

Allomorphy in Masarak's second person

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Masarak (also known as Masalit, sometimes spelled Massaleit) is a highly endangered previously undocumented Nilo-Saharan language spoken in Darfur. The language is characterized by complicated agreement patterns, and the imperative, prohibitive and 2nd person agreement systems are particularly complex. These systems exhibit a web of stem alternations and agreement allomorphy conditioned by varying factors, such as verb class, stem phonology, and grammatical properties such as aspect. This paper provides a detailed outline of the morphology and morphophonology of Masarak's imperative, prohibitive and 2nd person systems.

1 Overview of Masarak

Masarak (exonym: Masalit) is an endangered, largely undocumented, Nilo-Saharan language spoken by the Masalit people in Darfur. Masarak is an S-O-V, agglutinating language that exhibits complex agreement properties with both the object and the subject of the verb and has a Nominative-Accusative Case alignment, as shown in (1):

- (1) a. ama tiro a-ŋoŋ-e
 1SG.NOM 3SG.ACC 1SG.SUBJ-love-PRS¹
 'I love him.'
- b. ama a-dilɛ-na
 1SG.NOM 1SG.SUB-swim-PST
 'I swam.'

1 The following abbreviations are used here: SG = singular, NOM = nominative, ACC = accusative, SUBJ = subject, PRS = present, PL = plural, PST = past, PFV = perfective, IPFV = imperfective, IMP = imperative, NEG = negation, PROH = prohibitive, CONT = continuous, 1 = 1st person, 2 = 2nd person, 3 = 3rd person. #># is used to indicate the number of subjects and objects, respectively, when -nd/-mb-, a portmanteau morpheme which indicates object agreement, is present.

2.1 The Forms of Verb Roots

Recall that Masarak verb roots take two forms, depending on aspect. Understanding root alternations is important to understanding imperative and prohibitive verb forms. In the imperative, which root is used will also predict post-stem morphology. Example (5) repeats the perfective/imperfective alternation seen in (2):

- | | | |
|-----|-------------------------------|--------------------------------|
| (5) | a. ti-ɲa:n-ari | b. ti-ɲ-eri |
| | 3SG-eat ₂ -PST.PFV | 3SG-eat ₁ -PRS.IPFV |
| | 'He had eaten.' | 'He is eating.' |

Not all Masarak verb roots alternate in the same way. Across the language, two main patterns emerge:

- (6) a. Pattern I: the final rime is dropped from the perfective root to form the imperfective.
 b. Pattern II: an imperfective stem-final /n/ alternates with a perfective stem-final /k/.

Occasionally, there is no alternation between imperfective and perfective verb roots. There are even rarer instances of verb roots which alternate according to exceptional rules of suppletion. An example of verb roots which alternate in accordance to Patterns I and II can be found in example (7).

(7) Alternation Patterns

Pattern I (rime-drop)

- | | |
|-------------------|--------------------|
| a. g-imin-a | b. g-im-i |
| 2SG-kick.PFV-PST | 2SG-kick.IPFV-PRS |
| 'You had kicked.' | 'You are kicking.' |

Pattern II (n/k alternation)

- | | |
|-------------------|-------------------|
| a. t-oin-a | b. t-oik-e |
| 3SG-pour.PFV-PST | 3SG-pour.IPFV-PRS |
| 'She had poured.' | 'She is pouring.' |

2.2 The Forms of Verb Stems

Masarak has two verb classes (which I have dubbed) G-Class and L-Class. A given verb is marked in the lexicon (or otherwise pre-syntactically) as either G-

or L-Class. Therefore, class membership is unpredictable. Verb class determines the form of the 2SG indicative, imperative, prohibitive and participial verb. Root-alternation patterns do not have a bearing on verb class.

Masarak has five total 2SG agreement allomorphs $\{/g/, /ø/, /dʒ/, /l/, \text{ and } /lV/\}$. Which allomorph will be used depends on the phonological properties of the left edge of the verb stem and verb class. The breakdown of which allomorph belongs to which verb class is as follows:

- (8) a. G-class takes $\{/dʒ/, /ø/, \text{ and } /g/\}$ ³
 b. L-class takes $\{/l/ \text{ and } /lV/\}$

L-Class verbs, when compared to the paradigm presented in (3), appear **completely regular** in that the agreement prefix only alternates between an underlying consonant ($/l/$) and the combination of that consonant with a vowel ($/lV/$). G-Class verbs do not. It is impossible to predict which allomorph will be used based on left-edge phonology alone. This is supported by evidence from causatives in Masarak. Masarak causative verbs are distinguished by the causative marker *-n-* or *-nd-*, which appears at the left edge of the verb stem, following agreement prefixes⁴. Example (14) shows a (near) minimal pair which proves that more than left-edge stem phonology is needed in determining the shape of the agreement prefix for Masarak verbs. Note that *-rinan-* takes its agreement prefix, $/ø/$, from the G-Class set, while *-riniŋ-* takes its agreement morpheme, $/l\alpha/$, from the L-Class set. Example (14) shows the shape of a Masarak causative verb. Note that the causative verb contains the additional morpheme, *-n-*, directly following the verb root, *-osiŋ-*.

