**Introduction**

Doubly conditioned alternations: both a morphologically specific and a lexically specific condition must be met for an alternation to surface. Predicted locality restrictions on conditioning factors:
- Both triggers are stem- or word-level (Lexical Phonology, Kiparsky 1982; Stratal OT, Bermúdez-Otero 1999, Kiparsky 2000, 2008)
- Both triggers introduced within the same syntactic phase domain (Phase-based spell-out, Embick 2010; Cophonologies by Phase CBP, Sande & Jenkins 2018, Sande 2019)

Suppletive allomorphy is outwardly conditioned by (adjacent) syntactic features and inwardly conditioned by (adjacent) phonological content (Distributed Morphology, cf. Bobaljik 2000).

An apparent exception: We examine data from Amuzgo (Otoc-Maranáu, southern Mexico), where lexical inflection class and first-person features appear to jointly condition phonological alternations (Kim 2019a), despite being introduced in different phase domains.

**Tonal evidence for phase boundaries**

- Data: variety of San Pedro Amuzgos, Otucaxa, as documented by speaker Fermín Tapia Garcia and analyzed by Kim (2016, 2019ab).
- 8 Lexically contrastive tones (Smith-1982).
- Most Amuzgo verb stems are monosyllabic and inflect for person and number via mutations in vocalic, glottalized, vowel, and tone.
- Lexical tone surfaces in 3sg, but is overwritten in 1sg & 2sg. There are at least 10 apparent tonal infixation classes (Kim 2016).

**Glossotat facts**

Amuzgo allows six possible syllable rimes; the only possible rima is a glide stop (Kim 2019a).

<table>
<thead>
<tr>
<th>Class 4</th>
<th>AV</th>
<th>CV</th>
<th>A</th>
<th>V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-laryngealized</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
</tr>
<tr>
<td>Laryngealized</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
</tr>
</tbody>
</table>

For all persons, there seems to be a ban on final glottalization in first person contexts, including classes 4 & 5, which surface with final glottalization in other forms (Kim 2019a).

These two classes show different repairs to final glottals in first-person contexts:
- Class 4 shows a glottalization metathesis in few cases, while Class 5 shows apparent final vowel epenthesis.

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Unlike for tonal alternations, causative does not block the glottalization alternations associated with persons: the Class 4 & 5 difference remains in derived causative forms, illustrated in (1.a,b).

- a. *k∗-nhɛ*-ʔam
  - cf. 3sg. *k*-nhɛ*-ʔam*
  - CAUS-begin.CPL ‘begin something, 1sg, complete’
- b. *k*-nhɛ*-ʔam
  - cf. 3sg. *k*-nhɛ*-ʔam*
  - CAUS-unify.CPL ‘unify, 1sg, complete’

Lexical-inflection-class features of the stem and 1st person features in AGR appear to jointly condition the shape of the surface form.

- Kim (2019a) analyzes this lexical and morphological conditioning of glottalization alternations as a co-phonology sensitive to the presence of more than one morpheme (along the lines of Sande 2019).

- However, note that lexical roots and class information are introduced lower in the structure [V or VV than lexical features (AGR). (See tonal evidence for Voiceless as a phase boundary.)

Structure of an Amuzgo causative:

**Analysis**

Solution:

We propose the Amuzgo glottalization facts not as double conditioning, but rather as a single morphological trigger (first person) associated with a co-phonology that disperses final glottal stops.

Noting that lexical glottalization classes in Amuzgo never have a morphophonemic or semantically motivated alternation.

- Class 4 are underlying /CV/ (Laryngealized)

- Class 5 are /CV/(Non-laryngealized)

The CBP-style 1st person vocabulary item (mapping morphophonological to phonological contents), given in (2), is not associated with an underlying phonological form (F) or prosodic content (P), but is associated with a phonological sub-grammar, or co-phonology (R).

<table>
<thead>
<tr>
<th>Person</th>
<th>1sg</th>
<th>2sg</th>
<th>3sg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg</td>
<td>NoCoDa</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Max</td>
<td>NoCoDa</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Linlty</td>
<td>Max</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>MPR</td>
<td>Max</td>
<td>P</td>
<td>P</td>
</tr>
</tbody>
</table>

Following Kim (2019a: 266-267), we propose that in first person contexts only one a ban on words ending in a glottal stop.

This provides a unified account of the behavior of first person forms across all five lexical classes of verbs.

- In non-first person contexts, the default ranking of Max, Def, Linlty >> MPR, NoCoDa will apply.

**Class 4 Derivation**

1. Voice evaluation for “Class 4” /-s/-ʔa/-: Default ranking applies and the faithful [s/-ʔa/-] is optimal.

2. The optimal output of the phase [//s/-ʔa/-] is the input to the CP phase with 1s/2s/3s ranking.

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</tr>
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</tbody>
</table>

**Class 5 derivation**

1. Voice evaluation for “Class 5” /-s/-ʔa/-: Default ranking applies and the faithful [s/-ʔa/-] is optimal.

2. The optimal output of the phase [//s/-ʔa/-] is the input to the CP phase with 1s/2s/3s ranking.

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<tr>
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<th>2sg</th>
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**Implications and remaining questions**

Amuzgo demonstrates that putative morphological and lexical conditioning of doubly conditioned processes must be examined in morphosyntactic context.

- Prediction: True doubly morphologically conditioned phonology, triggered by a lexical item or class and a morpheme, can only occur when the two are in morphologically motivated or semantically motivated phase domains.

- In other apparent cases of doubly morphologically conditioned phonology, interactions across phase boundaries will necessarily involve novel co-phonological operations and constraints, with differences across lexical items attributable to differences in URs.

- For the Amuzgo causative of CBP which guides learners in using morphosyntactic information to resolve otherwise ambiguous divisions of labor across the morphology-phonology interface.

**Why CBP?**

- CBP accounts for a wide variety of morphophonological processes, including complex effects (Sande & Jenkins 2018) and word effects (Sande 2019).

- Because of the separate components of the CP in CBP, multiple types of double conditioning are predicted:
  - Interactions ranking (R-R) (Sande 2019)
  - A morpheme-specific ranking interacting with an underlying form (R-F).

- Here we provide a concrete example of the latter type, and provide diagnostics to distinguish R-R from R-F.

**Broader consequences:**

- Similar cases potentially arise in any language, and there may be other cases where lexical classes defined over phonologically scaled patterns of stem alternations. Future work on morpheme-specific patterns that differ across lexical classes should investigate the morphophonology of the construction to determine whether a phase boundary intervenes between conditioning factors.

- Remaining question: Buch (2000) describes some uncertainty among speakers about whether some words pattern like Class 4 versus Class 5.

- A single word can be produced with multiple possible 1st forms: 3sg [-ʔa/-] make an ‘excess’ corresponds to [-ʔa/-](-[ʔa/-]) under the account where classes 4 and 5 are simply the result of different underlying representations. What could be the result of this variation?

- Uncertainty in UR due to little definition of forms of the paradigm.

- A weak underlying final voice in “Class 5” /CVV/ (as per Gradient Symbolic Representations (Smolensky and Goldrick 2016))

**Selected References**

Kim, Yun. 2015. Intra- and inter-linguistic morphological reanalysis of Amuzgo. In L. F. Aprile & J. L. D. Otero (ed.), Voice and phase evaluation for “Class 4” /-s/-ʔa/-: Default ranking applies and the faithful [s/-ʔa/-] is optimal.

Sande, Hannah 2019. A diachronically conditioned phonological paradigm: Evidence from Guidlian, Language and Linguistics. 43:

**Acknowledgements**

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