

Pretty Derivational Morphemes All in a Row

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Pretty Derivational Morphemes All in a Row

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1. Introduction. In this paper I will describe the verb morphology of the Tibeto-Burman language Manipuri (M), which is an agglutinative language spoken in Northeast India in the state of Manipur. In particular I will show how the linear ordering of the sixteen derivational verb morphemes in M is governed by a different ordering principle than that of the inflectional morphemes. I will also provide examples from Cuzco Quechua and Saint Lawrence Island Eskimo to show that such mixed systems of morphological organization can be found in these languages as well.

2. Inflectional categories. In (1) a schematic representation of the M verb is given. Note that the categories of DM and IM are not obligatory in the M verb (there is no number-person-gender agreement between the verb and its arguments). What is minimally needed for a M verb to be an acceptable form is the verb ROOT and an enclitic.

(1) Schematic representation of the M verb:

ROOT-derivational morphology (DM)-inflectional morphology (IM)-enclitics

If DM and IM are both optional categories and if IM is not relevant to the syntax, then why and how can a distinction be drawn between IM and DM? The initial answer to this is given in (2), which is the list of the rules needed to generate words in M.

- (2)
- | | | | |
|----|------|-----|--|
| a. | W | --- | W enc |
| b. | W | --- | STEM (IM) |
| c. | STEM | --- | STEM (suffix) |
| d. | STEM | --- | (prefix) ROOT |
| e. | ROOT | --- | ROOT (root) |
| f. | IM | --- | (infl ₁) (infl ₂) (infl ₃) |

As shown in (2f) the category of IM can consist of a series of three inflectional categories where im_1 , im_2 and im_3 represent respectively, the inflectional categories 1, 2 and 3 given in (3).

(3) List of inflectional categories in the Manipuri verb

Cat 1	Mood 1:	-kə	'potential'
		-loy	'nonpotential'
Cat 2	Mood 2:	-tə	'necessity'
		-təw	'obligation, probability'
		-toy	'intention'
Cat 3	Aspect:	-li	'progressive'
		-lə	'perfect'

There can be one and only one instantiation of each category in a given verb and each instantiation must occur in the order specified (i.e. category 1 before category 2 and 2 before 3). This can be opposed to the type of rule needed to derive the linear ordering of the DM morphemes. The exact formulation of this rule is addressed in section 3.

3. Derivational categories. In this section I will identify and describe the meanings of the sixteen DM morphemes which belong to one of ten semantically defined categories. This semantic categorization predicts co-occurrence restrictions between members of the same category, since morphemes which signal analogous meanings never co-occur. For example, a verb will never be suffixed by two markers from the "direction" category (category H): if a verb is marked by -lə 'proximal' (which indicates that the action took place near the speaker) it would be semantically anomalous for that same verb to be marked by the distal marker -lək (which indicates that the action was performed at a distance from the speaker). Thus the semantic categorization of the markers in this section encodes the (1) semantic similarity and (2) the co-occurrence restrictions of the morphemes that are members of the same category.

Category A consists of 2 markers: -nə 'reciprocal' which is used to indicate that two or more people are doing some action in conjunction with each other or that one person is joining in to perform an action with another and -min 'comitative' which indicates that the actors perform the same action at the same time in a group.

Category A: Reciprocal and comitative

(a) -nə 'reciprocal'

khəŋnəy

khəŋ -nə -i

know -recip-NHYP

'know each other'

(b) -min 'comitative'

tumminŋəyde

tum -min -ŋəy -tə

sleep-together-during-dat

'when sleeping together'

Category B consists of 2 markers which indicate to or for whom the action described in the verb is carried out: -pi indicates that the action is performed for someone other than self and -cə indicates that the action is performed for the sake of the performer.

Category B: V to or for sake of other or self

- | | |
|---|-------------------------------------|
| (a) <u>-pi</u> 'V to someone other than self' | (b) <u>-cə</u> 'V for sake of self' |
| yéŋsinbirəbədi | tumjərunu |
| yéŋ-sin- pi -lə -pə -ti | tum čə -lu -nu |
| see -in -rec-pro-inf-DLMT | sleep-self-pro-probh |
| 'If the (parents) look into these things | '(For your own sake) don't |
| (for the children's sake).' | go to sleep while on duty.' |

Categories C and D consist of the causative marker -hən and the desiderative marker -niŋ respectively.

