1. Chamorro vowel distribution

- Mid vowels in Chamorro only occur in closed stressed syllables (4,5,14).

<table>
<thead>
<tr>
<th>High vowels</th>
<th>Mid vowels</th>
</tr>
</thead>
<tbody>
<tr>
<td>[gʊ.pu]</td>
<td>‘fly’</td>
</tr>
<tr>
<td>[g.ʊ.l]</td>
<td>‘worm’</td>
</tr>
<tr>
<td>[l.ɪ.ʔ]</td>
<td>‘see’</td>
</tr>
<tr>
<td>[pʊ.kʊ]</td>
<td>‘bump’</td>
</tr>
</tbody>
</table>

- Stress shift triggers alternations, both raising and lowering:

| [mɛt.gʊt] | [mɛt.gʊt.na] | stronger       |
| [pʊ.kʊ]    | [pʊ.kʊ.na]    | ‘his/her bump’ |

2. Exceptionality of mid vowels before laryngeals

- Some mid vowels exceptionally occur in stressed open syllables in the native vocabulary.

<table>
<thead>
<tr>
<th>Mid before laryngeal consonant</th>
<th>Mid before oral consonant</th>
</tr>
</thead>
<tbody>
<tr>
<td>[bʊ.ʔan]</td>
<td>‘broth’</td>
</tr>
<tr>
<td>[tɛ.ʔuk]</td>
<td>‘thick’</td>
</tr>
<tr>
<td>[dɛ.ʔa]</td>
<td>‘see’</td>
</tr>
</tbody>
</table>

- An observation: before laryngeals, mid vowels are more common than expected [5,12]; is this just chance?

3. Evidence for perceptually motivated licensing

- Proposal: Laryngeals permit a wider range of vocalic contrast due to the persistence of vowel formant information.

- Vowel formants persist through the laryngeal, providing longer vowel steady state and transition information as perceptual evidence.

- Glottal stop realized as creaky voice-word-medially.

- Distinctiveness of contrasts captured through constraints referencing perceptual distance between formants in positional inventories (7,11).

- Assign F1 levels relative to vowel height: \( i = 1, e = 2, o = 3 \) (7)

- Mindist:F1:2 – Assign a violation if distance between F1 levels is \( \leq 2 \)

- NoMerge – Assign a violation for every pair of merged vowels

- Periph – Assign a violation for every non-peripheral vowel (10)\( e \)j

- Perceived F1 contrasts better signaled with longer formants

- Formant length scales perceptual distance between formants: laryngeals multiply by 1.5, oral consonants multiply by 1.

4. Against an exceptional coda hypothesis

- Mid vowels in stressed open syllables are not just the result of intervocalic consonants being syllabified as codas (10); here’s why.

- The C of certain –CV suffixes geminate when a word has a closed stressed syllable, and a word-final open syllable (4,5,14)

- Gemination does not trigger for forms with a stressed mid vowel before an intervocalic consonant.

- Vowel forms do not persist through oral consonants:

- High vowels in stressed open syllables become a major puzzle if this hypothesis is adopted.

CONCLUSION:

- Reference to phonetic cue information allows a cohesive account of patterned exceptionality in Chamorro

- Other approaches, such as licensing by cue [13], may be equally effective, but still maintain integration of perceptual factors within the phonological system

- A purely phonological account of exceptionality is possible, a la [8], but not as effective for this case due to a lack of evidence for a unique diachronic pathway to explain lexical categorization [3]

- Neither there is a word loan influence conditioning a separate stratum that exceptional forms occupy, a la [9]

Si Yu’us ma’ås’i!”

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