

## Phonologically non-optimizing prosodic faithfulness in Nobiin

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Introduction: This paper presents novel data from Nobiin (ISO 639-3, *fi*), an underdocumented Nilo-Saharan language spoken in southern Egypt and northern Sudan. In certain Nobiin speech contexts, a consonant is epenthesized at specific morpheme boundaries, surfacing as either [r] or [l], depending on the morphosyntactic context. In some cases, these epenthetic consonants resolve vowel hiatus that arises at word boundaries. Interestingly, in other cases, this epenthesis is phonologically non-optimizing, resulting in a surface consonant cluster. This patterning is analyzed here as stem-syllable alignment, such that consonants are inserted to maintain alignment between the right edge of a morphological stem and the right edge of a syllable.

The Data: The example in (1) shows that epenthetic [r] surfaces between a noun stem and a following possessive suffix, whereas epenthetic [l] surfaces before a vowel-initial predicate.<sup>1</sup>

- (1) kaba-(r)-anní            (l)-ad̥zaw-ra  
      food-(EC)-1SG.POSS (EC)-delicious-PRED  
      ‘My food is delicious.’

Replacing either of these epenthetic consonants (EC) with the other is ungrammatical (\*kaba-l-anní r-ad̥zaw-ra). In both cases of optional epenthesis in (1), vowel hiatus is avoided. However, this is not always the case; the examples in (2) reveal that the same optional epenthesis occurs at the same morphosyntactic boundaries in C#\_V environments. In other words, both [r] and [l] are optionally inserted even when their presence on the surface does not resolve vowel hiatus. In these cases, epenthesis results in a surface consonant cluster.

- (2) a. mug-(r)-anní  
      dog-(EC)-1SG.POSS  
      ‘my dog’  
      b. man mug (l)-aʃri-a  
          DEM dog (EC)-beautiful-PRED  
          ‘That dog is beautiful.’

The data suggests that the epenthetic consonants make no morphological or semantic contributions; this is confirmed by the metalinguistic intuitions of the native speaker. Rather, epenthesis appears to be a purely phonological phenomenon that occurs with relatively fast, casual speech but not in more careful speech.

Analysis: I analyze this phonologically non-optimizing epenthesis as an instance of stem-syllable alignment (similar to that suggested by Kiparsky, cited in Inkelas (2014, p. 285)). When an underlying coda consonant would be syllabified as the onset of a following V-initial morpheme, consonants are epenthesized to prevent this, ensuring that the right edge of the stem morpheme aligns with the right edge of a syllable.

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<sup>1</sup>Interestingly, both [r] and [l] are otherwise illicit word-initially in Nobiin.

- (3) ALIGN(STEM, R,  $\sigma$ , R): Assign one violation for each stem whose right edge is not aligned to the right edge of a syllable.

This stem-syllable alignment outranks the markedness constraint against consonant clusters, \*CC, as well as the faithfulness constraint that militates against epenthesis, DEP, as shown in Table 1.

/mug-anní/	ALIGN(STEM, R, $\sigma$ , R)	*CC	DEP
a. mu.gan.ní	*!		
☞ b. mug.ran.ní		*	*
<hr/>			
/mug aʃria/			
a. mu.gaʃ.ri.a	*!		
☞ b. mug.laʃ.ri.a		*	*

Table 1: Consonant Epenthesis

This data set is compatible with a Cophonologies by Phase analysis (Sande et al., Submitted), in which some morphemes are associated with a unique phonological constraint ranking, and the phonology is applied at each syntactic phase boundary. I assume that the identity of the epenthetic segment is determined by the relative rankings of \*r and \*l in the grammars associated with morphemes in different syntactic positions.

Implications: This analysis proposes that consonant insertion at various morpheme boundaries is motivated by a preference for morpheme boundaries and syllable boundaries to coincide. I posit an alignment constraint (McCarthy and Prince, 1993) to enforce this stem-syllable alignment, and propose that morpheme-specific cophonologies can predict the identity of the epenthetic consonant in a Cophonologies by Phase framework. Ongoing work further investigates epenthesis at varied morphosyntactic boundaries, aiming to determine which boundaries call for which epenthetic consonants (/l/ or /r/), and also which boundaries disallow epenthesis entirely in both C#\_V and V#\_V environments. Future work also investigates the rate at which variable epenthesis occurs, in order to inform models that predict not only the identity and position of the epenthetic consonant but also the frequency with which it surfaces. This work contributes to the broader discussion on the interaction between phonological processes and morphosyntax, showing that a phonologically non-optimal consonant cluster surfaces when the stem and syllable boundaries would otherwise be misaligned, and that the identity of the consonants in this cluster is entirely dependent on morphosyntactic structure rather than on any phonological considerations.

## References

- Inkelas, Sharon. 2014. *The interplay of morphology and phonology*, volume 8. Oxford University Press.
- McCarthy, John J, and Alan Prince. 1993. Generalized alignment. In *Yearbook of morphology 1993*, 79–153. Springer.
- Sande, Hannah, Peter Jenks, and Sharon Inkelas. Submitted. Cophonologies by ph(r)ase .