- | | |
|-----------------------------|------------------------------|
| (c) Category C: Causative | (d) Category D: Desiderative |
| təwhənbəni | lónniŋŋi |
| təw- hən -pə -ni | lón- niŋ -i |
| do -caus -inf -COP | lock-wish-NHYP |
| 'cause the work to be done' | 'to wish to lock' |

Categories E, F and G encode the speakers's opinion towards the action described in the verb. **Category E** consists of two suffixes which indicate the extent to which or the number of times that an action is performed: -mən indicates that an action is performed in excess and -kən 'V repeatedly, habitually'.

Category E: V how much / how many times

- | | |
|---------------------------------|--|
| (a) <u>-mən</u> 'V in excess' | (b) <u>-kən</u> 'V repeatedly, habitually' |
| čáməlle | nokkənbə |
| čá- məl -lə -e | nok- kən -pə |
| eat-excess-perf-ASRT | laugh-repeat-inf |
| '(I've) eaten too much (rice).' | 'someone who laughs all the time' |

Category F consists of two suffixes which indicate whether an action is carried out at an appropriate or inappropriate time: the inceptive suffix -həw indicates that

an action has been initiated in the nick of time or that a limited window of opportunity is available for such initiation. Thus in (a), the speaker is unable to begin eating at the required time. The marker -khi indicates the speaker's attitude or expectation about the time frame within which an action is performed or a state is attained. Thus in (b) the speaker indicates that an action is completed before the expected state.

Category F: V at an appropriate or inappropriate time

- | | | | |
|-----|--|-----|--|
| (a) | čáhəwðere
čá- həw -tə -lə -e
eat-still -neg-perf-ASRT
'(I) didn't get to eat.' | (b) | pakhirəmmi
pa - khi -ləm-i
read-still-evd -NHYP
'had already read' |
|-----|--|-----|--|

Category G consists of -ləm, the indirect evidence marker which indicates that the speaker has evidence to support the truth of a proposition.

Category G: Indirect evidence

- | | |
|-----|---|
| (a) | čárəmmi
čá- ləm -li
eat -evd -prog
'(When I got there he) had been eating.' |
|-----|---|

Category H consists of three markers which indicate the position of the subject with regards to the position of the speaker. These are the proximal marker -lə, which indicates that the subject performs an the action at the place of the speech act (a); the distal marker -lək which indicates that an action takes place or is initiated at some location other than where the speech act occurs (b); and -lu, which indicates that an action takes place somewhere away from or moving away from the location of the speaker (c).

Category H: Direction

- | | |
|-----|----------------------------------|
| (a) | <u>-lə</u> 'proximal' |
| (b) | <u>-lək</u> 'distal' |
| (c) | <u>-lu</u> 'V away from speaker' |

- | | | | | | |
|-----|--|-----|--|-----|--|
| (a) | čárəri
čá - lə -li -i
eat-prox-prog-NHYP
'comes here and eats' | (b) | čárəʔi
čá - lək -i
eat-dist -NHYP
'ate over there' | (c) | čətlure
čət- lu -lə -e
go -adir-perf -ASRT
'went (and returned)' |
|-----|--|-----|--|-----|--|

Category I consists of the negative marker -tə which is used to describe an action or state that was not or has not up to the time of speech been performed or realized.

Category J consists of the prospective marker -lə which indicates that an action is viewed from the point of its initiation.

Category I: Negative

-tə 'negative'

təwde

təw-tə -e

do -neg-ASRT

'do not do'

Category J: Aspect

-lə 'prospective aspect'

ləyrəmməgəni

ləy-ləm-lə -kə -ni

be -evd-pro-pot-COP

'probably is waiting'

One striking characteristic of the morphemes discussed in categories A-J is that it is possible to point to related productive stems in M from which these suffixes must have been derived. In the process of lexicalization from stem to suffix, the stems have lost their stem tone, the original meaning of the stems is obscured and following a common lexicalization pattern in M, the vowels of the stems appear as ə in the lexicalized suffix. A list of the suffixes and related stems is given in (4).