- (9) a. $\underline{\emptyset}$ -rinan-a b. $\underline{l\alpha}$ -riniŋ-a
 2SG-say-PST 2SG-sleep-PST

3 The seemingly unrelated phonemes $/dʒ/, /ø/, \text{ and } /g/$ are related (I believe) in the following way:

Masarak phonology does not allow for complex consonant clusters, and, unlike all other agreement morphemes, I do not believe the G-Class 2SG morphemes have an underlying vowel. When the stem starts with a vowel, this is not a problem, and the underlying $/g/$ can be added without forcing the root to undergo phonological change. When the stem begins with a consonant, the underlying $/g/$ is eliminated completely, to prevent the realization of an ungrammatical $*gC$. When the stem begins with $/s/$, I believe the $/s/$ and $/g/$ merge to form $/dʒ/$ ($/gs/ \rightarrow /dʒ/$), a phoneme which appears elsewhere in the language.

4 Wood (2010)

- (10) a. adam masarak t-osin-a
Adam Masarak 3SG-learn-PST
'Adam learned Masarak.'
- b. adam tiro masarak to-n-osin-a
Adam_i him_j Masarak 3SG-CAUS-learn-PST
'Adam taught him Masarak.'

In the causative pair *-ar-* 'come' and *-nar-* 'bring' ('cause-to-come'), the agreement allomorph shifts from [g] to [∅] once the causative *-n-* is added to the base. Both (15a) and (15b) show agreement allomorphs from the G-Class set, revealing that the addition of causative morphology only alters the phonological shape of the verb stem (i.e., it does not effect verb class, or allow for the selection of agreement allomorphs between G- and L-Class sets).

- (11) a. **g-ar-a**
2SG-come-PST
'You came.'
- b. **∅-n-ar-a**
2SG-CAUS-come-PST
'You brought (it).'

2.2.1 Declarative Allomorphy

G-Class allomorphy is predictable, but irregular. When the verb stem begins with a consonant other than /s/, the 2SG agreement allomorph is [∅]. When the verb stem begins with /s/, the allomorph is [dʒ]. Elsewhere, the allomorph is [g].

- (12) a. *-ja : n-* 'eat'
i. **∅-ja:n-a**
2SG-eat-PST
- b. *-so ron-* 'fight'
i. **dʒ-oron-a**
2SG-fight-PST
- c. *-imin-* 'kick'
i. **g-imin-a**
2SG-kick-PST

L-Class allomorphy is completely regular. When the verb stem begins with a vowel, the 2SG agreement allomorph is /l/. Elsewhere, the 2SG agreement allomorph is /IV/. This is the same pattern that follows from the agreement morphemes displayed across other persons and numbers in the language.

(13)

a.	<i>-aij-</i> 'enter'	b.	<i>-siŋ-</i> 'step on'	c.	<i>-dʒiŋel-</i>
	i. l-aij-a		i. li-siŋ-a		i. li-dʒiŋel-a
	SG-enter-PST		2SG-enter-PST		2SG-wake.up-PST

3 Imperative Forms

Masarak has a morphologically dedicated second singular as well as second plural imperative system. Recall that in declarative verbs, both number and person are contained within the agreement prefix. In perfective imperative verbs the plural is distinguished by the verbal suffix *-i*. The morpheme *-i* does not indicate the plural elsewhere in the language. Note that there is no number feature contained in the imperative marker **lu-**. Note, additionally, that the verb root in (18) is inflected for the **perfective** aspect.

- (14) a. maŋ ndisiŋgo lu-toroŋ
 you.SG door IMP-open.PFV
 'You, open the door!'
- b. ki ndisiŋgo lu-toroŋ-i
 you.PL door IMP-open.PFV-PL
 'You all, open the door!'

Like the declarative 2SG, the Masarak imperatives show a wide range of allomorphy and a similar pattern regarding the regularity of verb classes. In G-Class verbs, the imperative morpheme is either /k/ (when the verb stem begins with a vowel) or /∅/ (elsewhere). L-Class imperatives (unsurprisingly) show the same patterns for allomorph selection as L-Class 2SG verbs. The imperative morpheme is either /l/ (before a vowel) or /lV/ (elsewhere). This conclusion, again, is supported by causative evidence. Just as in 2SG declarative verb, the addition of a causative morpheme only affects stem phonology, and does not influence class membership.

