

Morphologically Conditioned Vowel Length in Ga: a Templatic Analysis

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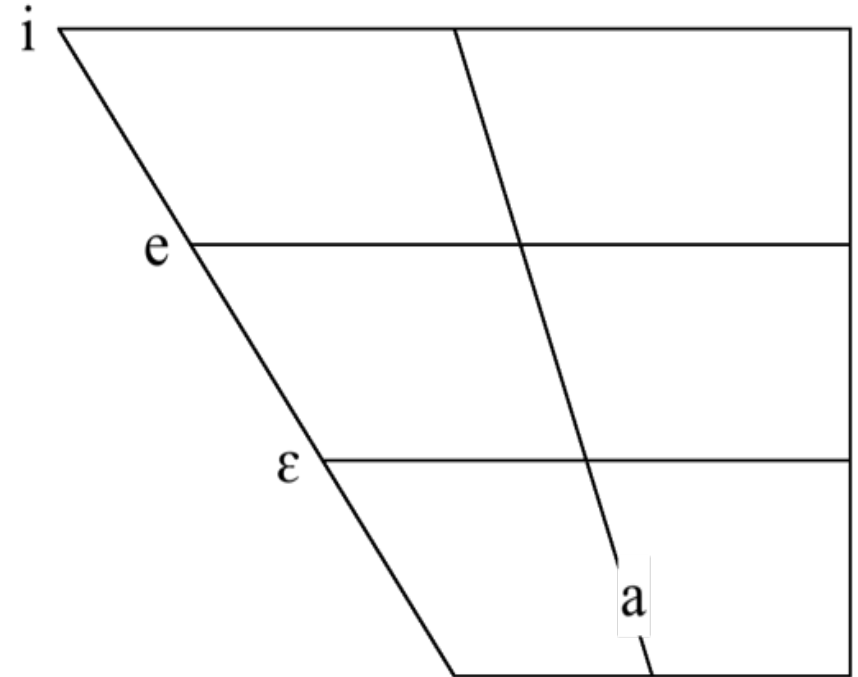


Overview

- Certain aspects (progressive, aorist, habitual, negative) show morphology in Ga through alternations in vowel length.
- A templatic analysis in which aspects are associated with templates imposed on roots can account for these alternations.

Background on Ga

Ga has a symmetrical 7-vowel inventory. Length is contrastive for all vowel qualities and nasality is contrastive for non-mid vowels.



There are 3 surface vowel lengths (of one, two and three moras), the first two of which are phonemic.

(a) nũ water 'water'	(b) nũũ man 'man'	(c) kàáà crab 'crab'
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Ga has 2 contrastive level tones (H and L). The tone-bearing unit is the mora.

(a) lá blood 'blood'	(b) la fire 'fire'
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Some aspects in Ga are expounded by the length of the vowel of the final syllable of the verb.

progressive	unmarked (aorist)	habitual	negative
μμ (subject pronoun)	level tone: μ contour tone: μμ	μμ	μμμ

Theoretical Background

Templatic morphology

- Form of non-concatenative morphology that imposes constraints on the shape of words (Inkelas 2014)
- Has been employed classically to analyze the verbal morphology of Semitic languages (McCarthy & Prince 1990)
- Benefits:** provides a basis for further exploration of interactions of tone and aspect, accounts for observed data

Vowel Length Alternations

Aspectual Paradigm

Using a templatic analysis, the progressive can be described as imposing a bimoraic template on the subject pronoun. A verb may surface as either monomoraic or bimoraic in the aorist, depending on its underlying tone. The habitual imposes a bimoraic template on the final syllable of the verb. The habitual is unique among aspectual marking in that the two moras are not necessarily of the same vowel quality. The negative imposes a trimoraic template on the final syllable of the verb. The contrast between the progressive, aorist and habitual aspects is neutralized in the negative.

	progressive	aorist	habitual	negative
sleep	ƵƵƵ ƵƵ 'We are sleeping.'	ƵƵ ƵƵ 'We slept.'	ƵƵ ƵƵƵ 'We sleep.'	ƵƵ †ƵƵƵ 'We do not sleep.'

Interactions with Tone

A subset of verbs in Ga surface as bimoraic in the aorist. These verbs carry a contour tone across their two moras. Previous literature on Ga (Dakubu 2008, Ollennu 2019) has not acknowledged these verbs or how they fit into generalizations made about verbal morphology in Ga.