(4) List of derivational suffixes and related stems

<u>Suffix</u>		<u>Related Stem</u>	
-min	'comitative'	min	'be together'.
-pi	'V to or for someone other than self'	pi	'give'
-cə	'V for sake of self'	ca	'body'
-hən	causative	han	'advance/push ahead'
-niŋ	'desire to V'	niŋ	'dream, wish'
-mən	'V in excess'	man	'greedy'
-kən	'V repeatedly, habitually'	kən	'save'
-həw	'inceptive'	haw	'begin, grow'
-ləm	'indirect evidence'	lom	'approximate'
-lək	'distal'	lak	'come'

4. Variable orders of derivational morphemes. Recall that IM categories (which were numbered 1, 2, 3) occur in a fixed order. On the other hand, DM categories are not fixed in order: for this reason the DM categories are not numbered but indexed with a letter of the alphabet. The order reflected by the capital letters encodes the most commonly occurring orders: thus A usually occurs before B, B usually occurs before C, and so on. This does not reflect structural

information about DM. Instead, it is more the case that there are some meanings that are more commonly used than others and so some sequences are more common than others.

As reflected by the data in (5) the order Category A before B before C is certainly not the only order in which the DMs can occur. Consider, for example, the interaction of the marker -khi 'still' with the evidential marker -ləm in (5a) and (5b). In (5a) the sequence -khirəm has the meaning 'probably still V' whereas in (5b) the sequence -rəmkhi has the meaning 'still seems V'. Thus, the order of -khi and -ləm is not fixed and the order of the suffixes changes the meaning, showing that these markers have scopal properties.

- | | | | |
|------|--|------|--|
| (5a) | čákhirəmmoy
čá- khi-ləm -loy
eat-still-evd -nprot
'probably still did not eat' | (5b) | čətləmkhiroy
čət- ləm-khi -loy
go -evd -still-nprot
'still seems (that he) has not left' |
|------|--|------|--|

These two points about the DM are further exemplified by (5c) and (5d), and (5e) and (5f). In (5c) the sequence -niŋhəl has the meaning 'cause to wish' and in (5d) the sequence -hənniŋ has the meaning 'wish to cause'. Similarly, in (5e) the sequence -həllək has the meaning 'caused to V when there' whereas the sequence -ləkhən in (5f) has the meaning 'cause to V here (towards this direction)'.

- | | | | |
|------|---|------|---|
| (5c) | čániŋhəlli
čá- niŋ-həl -i
eat-wish-caus-NHYP
'made me feel like eating' | (5d) | pahənniŋgi
pa- hən-niŋ -i
read-caus-wish-NHYP
'wished to cause him to read' |
| (5e) | čáhəllə?e
čá- həl-lək -e
eat-caus-dist -ASRT
'I was made to eat
when I was there.' | (5f) | purəkhənkhre
pu- lək-hən-khi-lə -e
carry-dist-caus -still-perf-ASRT
'(Tomba) caused him (when
over there) to bring the letter
here (at an earlier time).' |

5. Doubling of derivational morphemes. There is one additional characteristic of DM which opposes it with IM. As shown in (6a) and (6b), morphemes in DM that signify a quantifiable meaning can be doubled in order to intensify the meaning of the marker. For example, in (6a) the prospective marker which, when used in an undoubled form implies that the speaker is certain that action described in the verb is to take place, in a doubled form indicates that the

speaker is absolutely sure that the action in question is to take place. A similar fact is seen in (6b) with -khi 'still' where the duration of time is emphasized with the doubling of the marker.

(6a)	sawɾəɾəɾəni saw -lə -lə -lə -ni angry-prox-pro-pro-COP 'is certainly going to be angry'	(6b)	čákhikhinu čá-khi-khi-nu eat-still -still -probh '(under any conditions) don't eat yet'
------	--	------	--

The possibility for doubling is not present with IM morphemes even though most of these morphemes do signal quantifiable meanings (that is, one could for example, imagine the duplication of one of the mood 2 markers where such duplication would indicate a strong necessity instead of a mild one). The lack of this possibility in the IM can be attributed to difference in the organization of IM as opposed to DM. The fixed order of morphemes in IM indicates that linear ordering is controlled by linear precedence rules such as a templatic formula or position class system. In this case, one would not expect doubling since in such systems no position is filled more than once.

