

MANAGALASI VERB INFLECTION

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0. Introduction. There are approximately 5,000 speakers of the Managalasi language¹ located south of Mount Lamington and west of the mountain ranges called the Hydrographers. The area extends as far south as the Birigi River in the Northern District of Papua. This paper² is based on ten months field work at Numba, under the auspices of the Summer Institute of Linguistics.

This paper describes the subject-person and tense affixes which occur in utterance final verbs in conversational texts.³ Initially, it was difficult to decide between any one of several possible analyses. The two presented here have been chosen as those that best reveal the patterning of the language.

The technique for discovering this patterning has utilized the matrix theory developed by Kenneth L. Pike.⁴ It is briefly stated by Pike and Erickson⁵ as follows:

"A matrix is first set up with rows and columns determined by some arbitrary arrangement of semantic categories, or units, or components of various types. Then one column is moved to right

¹The Managalasi phonemes below do not constitute the complete phonemic system. Those listed have been given because there is not an exact correspondence between the phonetic description and its practical orthographic counterpart.

(1) Voiced fricative |v| bilabial.

(2) Voiceless affricate ||| alveolar.

(3) Glottal stop |ʔ|

(4) Retroflexed flap |r| which fluctuates with flap [ɾ] lateral, before vowels u and i.

(5) Vowel |a| has allophones [ə] and [a]. [ə] occurs word final and in unstressed syllables; [a] occurs elsewhere.

²The present paper has been prepared during informal grammar sessions in consultation with Dr. Richard Pittman to whom I am indebted for the second analysis. I am particularly indebted to my colleagues Wayne Dye, Dr. Alan Healey and Robert Conrad for their valuable suggestions during the preparation of this paper.

³There are also mood prefixes and object person suffixes. Final verbs in narrative texts have a different system of affixation.

⁴Pike, 1962:221-244.

⁵Pike and Erickson, 1964: 201.

or left so as to bring together—or closer together—similar formatives (phonological intersects in the cells); this operation is repeated as often as is desired. Similarly—or alternately, with a column change—a row can be moved up or down to bring formatives together. The goal: (a) to get the most compact blocks of formatives together, and then (b) to study semantic or formal characteristics of these blocks."

In studying Managalasi verb inflection the tense columns were rearranged from the usual order of past, present and future to future, past and present. The pronoun rows were rearranged from the usual order to 1 singular; 1,2,3 plural; and 2,3 singular. Until such a matrix permutation process was utilized the inflectional patterning was not evident.

1. Verb Stem Classes. Verb stems may be subdivided into 5 classes on the basis of stem final *v*, *j*, *h*, *?*, or vowel. Some examples are:

- Class I *iv-* 'laugh', *ajov-* 'watch', *juhav-* 'fear', *asiv-* 'pass by', *auv-* 'break', *arev-* 'leave it'.
- Class II *ij-* 'eat', *nihij-* 'cook', *apej-* 'get' *osivaj-* 'scrape', *ukuj-* 'wipe', *oj-* 'fall'.
- Class III *mah-* 'give', *arih-* 'spill', *misoh-* 'peel', *nah-* 'show', *aruh-* 'bend', *taniteh-* 'take off'.
- Class IV *va?-* 'go'
- Class V *ana-* 'hit', *ro-* 'come', *ohu-* 'cut', *ja-* 'build fire', *use-* 'pour out', *tairi-* 'pull'.

2. Analysis I. Managalasi final verb forms are the result of the morphophonemic interaction of the stem final consonant, a first order subject-person suffix, and a second order tense suffix.

The reconstructed or basic forms of the first order subject-person suffixes are presented in Matrix I. X is defined as an unknown consonant which is neither *?* nor *n* and which is lost according to the morphophonemic rules (section 2.2). This consonant is postulated on the basis of symmetry and to avoid zero morphemes.⁶

Matrix 1 .

Basic Forms of Subject-Person Suffixes

	Future	Past	Present
1 Sg.	*-?eju	*-Xot	*-X
1,2,3 Pl.	*-?ej	*-Xar	*-X
2,3 Sg.	*-?en	*-nan	*-n

The basic forms of the second order tense suffixes are:

Future	Past	Present
*-a	*-e	*-o

The morphophonemic interaction of the final consonant of the verb stem with the subject-person and tense suffixes is now illustrated for the verb *mah-* 'give' in paradigm 1.