(a) e gbèé ʃi 3SG fall PART 'He fell.'	(b) e ɲóò 3SG be.tasty 'It is tasty.'	(c) e tʃii 3SG be.heavy 'It is heavy.'
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	progressive	aorist	habitual	negative
teach	ƵƵƵ tʃǝǝ 'We are teaching.'	ƵƵ tʃǝǝ 'We slept.'	ƵƵ tʃǝǝ 'We teach.'	ƵƵ †tʃǝǝ 'We do not teach.'

There are tone alternations associated with certain aspects, which are dependent on the underlying tone of the verb. In the habitual, verbs that are underlyingly L surface as L, while all those with a H tone in the input surface as HL. In the negative, verbs that are underlyingly H surface as H, while all those with a L tone in the input surface as †H. Note that the H tone of the negative surfaces also on the pronoun in those cases.

	progressive	aorist	habitual	negative
sing (H)	ee lá 'He is singing.'	e lá 'He sang.'	e láà 'He sings.'	e lááá 'He does not sing.'
dream (L)	ee la 'He is dreaming.'	e la 'He dreamed.'	e laa 'He dreams.'	é †lááá 'He does not dream.'
be heavy (HL)	N/A	e tʃii 'It is heavy.'	N/A	é †tʃííí 'It is not heavy.'
fall (LH)	ee gbèé ʃi 'He is falling.'	e gbèé ʃi 'He fell.'	e gbìò ʃi 'He falls.'	é †gbééé ʃi 'He does not fall.'

Analysis

Morpheme-Specific Constraints

NEGATIVE = $\begin{smallmatrix} \sigma \\ \mu \mu \mu \end{smallmatrix}$ — Assign a violation for any morpheme in the negative that is not exactly 3 moras.

HABITUAL = $\begin{smallmatrix} \sigma \\ \mu \mu \end{smallmatrix}$ — Assign a violation for any morpheme in the habitual that is not exactly 2 moras.

PROGRESSIVE = $\begin{smallmatrix} \sigma \\ \mu \mu \end{smallmatrix}$ — Assign a violation for any morpheme in the progressive that is not exactly 2 moras.

These templates apply only to the syllable on the right edge of the prosodic word, which is transparent in the case of disyllabic verbs. We get the observed output in the order NEGATIVE = μμμ, REALIZEMORPH, IDENT-LEFTEDGE >> DEP-μ, in which the positional faithfulness constraint ensures that the syllable on the left edge of the prosodic word remains the same in the output and the markedness constraint requires verbs to be altered to expone aspectual meaning.

tʃúɱɔ _{Neg}	NEGATIVE = μμμ	REALIZEMORPH	IDENT-LEFTEDGE	DEP-μ
→ tʃú†mósó				**
tʃúúú†mó			*!	**
tʃú†mó	*!	*!		
tʃúúú†mósó	*!		*!	****
tʃú†mósó	*!	*!		*

For monosyllabic verbs, the single syllable of the verb is both the left edge and the right edge: the ranking NEGATIVE = μμμ, REALIZEMORPH >> IDENT-LEFTEDGE, DEP-μ generates the correct output.

lá _{Neg}	NEGATIVE = μμμ	REALIZEMORPH	IDENT-LEFTEDGE	DEP-μ
→ lááá			*	**
láá	*!	*!	*	*
lá	*!	*!		

The derivation of the aorist is straightforward for verbs with level tone.

ɲɱɔ _{Aor}	DEP-μ
→ ɲɱɔ	
ɲɱɔɔ	*!
ɲɱɔɔɔ	**!

For verbs in which the final syllable is associated with a contour tone, we get the observed output when the constraints are ranked as *CONTOUR_μ, ID-TONE >> DEP-μ.

hòó _{Aor}	*CONTOUR _μ	ID-TONE	DEP-μ
→ hòó			*
hō	*!		
hóò		*!	*
hō	*!	*!	
hò		*!	
hó		*!	

Discussion

Broader consequences:

- Provides support for prosodic template as a theoretical tool which can account for morpheme-specific prosodic requirements
- Adding to literature on templatic analyses outside of Semitic languages
- Contribution to literature on systems that with three-way quantity distinctions by providing clear evidence that all three vowel lengths are morphologically active
- Observation of aspect expounded on pronoun consistent with other West African languages (Guébie, Ebrié, South Mande)

Remaining questions:

- How to account for moras of differing vowel qualities in the habitual with template
- How to model subject pronouns expounding aspect in the progressive
- Tonal alternations as part of the template, or separate processes?

Conclusions

I propose a templatic analysis for verbs in Ga, in which verbal aspects are associated with a surface moraic structure. The aorist, as the unmarked form of the verb, is not associated with a specific template.

progressive	habitual	negative
μμ (subject pronoun)	μμ	μμμ

Selected References

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