6. Summary. Example (7) gives a summary of the facts described so far for DM and IM. Since there is no evidence to show that the morphemes of IM have scopal properties, I assume that IM has a flat structure that contributes a composite inflectional meaning which has scope over the whole verb.

(7) Differences between DM and IM

	<u>DM</u>	<u>IM</u>
Order of morphemes	variable	fixed
Morphemes exhibit scopal properties	yes	no evidence
Doubling	yes	no
Lexicalized equivalents of stems	yes	no

Note that IM cannot be differentiated from DM on the basis that IM is carried out in the syntax and DM in the Lexicon; since there are no agreement features encoded by IM, there is nothing about IM, as opposed to DM, which makes it relevant to the syntax. There is no reason to assume then, that the morphemes IM are not concatenated to the verb in the same place as the concatenation of DM. If this is true, then what M exhibits is a morphological system which employs two different linear ordering principles.

The DM is governed by semantic co-occurrence restrictions and some sort of categorially-based syntax of the morphemes such as the rule in (8), where parentheses stand for optionality of occurrence, subscripts stand for the semantic category and commas indicate that constituents are unordered.

(8) ((DM) ---> (dm_a), (dm_b), (dm_c)...),

The rule for DM will overgenerate: there will be some sequences generated that are ruled out because they are semantically awkward even though they might be understandable. The variable ordering of DM morphemes must be a productive characteristic of DM since consultants rarely rule out an order completely. Most often judgments about unusual orders are that these orders are understandable, but that they sound more like the product of a nonnative than of a native speaker of M.

7. Structure imposed on words by phonology. We might want to consider if there is some other way to predict the ordering of morphemes, besides the use of syntactic rules. For instance, does the phonology interact with the morphology in a level ordered fashion along the lines of Lexical Morphology and Phonology (Kiparsky 1982, Mohanan 1986). In fact, there are a number of lexical phonological rules in M. However, as will be seen below, the phonology imposes a different structure on words than the morphology does (in terms of the distinction between DM and IM established above).

The phonological rule of Lateral Deletion applies to delete l in an kl sequence as illustrated in (9). Lateral Deletion applies with the suffixation of the perfect marker -lə, the progressive marker -li and the evidential marker -ləm (in these cases, k becomes glottal stop by a post-lexical rule).

- | | | | | | |
|------|--------------------|------|------------------------|------|---------------------|
| (9a) | yóʔəbə | (9b) | purəʔibə | (9c) | laʔəmmi |
| | yók -lə -pə | | pu -lək -li -pə | | lak -ləm -li |
| | rear-perf-inf | | carry-distal-prog-inf | | come-evd -prog |
| | 'rear up' | | 'coming' | | 'carried here' |

As seen in (9d), Lateral Deletion fails to apply with the suffixation of the distal marker -lək. Instead a rule of Velar Deletion applies to delete k (of -thok) in the kl sequence. Here, the l of -lək becomes ɾ by a post-lexical rule.

- (9d) čŋthorəʔəgə
 čŋ -thok-**lək** -ləgə
 jump-out -distal-after
 'having jumped out'

It is fairly obvious that the rule of Lateral Deletion and Velar Deletion are in a bleeding relationship with each other. That is, if Lateral Deletion applies first, the environment for Velar Deletion will no longer be available and if Velar Deletion applies the environment for Lateral Deletion will no longer be available. A level ordering of these rules will help solve the problem, as seen in (9e).

(9e) Level ordering of rules of Velar deletion and Lateral deletion

- | | | |
|----|------------------|--|
| L1 | Velar deletion | <u>-lək</u> |
| L2 | Lateral deletion | <u>-ləm</u> , <u>-lə</u> (perfect), <u>-li</u> |

The application of the Velar Deletion rule is paired with the suffixation of -lək and turned off with the suffixation of the markers listed at Level 2. This prevents the misapplication of the Velar Deletion rule with the markers -ləm, -lə and -lə and correctly pairs its application with the marker -lək. The application of the Lateral Deletion rule is paired with the suffixation of the markers at L2 thus correctly characterizing the application of the rule on these markers. See Chelliah (1990) for further discussion of level ordered phonological rules in M.