⁶Nida, 1949: 45 on "Basic and Non Basic Allomorphs".

Paradigm 1.

	Verb Stem: <i>mah-</i> 'to give'		
	Future	Past	Present
1 Sg.	maʔejo	mahote	maho
1,2,3 Pl.	maʔeja	mahare	maho
2,3 Sg.	maʔena	mahane	maho

2.1 Pronoun Matrices. For each verb class in turn, matrices 3 to 7 show the results of the morphophonemic interaction of just the final consonant of the verb stem and the first order subject-person suffixes of Matrix 1, whereas the paradigms 3 to 7 illustrate the full forms for each verb class.

Matrix 2.

Interaction of Stem-Final *v* and Subject-Person Suffixes

	Future	Past	Present
1 Sg.	ʔeju	vot	v
1,2,3 Pl.	ʔej	var	v
2,3 Sg.	ʔen	man	m

Paradigm 2.

Verb Class I: *iv-* 'laugh'

	Future	Past	Present
1 Sg.	iʔejo	ivote	ivo
1,2,3 Pl.	iʔeja	ivare	ivo
2,3 Sg.	iʔena	imane	imo

Matrix 3.

Interaction of Stem-Final *j* and Subject-Person Suffixes

	Future	Past	Present
1 Sg.	ʔeju	jot	j
1,2,3 Pl.	ʔej	jar	j
2,3 Sg.	ʔen	nan	n

Paradigm 3.

Verb Class II: *vej-* 'make'

	Future	Past	Present
1 Sg.	veʔejo	vejote	vejo
1,2,3 Pl.	veʔeja	vejare	vejo
2,3 Sg.	veʔena	venane	veno

Matrix 4.

Interaction of Stem-Final *h* and Subject-Person Suffixes

	Future	Past	Present
1 Sg.	ʔeju	hot	h
1,2,3 Pl.	ʔej	har	h
2,3 Sg.	ʔen	han	h

Paradigm 4.

Verb class III: *nah*- 'show'

	Future	Past	Present
1 Sg.	naʔejo	nahote	naho
1,2,3 Pl.	naʔeja	nahare	naho
2,3 Sg.	naʔena	nahane	naho

Matrix 5.

Interaction of Stem-Final ʔ and Subject-Person Suffixes

	Future	Past	Present
1 Sg.	ʔeju	ʔot	ʔ
1,2,3 Pl.	ʔej	ʔar	ʔ
2,3 Sg.	ʔen	ʔan	ʔ

Paradigm 5.

Verb Class IV: *vaʔ*- 'go'

	Future	Past	Present
1 Sg.	vaʔejo	vaʔote	vaʔo
1,2,3 Pl.	vaʔeja	vaʔare	vaʔo
2,3 Sg.	vaʔena	vaʔane	vaʔo

Matrix 6.

Interaction of Stem-Final Vowel and Subject-Person Suffixes

	Future	Past	Present
1 Sg.	ʔeju	#ot ⁷	#
1,2,3 Pl.	ʔej	#ar	#
2,3 Sg.	ʔen	#an	#

Paradigm 6.

Verb Class V: *ohu*- 'cut'

	Future	Past	Present
1 Sg.	ohuʔejo	ohuote	ohuo
1,2,3 Pl.	ohuʔeja	ohuare	ohuo
2,3 Sg.	ohuʔena	ohuane	ohuo

2.2 Morphophonemics. The essential morphophonemic rules are as follows:

2.21 Stem-final consonant plus contiguously following non-nasal consonant becomes stem-final consonant.

Examples:

- mah + Xote → mahote (1 Sg. Past) 'gave'
mah + Xare → mahare (1,2,3 Pl. Past) 'gave'
mah + Xo → maho (1 Sg. Present) 'give'
mah + Xo → maho (1,2,3 Pl. Present) 'give'

⁷ The fifth class of verb stems is signalled by the significant absence of a consonant.