(15) G-Class allomorphy:

Stem initial:	Allomorph:	Example:
/s/	∅	∅-soron(-i) IMP-kick(-PL) 'You (all) kick!'
C, non-/s/	∅	∅-ndil(-i) IMP-tell(-PL) 'You (all) tell it!'
V	k	k-aŋiŋ(-i) IMP-run(-PL) 'You (all) run!'

(16) L-Class allomorphy:

Stem initial: Allomorph: Example:		
C	IV	la-dziŋ(-i) IMP-sing(-PL) 'You (all) sing!'
V	l	l-ij(-i) IMP-die(-PL). 'You (all) die!'

Like the declarative forms of the verb, Masarak imperatives also show a perfective/imperfective root alternation. Note that example (21) follows the final-rime-dropping pattern described in (6). Note that the perfective imperative, *kulo*, is marked with an additional suffix, *-o*, which I gloss as a continuous marker.

(17)	a.	k-ulŋ	b.	k-ul-o
		IMP-take.PFV		IMP-take. IPFV-CONT
		'Take (it)!'		'Continue taking (it)!'

Due to this continuous marker, Masarak imperfective imperatives cannot be pluralized with the addition of the suffix *-i*. Instead, the suffix *-e* must be used. It is possible that this *-e* is really a combination of the continuous *-o* and the plural morpheme *-i*.

A final note regarding Masarak imperatives is the unusual syncretism between Masarak imperatives and participial forms. Masarak has both imperfective and perfective participial verb forms. Imperfective participials are completely syncretic with imperfective imperatives in the language. Likewise, perfective participials are syncretic with perfective imperatives. An example of this can be seen on the following page, in (23):

- (18) a. ki: ka-dziŋ-a ɲugur-u **ken**
 you.PL 2SG-sing-PST food-ACC **make.PFV**
 'You sang after preparing the food.'
- a'. ɲugur-u **ken**
 food-ACC **make.IMP**
 'Make food!'
- b. adam kuɲo **roko** ambro andi-kela
 Adam fish **sell.IPFV** I.ACC 3SG>1SG-see-PST

5 Conclusions

This paper has demonstrated that Masarak verbs can be divided into two classes, which I have dubbed the G- and L-Classes. Class membership is unpredictable, and assigned before syntax. L-Class verbs show a regular agreement pattern across all persons, including 2SG. G-Class verbs, however, do not show a regular agreement pattern in 2SG. However, even though G-Class allomorphy is irregular, it is still completely predictable. Across the second person, class membership and the phonology of the left-edge of the verb stem are necessary to predict 2SG agreement allomorphy. This information—class membership and stem phonology—will determine the phonological shape of the 2SG declarative, imperative, prohibitive and participial verb form.

All declarative and prohibitive verbs utilize the same agreement prefixes, which are marked for both person and number. The imperative agreement prefixes, however, are not marked for number, and so, in imperative verbs, plurality is indexed by the addition of the plural-marker *-i*.

Theoretical questions remain surrounding two aspects of 2SG agreement. The first is the question of which features the pure agreement suffixes (shown in declarative and prohibitive verbs) share with the imperative morphemes. Recall that G-Class verbs use the allomorphs /k/ and /ø/ to mark imperative verbs. In the declarative paradigm, /k/ and its agreement allomorph are marked with a **plural** feature. L-Class verbs use the allomorphs /l/ and /IV/ to mark imperative verbs. In the declarative paradigm, /l/ and /IV/ are marked with a **singular** feature. Example (22) compares the declarative and imperative forms of relevant G- and L-Class verbs.

(22)		Declarative Singular	Declarative Plural	Imperative
	G-Class	g-aɾiŋ-a 2SG-run-PST 'You ran.'	k-aɾiŋ-a 2PL-run-PST 'You all ran.'	k-aɾiŋ(-i) IMP-run(-PL) '(You all,) run!'
	L-Class	la-dʒiŋ-a 2SG-sing-PST 'You sang.'	ka-dʒiŋ-a 2PL-sing-PST 'You all sang.'	la-dʒiŋ(-i) IMP-sing(-PL) '(You all) sing!'

The second is the question of the identical form of Masarak imperative and participial verb. Example (23) gives an example of this syncretism, using both an imperfective imperative/participial pair while (24) gives an example of a perfective imperative/participial pair.

- (23) a. adam kupno **roko** ambro andi-kela
 Adam fish sell.PTCP I.ACC 3SG>1SG-see-PST
 'Adam saw me while selling the fish.'
- b. kupno **roko**
 fish sell.IMP
 'Continue selling the fish!'
- (24) a. ki: ka-dʒiŋ-a ɲugur-u **ken**
 you.PL 2SG-sing-PST food-ACC make.PFV
 'You sang after preparing the food.'
- b. ɲugur-u **ken**
 food-ACC make.IMP
 'Make food!'

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