The structure imposed on words by this level ordering, while correctly characterizing the interaction of phonology and morphology, is at odds with the structure imposed by linear ordering principles in the morphology proper. That is, the LPM places the DM morpheme -lək in a different level of word structure from another DM morpheme -ləm and this separation is not enforced by the morphology. Furthermore, the LPM analysis places the DM morpheme -ləm along with the IM morphemes -lə and -li. Thus one phonologically determined level straddles two morphological levels.

This mismatch between morphological and morphophonological structure about M support arguments put forward by Sproat (1988), that morphophonology and morphology are distinct components and that word structure should be viewed as being determined through representations in (at least) these two components. Further support for such a view comes from the fact that there exist mixed morphological systems, such as the one described for M. One can conclude from this that linear ordering in morphology is not exclusively determined according to phonological criteria, compositionality, or position classes, but through some combination of these linear ordering principles.

8. Other mixed morphological systems. Of course, M is not special in exhibiting such a mixed system. For example, the morphological systems of Cuzco Quechua and Saint Lawrence Island Yupik Eskimo exhibit similar facts. Muysken (1988:260) lists twenty-two derivational verbal markers for Cuzco Quechua, and shows that, although there are semantic restrictions on the combinatory possibilities of these markers, there are, "for every verb stem... many thousands, if not an infinite number... of fully suffixed verb stems." He notes that variable orders are possible for these markers. The examples in (10a) and (10b) illustrate this second point.

- | | |
|--|--|
| (10a) mikhu- naya-chi -wa-n
eat -DESI-CAU-lob-3
'It causes me to feel like eating.' | (10b) mikhu- chi - naya -wa-n
eat -CAU-DESI -lob-3
'I feel like making someone eat.'
(examples from Muysken (1988:278)) |
|--|--|

However, the morphemes of the inflectional morphology occur in a fixed order.

The facts in Saint Lawrence Island Yupik Eskimo are somewhat more complicated. Here, a base can be followed by derivational morphology which is fixed in order. This can be followed by an internal syntax component in which morphemes combine freely (restricted only by semantic considerations). For further explanation of the differences between derivational morphology, internal syntax, and inflectional morphology in Eskimo, see de Reuse (1992). It appears that the markers of internal syntax exhibit the same possibility for variable orders (see (11a) and (11b)) and doubling (see (12a) and (12b)), as seen for DM in M.

- (11a) qaviisqesaghtughaa
 qavagh-**sqe** -**yaghtugh**-aa
 sleep -ask.to.V-go.V -IND(3s-3s)
 's/he went to ask him/her to sleep'
- (11b) qavaghyaghtuissqaa
 qavagh-**yaghtugh**-**sqe** -aa
 sleep -go.V -ask.to.V-IND(3s-3s)
 's/he asked him/her to go sleep' (examples from de Reuse (p. c.))
- (12a) ukinimaaquq
 ukini-**ma** -aqe -uq
 sew -V.with.interruptions-PROG-IND(3s)
 she is sewing with interruptions
- (12b) aqelqaamamaaquq
 aqelqagh-(ng)u -**ma** -**ma** -aqe -uq
 guest -be.N -V.with.interruptions-V.with.interruptions-PROG-IND(3s)
 'he visits with large interruptions' (examples from de Reuse (1988:146))

The internal syntax is followed by inflectional morphology which is again fixed in order.

9. Conclusion. To adequately describe the morphology of languages such as Manipuri, Cuzco Quechua and Saint Lawrence Island Yupik Eskimo, morphological theory must account for mixed morphological systems. This would be made possible if Morphology (and therefore the organizational principles within morphology) were considered an independent grammatical component.

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Abbreviations:

For the Manipuri examples abbreviations for the DM and IM can be figured out by looking at the definition of the morpheme in question in the body of the paper. Enclitics are given in CAPS in the morphemic gloss. The abbreviation conventions used for the enclitics are:

Abbreviation	Meaning
NHYP	nonhypothetical
DLMT	delimitative
COP	copula
ASRT	assertive
PROBH	prohibitive
TAG	invariant tag question
EX	exclusive

Abbreviations used in the Quechua examples:

CAUS	causative
DESI	desiderative
1ob-3	1st person object-3rd person subject

Abbreviations used in the Eskimo examples:

IND	indicative
3s-3s	3rd person subject-3rd person object
PROG	progressive