MORPHOLOGICAL DOMAINS AND IDIOSYNCRASIES IN A'INGAE STRESS

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PROPOSAL. I demonstrate (i) that verbal stress assignment in A'ingae targets the right edge of the verbal inflectional domain, showing sensitivity to morphological domains, and (ii) that particular morphemes delete preceding stress, showing morpheme-specific effects. Thus, a pattern which at first sight could be described as irregular is really systematic when morphological domains and morphemes-specific stress rules are considered. Previous descriptions of the language do not fully capture stress facts (Fischer and Hengeveld, in press; Repetti-Ludlow et al., 2019).

BACKGROUND. A'ingae (or Cofán, ISO 639-3: con) is an endangered Amazonian isolate spoken by the Cofán people in northeast Ecuador and southern Colombia. The language is predominantly head-marking and heavily suffixing. All the data in this paper come from my own fieldwork.[1]

VERB STRUCTURE. In A'ingae, the suffixes expressing voice, aspect, and associated motion can appear only on verbs (1). Stress is marked with the acute accent and an underline.

(1) a. *panzá -ji*
hunt -PRCM
"about to hunt"

b. **tsandie -ji*
man -PRCM
intended: "about to be a man"

Other suffixes (e. g. expressing of plurality, reality, polarity) can appear on predicates of any lexical class (2).

(2) a. *panzá -'fa*
hunt -PL
"(they) hunted"

b. *tsándie -'fa*
man -PL
"(they) are men"

1 For my previous work on A'ingae stress and glottalization, see Dąbkowski (2019a,b, subm, in press, in prep).

The verbal inflectional morphemes precede the predicate-level morphemes. Thus, we can say that the verb stem and the verbal inflectional morphemes create a *verbal inflection domain* within a larger *predicate domain*. In (3), the two domains are delimited by curly braces { } and abbreviated as *verb* and *pred*, respectively.

(3) { { *panza -ye -jí* $_{verb}$} *-'fa -ya -mbi* $_{pred}$}
hunt -PASS -PRCM -PL -IRR -NEG
"(they$_{PL}$) will$_{IRR}$ not$_{NEG}$ be about$_{PRCM}$ to be$_{PASS}$ hunted"

STRESS WITHIN INFLECTIONAL DOMAIN. There are two classes of verbal stems: underlyingly stressless and with underlying word-initial stress. Underlyingly stressless verbs are assigned penultimate stress by default (4).

(4) a. / *panza* /
[*pánza*]
hunt

b. / *atapa* /
[*atápa*]
breed

Underlying word-initial stress is preserved in the surface forms (5).

(5) a. / *áfa* /
[*áfa*]
speak

b. / *kúndase* /
[*kúndase*]
tell

Observe that both (4a) and (5a) have penultimate stress on the surface. I have said, nevertheless, that they are underlyingly different. This can be seen by looking at forms inflected with morphemes which are inside the verbal domain. Those suffixes count for the calculation of the default penultimate stress (6).

(6) a. / { *panza -ji* $_{verb}$} /
[{ *panzá -ji* $_{verb}$}]
hunt -PRCM

b. / { *atapa -ji* $_{verb}$} /
[{ *atapá -ji* $_{verb}$}]
breed -PRCM

However, stress is not reassigned to the penultimate syllable if it is underlyingly present (7).

(7) a. / { *áfa -ji* $_{verb}$} /
[{ *áfa -ji* $_{verb}$}]
hunt -PRCM

b. / { *kúndase -ji* $_{verb}$} /
[{ *kúndase -ji* $_{verb}$}]
tell -PRCM

Thus, the difference in the underlying form between (4a) and (5a) is revealed by the stress difference between (6a), where stress is assigned to the penultimate syllable by default, and (7a), where initial stress is preserved.

(4) a. / *panza* /
[*pánza*]
hunt

b. / *atapa* /
[*atápa*]
breed

(5) a. / *áfa* /
[*áfa*]
speak

b. / *kúndase* /
[*kúndase*]
tell

(6) a. / { *panza -ji* $_{verb}$} /
[{ *panzá -ji* $_{verb}$}]
hunt -PRCM

b. / { *atapa -ji* $_{verb}$} /
[{ *atapá -ji* $_{verb}$}]
breed -PRCM

(7) a. / { *áfa -ji* $_{verb}$} /
[{ *áfa -ji* $_{verb}$}]
hunt -PRCM

b. / { *kúndase -ji* $_{verb}$} /
[{ *kúndase -ji* $_{verb}$}]
tell -PRCM

STRESS WITHIN PREDICATE DOMAIN. When predicate-level morphology is present, stress is assigned to the last syllable of the verbal inflectional domain (8).

