word minus all formatives. As stated by the rewrite rule 1e, ROOT may be a single root (root) or a sequence of roots. Rule 1d captures the fact that in Manipuri words may have at most one prefix. Parentheses indicate optionality. Instantiations of the rules given in 1(a-f) are given in App. 1.

1. a. $W \longrightarrow W \text{ enc}$
- b. $W \longrightarrow \text{STEM (INFL)}$
- c. $\text{STEM} \longrightarrow \text{STEM (suffix)}$
- d. $\text{STEM} \longrightarrow (\text{prefix}) \text{ ROOT}$
- e. $\text{ROOT} \longrightarrow \left\{ \begin{array}{c} \text{ROOT} \\ \text{root} \end{array} \right\} (\text{root})$
- f. $\text{INFL} \longrightarrow \text{infl}_1, \text{infl}_2, \dots, \text{infl}_n$

Roots in Manipuri are nouns and verbs. Noun inflection is for gender (this is a recent introduction into the lexicon and is restricted to nouns which refer to occupation) and case (agentive, accusative, dative, locative, ablative, genitive, associative). Verb inflection is for tense (present, future), aspect (imperfect, perfect, progressive) and mood (interrogative, imperative, infinitive, indicative, irrealis, factive). A sequence of morphemes may indicate a single category: for example, yes-no questions are signaled through the suffixation of the interrogative suffix plus the suffix