- iv + Xote → ivote (1 Sg. Past) 'laughed'
 iv + Xare → ivare (1,2,3 Pl. Past) 'laughed'
 iv + Xo → ivo (1 Sg. Present) 'laugh'
 iv + Xo → ivo (1,2,3 Pl. Present) 'laugh'

2.22 Stem-final voiced consonant plus contiguously following *n* becomes a nasal consonant at the same point of articulation as the voiced consonant.

Examples:

- oj + nane → onane (2,3 Sg. Past) 'fell'
 oj + no → ono (2,3 Sg. Present) 'fall'
 iv + nane → imane (2,3 Sg. Past) 'laughed'
 iv + no → imo (2,3 Sg. Present) 'laugh'

2.23 Stem-final voiceless consonant plus contiguously following *n* becomes voiceless consonant.

Examples:

- mah + nane → mahane (2,3 Sg. Past) 'gave'
 mah + no → maho (2,3 Sg. Present) 'give'
 nah + nane → nahane (2,3 Sg. Past) 'showed'
 nah + no → naho (2,3 Sg. Present) 'show'

2.24 Stem-final consonant plus contiguously following glottal stop becomes glottal stop.

Examples:

- mah + ?ejua → ma?ejo (1 Sg. Future) 'will give'
 mah + ?eja → ma?eja (1,2,3 Pl. Future) 'will give'
 mah + ?ena → ma?ena (2,3 Sg. Future) 'will give'
 va? + ?ejua → va?ejo (1 Sg. Future) 'will go'
 va? + ?eja → va?eja (1,2,3 Pl. Future) 'will go'
 va? + ?ena → va?ena (2,3 Sg. Future) 'will go'

2.25 The absence of a stem-final consonant functions as a voiceless consonant.

Examples:

- ana + Xote → anaote (1 Sg. Past) 'hit'
 ana + Xare → anaare (1,2,3 Pl. Past) 'hit'
 ana + nane → anaane (2,3 Sg. Past) 'hit'
 ana + Xo → anao (1 Sg. Present) 'hit'
 ana + Xo → anao (1,2,3 Pl. Present) 'hit'
 ana + no → anao (2,3 Sg. Present) 'hit'

2.26 Stem-final *u* plus contiguously following *a* becomes *o*.

Examples:

- o?eju + a → o?ejo 'I will fall'
 ma?eju + a → ma?ejo 'I will give'
 ve?eju + a → ve?ejo 'I will make'

va[?]eju + a → va[?]ejo 'I will go'
 ro[?]eju + a → ro[?]ejo 'I will come'

3. Analysis II.

Managalasi final verb forms are the result of the morphophonemic interaction of the stem-final consonant, a tense suffix, and a subject-person simulfix.⁸

3.1 Tense Suffixes and Morphophonemics. The basic forms of the tense suffixes are:

Future	- [?] eja
Past	-ate
Present	-o

The interaction of these with verb stems involves just one morphophonemic process: Stem final consonant + ? → ?

Example:

iv- + -[?]eja → i[?]eja 'we/you pl/ they will laugh'

3.2 Subject-Person Simulfices and Morphophonemics. The subject-person simulfices are represented by the following symbols:

1st person singular	All persons plural	2nd 3rd persons singular
U	R	N

These three morphemes interact with stem-final consonants and with phonemes that are initial, medial, and final within the tense suffixes. Thus these subject-person morphemes are best viewed as occurring simultaneously with the stem-final consonant and tense suffixes rather than as occurring in linear sequence with them as a first or second order suffix. In the morphophonemic formulae below they are written in sequence for convenience, but their simultaneous occurrence is represented by the use of capitals. In the formulae, \bar{a} represents vowels other than *a*, and \bar{t} represents consonants other than *t*.

Simulfix U interacts with the vowels of the tense suffix as follows:

a + U → o e.g. -ate + U → -ote (1st per. Sg. Past)
 \bar{a} + U → \bar{a} e.g. -[?]eja + U → -[?]eja (1st per. Pl. Future)

Simulfix R interacts with the stem-final consonant and with the consonants of the tense suffix as follows:

t + R → r e.g. -ate + R → -are (Plural persons Past)
 \bar{t} + R → \bar{t} e.g. -[?]eja + R → -[?]eja (Plural persons Future)

Simulfix N interacts with the stem final consonant and with the consonants of the tense suffix as follows:

v + N → m e.g. iv-o + N → imo 'you/he/she is laughing'

⁸A simulfix is an affix which is best viewed as occurring simultaneously with another morpheme rather than in sequence with it, or that is more simply described in terms of morphophonemic processes than in terms of phonemes. Wallis 1956: 453-459.