(8) a. / { { *panza -ji* $_{verb}$} *-'fa* $_{pred}$} /
[{ { *panza -jí* $_{verb}$} *-'fa* $_{pred}$}]
hunt -PRCM -PL

b. / { { *panza -ji* $_{verb}$} *-ya -mbi* $_{pred}$} /
[{ { *panza -jí* $_{verb}$} *-ya -mbi* $_{pred}$}]
hunt -PRCM -IRR -NEG

In (8a), we see that stress falls on the syllable which immediately precedes the predicate domain. However, the stress assignment in (8a) is not the default penultimate stress, which we can see in forms with more then one predicate-level suffix. In (8b), for example, stress falls on the antepenultimate syllable.

However, lexical stress of a stem is unaffected. Thus, in (9), lexically-listed word-initial stress is retained (stress is not reassigned to the last syllable of the verbal inflectional domain).

(9) / { { *áfa -ji* $_{verb}$} *-'fa -ya -mbi* $_{pred}$} /
[{ { *áfa -ji* $_{verb}$} *-'fa -ya -mbi* $_{pred}$}]
hunt -PRCM -PL -IRR -NEG

STRESS-DELETING SUFFIXES. Certain suffixes within the verbal inflectional domain, such as *-ye* 'PASS' or *-khu* 'RCPR,' delete preexisting stress from the verb stem (represented with $_{\emptyset}$). Whether a suffix deletes stress or not is not predictable from its semantics or syntax.

By deleting lexical stress, these morphemes make the underlyingly stressed verbs behave like the underlyingly stressless ones.

Thus, when a stress-deleting suffix is present and there are no predicate-level suffixes then stress is assigned to the penultimate syllable even if the stem is underlyingly stressed (10-11).

(10) a. / { *panza -ye*$_{\emptyset}$ *verb*} /
[{ *panzá -ye verb*}]
hunt -PASS

b. / { *áfa -ye*$_{\emptyset}$ *verb*} /
[{ *afá -ye verb*}]
speak -PASS

(11) a. / { *panza -ye*$_{\emptyset}$ *-ji verb*} /
[{ *panza -yé -ji verb*}]
hunt -PASS -PRCM

b. / { *áfa -ye*$_{\emptyset}$ *-ji verb*} /
[{ *afa -yé -ji verb*}]
speak -PASS -PRCM

And finally, if predicate-level morphemes are present, stress falls on the last syllable of the verbal inflectional domain (12).

(12) / { { *áfa -ye*$_{\emptyset}$ *-ji verb*} *-'fa -ya pred*} /
[{ { *afa -ye -jí verb*} *-'fa -ya pred*}]
hunt -PASS -PRCM -PL -IRR

CONCLUSION. In conclusion, I showed that A'ingae stress assignment can be accounted for by recognizing two morphological domains and morpheme-specific rules: Stress is assigned to the right edge of the verbal inflectional domain and particular suffixes delete preexisting stress.

In the appendix, I also present a semi-formal analysis in Cophonologies by Phase (Sande, Jenks, and Inkelas, 2020), a framework of the phonology-syntax interface, which naturally captures the role of morphological domains in A'ingae stress assignment, while allowing for idiosyncratic stress deletion. Comment and questions are welcome!

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BIBLIOGRAPHY

Alderete, John D. (1999). "Morphologically governed accent in Optimality Theory." PhD thesis. University of Massachusetts Amherst. DOI: 10.4324/9781315054834.

Alderete, John D. (2001). "Dominance effects as Transderivational Anti-Faithfulness." In: *Phonology* 18.2, pp. 201–253. DOI: 10.1017/S0952675701004067.

Dąbkowski, Maksymilian (2019a). "Heavy feet and glottal stops in A'ingae, or The morphophonology of A'ingae lexical stress." Paper presented at the 9th Conference on Indigenous Languages of Latin America. University of Texas at Austin. URL: https://ling.auf.net/lingbuzz/005886.

Dąbkowski, Maksymilian (2019b). "The morphophonology of A'ingae verbal stress." Honors thesis. Providence, RI: Brown University. URL: https://ling.auf.net/lingbuzz/005879.

Dąbkowski, Maksymilian (subm). "Dominance is non-representational. Evidence from A'ingae verbal stress." In: a journal.

Dąbkowski, Maksymilian (in press). "The morphophonology of A'ingae verbal stress." In: *Proceedings of the 38th West Coast Conference on Formal Linguistics*. Ed. by Rachel Soo, Daniel Reisinger, and Katie Martin. Cascadilla Press.

Dąbkowski, Maksymilian (in prep). "Laryngeal feet in A'ingae. Implications for metrical theory." In: *Proceedings of the 39th West Coast Conference on Formal Linguistics*. Cascadilla Press.

Fischer, Rafael and Kees Hengeveld (in press). "A'ingae (Cofán/ Kofán)." In: *Amazonian Languages. An International Handbook*. Vol. 1: *Smaller Language Families and Isolates*. Ed. by Patience Epps and Lev Michael. Handbooks of Linguistics and Communication Science (HSK) 44. Berlin: De Gruyter Mouton.

