Conspiracies and morphophonological (a)symmetry

In Axininca, an Arawakan-Campa language of Peru (Payne 1981, Spring 1990, McCarthy & Prince 1993a), there are distinct vowel hiatus and consonant cluster resolution strategies at prefix-stem and stem-suffix boundaries to enforce the language’s relatively strict CV syllable structure. Under prefixation, both /V+V/ and /C+C/ sequences suffer deletion of the first vowel or consonant, as shown in (1a). Under suffixation, these same sequences undergo epenthesis of a consonant or vowel, as shown in (1b). Because prefixation and suffixation induce different outcomes, I refer to the pattern in Axininca as morphologically asymmetrical. Because both vowel hiatus and consonant clusters undergo the same resolution strategies, I also refer to the Axininca pattern as phonologically symmetrical.

In this talk I propose an analysis of the morphological asymmetry and phonological symmetry of the Axininca pattern that captures significant generalizations about both of these important aspects of the pattern. The foundation of the analysis is that the observed morphological asymmetry is due to a conspiracy (Kisseberth 1970, Pater 1999). The driving forces behind the deletion and epenthesis processes are the syllable structure constraints ONSET and NOCODA (2a), which must dominate the faithfulness constraints MAX and DEP (2b). Deletion of the first of two vowels or consonants is preferred to epenthesis under prefixation due to the ranking DEP >> MAX (3), but the otherwise dispreferred epenthesis process is pressed into service under suffixation in order to avoid violation of a constraint against deletion of stem as opposed to affix material, SA-MAX (along the lines of Benua 1997), under the ranking SA-MAX >> DEP >> MAX (4). Note that SA-MAX is not in danger of being violated under prefixation, where deletion of the first of two vowels or consonants always results in deletion of affix material, not stem material. This explains the morphological asymmetry of the Axininca pattern.

The phonological symmetry of the Axininca pattern is captured by the fact that none of the constraints distinguishes consonants from vowels, except ONSET and NOCODA. Thus, no ranking of the constraints can force one resolution strategy for hiatus and another for clusters in the same context. Hiatus resolution can coexist with tolerance of clusters or vice-versa, but if both potential hiatus and potential clusters are resolved, they must be resolved in the same way as they are in Axininca.

The proposed analysis depends crucially on the observation that systematic deletion of the first of two vowels or consonants is far more common than systematic deletion of the second, which tends to occur only in specific contexts like suffixation (Casali 1997, Wilson 2001). Casali interprets the cross-linguistic preference for first vowel deletion as evidence for a positional faithfulness constraint MAX-INIT, penalizing deletion of morpheme-initial segments. Undominated MAX-INIT together with SA-MAX thus ensures that deletion of the second of two vowels or consonants is blocked across the board in Axininca, allowing epenthesis rather than deletion in the affix to step in under suffixation. The opposite ranking of MAX-INIT and DEP accounts for the pattern of hiatus resolution found in Chichewa (Casali 1997), in which the first of two vowels deletes under prefixation but the second deletes under suffixation.

The proposed analysis is compared with two likely alternatives, each of which fails in ways that the proposed conspiracy analysis does not. One of these alternatives makes use of separate prefixation and suffixation levels, with different rankings of MAX and DEP at each level to account for the different strategies found in each of these contexts (McCarthy & Prince 1993a). This analysis captures the phonological symmetry of the Axininca pattern in much the same way as the proposed conspiracy analysis, but it fails to reveal anything significant about the pattern’s morphological asymmetry since there are no inherent restrictions on how the two levels may differ from each other. In any event, a constraint identical in function to SA-MAX is needed to compete with MAX-INIT and to provide for deletion of the second of two vowels or consonants under suffixation in languages like Chichewa, obviating the apparent need for levels in the analysis of the Axininca pattern. The other alternative is another take on the conspiracy analysis, using a morphophonological alignment constraint (McCarthy & Prince 1993b) instead of SA-MAX. Because of its necessary reference to a prosodic edge, neither left-edge alignment nor right-edge alignment of stems and syllables is able to account for the phonological symmetry of the Axininca pattern. This is because in the CV syllables that result from deletion or epenthesis, the consonant is at the left edge of the syllable and the vowel is at the right edge. As a consequence, no single alignment constraint can account for both vowel hiatus and consonant cluster resolution in the Axininca pattern.

I conclude with a discussion of some positive typological predictions made by the proposed analysis.
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Data, Constraints and Tableaux

(1) Axininca consonant cluster and vowel hiatus resolution
   (’p[ = prefix-stem boundary, ’s = suffix-stem boundary)
   a. Deletion under prefixation
      i. \( /p[p \{ r \{ p \{ saik \}^{i}, i \}^{s} / \{ i.ai,ki \} \) ‘will sit’
      ii. \( /p[p \{ no \{ p \{ ana \}^{i}, ni \}^{s} / \{ na,na,ni \} \) ‘my black dye’
   b. Epenthesis under suffixation
      i. \( /p[p \{ no \{ p \{ ñi,ik \}^{i}, wai \}^{i}, i \}^{s} / \{ no,ñi,ka,wa,ti \} \) ‘I will continue to cut’
      ii. \( /p[p \{ i \{ p \{ no \{ p \{ ñi,ik \}^{i}, wai \}^{i}, i \}^{s} / \{ i,ko,ma,ta,ko,ti \} \) ‘he will paddle for’

(2) Basic constraints
   a. Syllable structure
      i. ONSET — syllables must begin with consonants.
      ii. NOCODA — syllables must end in vowels.
   b. Faithfulness
      i. MAX — input segments have output correspondents.
      ii. DEP — output segments have input correspondents.

(3) Deletion under prefixation: \( \text{DEP} \gg \text{MAX} \)

<table>
<thead>
<tr>
<th>Input: ( \ldots V_{1} { p { V_{2} \ldots \ldots C_{1} { p { C_{2} \ldots )</th>
<th>\text{ONSET} / \text{NOCODA}</th>
<th>\text{DEP}</th>
<th>\text{MAX}</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ( \ldots V_{1} { p { V_{2} \ldots \ldots C_{1} { p { C_{2} \ldots )</td>
<td>\text{* !}</td>
<td>\text{</td>
<td>}</td>
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<tr>
<td>b. ( \ldots C_{1} { p { C_{2} \ldots )</td>
<td>\text{* !}</td>
<td>\text{</td>
<td>}</td>
</tr>
<tr>
<td>c. ( \ldots ò_{1} { p { C_{2} \ldots )</td>
<td>\text{</td>
<td>}</td>
<td>\text{*}</td>
</tr>
</tbody>
</table>

(4) Epenthesis under suffixation: \( \text{SA-MAX} \gg \text{DEP} \gg \text{MAX} \)

<table>
<thead>
<tr>
<th>Input: ( \ldots V_{1} { ñ, V_{2} \ldots \ldots C_{1} { ñ, C_{2} \ldots )</th>
<th>\text{ONSET} / \text{NOCODA}</th>
<th>\text{SA-MAX}</th>
<th>\text{DEP}</th>
<th>\text{MAX}</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ( \ldots V_{1} { ñ, V_{2} \ldots \ldots C_{1} { ñ, C_{2} \ldots )</td>
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References