- j + N → n e.g. vej-o + N → veno 'you/he/she is making'
 t + N → n e.g. iv-ate + N → imane 'you/he/she laughed'
 h + N → h e.g. nah-o + N → naho 'you/he/she is showing'
 ? + N → ? e.g. va?-o + N → va?o 'you/he/she is going'

3.3 The interaction of each stem-final consonant with each tense suffix and with each subject-person simulfix is shown in Matrix 7 in the form of abstracted verb endings, and in Paradigm 7 using five illustrative verbs.

Matrix 7.

Verb Endings for All Stem Classes

Stem-Final Conson.	Tense + Suffix	Subject-Person Simulfix	Verb Ending
		1st Person Sg.	Plural Persons 2/3 Persons Sg.
Future			
v + -?eja	+ U	→ ?ejo	+ R → ?eja + N → ?ena
j + -?eja	+ U	→ ?ejo	+ R → ?eja + N → ?ena
? + -?eja	+ U	→ ?ejo	+ R → ?eja + N → ?ena
h + -?eja	+ U	→ ?ejo	+ R → ?eja + N → ?ena
# + -?eja	+ U	→ ?ejo	+ R → ?eja + N → ?ena
Past			
v + -ate	+ U	→ vote	+ R → vare + N → mane
j + -ate	+ U	→ jote	+ R → jare + N → nane
? + -ate	+ U	→ ?ote	+ R → ?are + N → ?ane
h + -ate	+ U	→ hote	+ R → hare + N → hane
# + -ate	+ U	→ ote	+ R → are + N → ane
Present			
v + -o	+ U	→ vo	+ R → vo + N → mo
j + -o	+ U	→ jo	+ R → jo + N → no
? + -o	+ U	→ ?o	+ R → ?o + N → ?o
h + -o	+ U	→ ho	+ R → ho + N → ho
# + -o	+ U	→ o	+ R → o + N → o

Paradigm 7.

(for All Stem Classes)

Verb Stem	1st Person Sg.	Plural Persons	2/3 Persons Sg.
Future			
iv- 'laugh'	i?ejo	i?eja	i?ena
vej- 'make'	ve?ejo	ve?eja	ve?ena
va?- 'go'	va?ejo	va?eja	va?ena
nah- 'show'	na?ejo	na?eja	na?ena
ohu- 'cut'	ohu?ejo	ohu?eja	ohu?ena

Past

iv- 'laugh'	ivote	ivare	imane
vej- 'make'	vejote	vejare	venane
va?- 'go'	va?ote	va?are	va?ane
nah- 'show'	nahote	nahare	nahane
ohu- 'cut'	ohuote	ohuare	ohuane

Present

iv- 'laugh'	ivo	ivo	imo
vej- 'make'	vejo	vejo	veno
va?- 'go'	va?o	va?o	va?o
nah- 'show'	naho	naho	naho
ohu- 'cut'	ohuo	ohuo	ohuo

4. Conclusion. Before using matrix permutation the author searched at length for a pattern in this data, but none could be found. The data was listed systematically by verb stem classes, and various hypotheses were tested; all were inadequate. Finally, when matrix technique was used the patterning was evident in a few hours.

The key simplifying factor to the analyses was that there were only three categories of subject-person suffixes in the Managalasi utterance-final verbs. The morphophonemic patterning was best seen when these suffixes were rearranged in the order 1 singular; 1,2,3 plural; 2,3 singular; from the traditional order 1 singular; 2 singular; 3 singular; 1 plural; 2 plural; 3 plural. Matrix permutation greatly speeded up the analyses of this material.

It is suggested that, for describing extensive morpheme fusion, a carefully arranged display of the fused forms often shows the system more clearly than a listing of abstract morphemes and morphophonemic processes. For example, compare Matrix 7 with sections 3.1 and 3.2.

Finally, the Managalasi verb inflections illustrate well the possibility of alternate morpheme cuts - the nonuniqueness of morphemic solutions.

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