Halle, Morris and Jean-Roger Vergnaud (1987). *An essay on stress*. Current Studies in Linguistics 15. Cambridge, MA: MIT Press.

McCarthy, John J. and Alan Prince (1993). "Generalized alignment." In: *Yearbook of Morphology*. 12. Springer. URL: https://scholarworks.umass.edu/linguist_faculty_pubs/12.

Prince, Alan and Paul Smolensky (1993). "Optimality Theory: Constraint interaction in Generative Grammar." In: *Rutgers Optimality Archive*. ROA-101. URL: http://roa.rutgers.edu/.

Repetti-Ludlow, Chiara, Haoru Zhang, Hugo Lucitante, Scott AnderBois, and Chelsea Sanker (2019). "A'ingae (Cofán)." In: *Journal of the International Phonetic Association: Illustrations of the IPA*, pp. 1–14. DOI: 10.1017/S0025100319000082.

Sande, Hannah, Peter Jenks, and Sharon Inkelas (2020). "Cophonologies by Ph(r)ase." In: *Natural Language & Linguistic Theory*, pp. 1–51.

APPENDIX

ANALYSIS. I analyze A'ingae stress in Cophonologies by Phase (CBP; Sande, Jenks, and Inkelas, 2020). CBP allows for the association of particular phonological processes to syntactic domains as well as individual morphemes.

I propose that the verbal inflectional domain is a syntactic domain. In CBP, syntactic domains undergo cyclic phonological evaluation. So first, the verbal inflectional domain is evaluated, and only then the predicate domain undergoes evaluation.

I propose that stress is not assigned within the *verbal inflection domain*, but underlying stress is also not deleted. I formulate the rule informally in (13).

(13) VERBAL INFLECTIONAL DOMAIN
Retain preexisting stress but do not assign new stress.

When the *predicate domain* is evaluated, preexisting stress is again retained, but if there is no preexisting stress, stress is assigned to the right edge of the previously evaluated chunk, i. e. the last syllable of verbal inflectional domain (14).

(14) PREDICATE DOMAIN
If no stress is present, assign stress to the right edge of the inner domain.

Here, I will demonstrate how the stress assignment principles in the two domains interact. Stress is not assigned inside the inflectional verbal domain. Then, at the level of the predicate, stress is assigned to the last syllable of the previously spelled-out domain, i. e. the inflected verb (15).

(15)
{ { *panza -ji* $_{verb}$} *-'fa -ya* $_{pred}$}
{ *panzaji* *-'fa -ya* $_{pred}$}
panzají'faya
hunt -PRCM -PL -IRR

But lexical stress is normally preserved when the verbal inflectional domain is evaluated, as well as when the predicate domain is evaluated (16).

(16)
{ { *áfa* *-ji* $_{verb}$} *-'fa -ya* $_{pred}$}
{ *áfaji* *-'fa -ya* $_{pred}$}
áfaji'faya
speak -PRCM -PL -IRR

Additionally, I observe that A'ingae stress is never word-final. I propose that this is due to nonfinality, which prevents stress from being assigned to the last syllable (17).

(17) STRESS NONFINALITY
Stress is never word-final.

This derives the penultimate default stress in the absence of predicate-level suffixes. First, the verbal inflectional domain is evaluated. The output of the evaluation is a stressless form. Then, the predicate domain is evaluated. Stress assignment targets the right edge of the verbal inflectional domain. Normally, stress would be assigned to the last syllable of that domain, here represented with angle brackets ⟨ ⟩. However, that would violate nonfinality, so stress is instead assigned one syllable to the left, deriving the default penultimacy (18).

(18)
{ { *panza -ye -ji* $_{verb}$} $_{pred}$}
{ *panzaye⟨ji⟩* $_{pred}$}
panzayéji
hunt -PASS -PRCM

Finally, stress-deleting—or *dominant*—suffixes delete preexisting stress (19).[2] This phonological rule is specific to particular morphemes and not predictable from the morphosyntactic structure.

(19) DOMINANT SUFFIX
Delete existing stress.

2 Stress deletion (dominance) is can be formalized with the constraint ANTIMAXSTRESS, which penalizes faithfulness to stress (Alderete, 1999), or with the markedness constraint *STRESS, which penalizes stress in the output.

When a dominant, stress-deleting suffix is present, preexisting stress is deleted, and then stress is assigned to the last syllable of the inflectional verbal domain (20).

(20)

{ {	*áfa*	*-ye*$_{\emptyset\ verb}$ }	*-ʼfa -ya* $_{pred}$ }
{	*afaye*		*-ʼfa -ya* $_{pred}$ }
	afayéʼfaya		
	speak -PASS		-PL -IRR