Vowel Alternations in Dëne Sųłıné Optative Paradigms: Prosodic Conditioning and Representational Issues

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Dëne Sųłıné (Chipewyan) is an Athabaskan (Dene) language spoken in Alberta, Saksatchewan, Manitoba, and the Northwest Territories, Canada. In the southern Dëne Sųłıné dialects (i.e. excluding Yellowknife/Tets'ot'iné), optative paradigms exhibit an alternation between the vowel a in the 1sg, 3sg, and 3pl forms, and u in the remaining forms. In the dialect of Cold Lake, AB, shown in (1), this alternation is also accompanied by a gh~w alternation of the preceding consonant. A comparison across dialects is given in (2).

(1a) Opt. of hejën ‘sing’, surface forms

<table>
<thead>
<tr>
<th></th>
<th>singular</th>
<th>dual/plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>wasjën</td>
<td>ghújën</td>
</tr>
<tr>
<td>2nd</td>
<td>ghųjën</td>
<td>ghųhjën</td>
</tr>
<tr>
<td>3rd</td>
<td>wajën</td>
<td>hewajën</td>
</tr>
</tbody>
</table>

(1b) Opt. of hejën ‘sing’, underlying forms

<table>
<thead>
<tr>
<th></th>
<th>singular</th>
<th>dual/plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>/ghʷe-s-d-shën/</td>
<td>/ghʷe-hid-d-shën/</td>
</tr>
<tr>
<td>2nd</td>
<td>/ghʷe-ne-d-shën/</td>
<td>/ghʷe-uh-d-shën/</td>
</tr>
<tr>
<td>3rd</td>
<td>/ghʷe-d-shën/</td>
<td>/he-ghʷe-d-shën/</td>
</tr>
</tbody>
</table>

(2) Comparison of optative inflection across dialects (based on Cook 2004)

a. Cold Lake, AB  
   sg  du/pl  sg  du/pl  sg  du/pl
   1st  was  ghú  1st  was  wú  1st  has  hú
   2nd  ghų  ghuh  2nd  wų  wuh  2nd  hų  huḥ
   3rd  wa  hewa  3rd  wa  hewa  3rd  ha  heha

It is well established that the optative prefix was of the shape *ghʷe in Proto-Dene (Krauss 1969: 69-70), i.e. containing a voiced labio-uvular fricative, which Cook (2004: 39-40) has argued is still the underlying form synchronically. It is also well-established that uvular fricatives can trigger lowering from e to a of the following a vowel in Dene languages, a process which Hargus terms “gamma lowering” (Hargus 1988). However, the data in (1) and (2) are problematic in two respects. First, it seems that the underlying segment ghʷ can trigger either raising or lowering of the following vowel, which would suggest that ghʷ is specified for contradictory features, [high] and [low]. Secondly, the environments in which the neighboring vowels raise or lower do not seem to form any sort of natural class, either phonologically or morphologically.

The solution I propose is of two parts. First, I adopt the model of Inherent VPlace Theory (Padgett & Nó Chiosáin 1993), under which the segment ghʷ bears the inherent VPlace feature [low], shared by all uvular consonants, and the distinctive feature [round], so that the features [high] and [back] are inserted automatically, by redundancy rules. Secondly, under a Lexical Phonology model of Dene verb structure (Kiparsky 1982, 1985; Hargus 1988; Jaker 2012), I propose that the conditioning environment for feature spreading is prosodic position at the Inner Stem Level (Level 2): the inherent VPlace feature [low] spreads in the weak position of an iambic foot, and then the distinctive VPlace feature [round] spreads elsewhere. The resulting autosegmental, rule-based analysis successfully accounts for the vowel and consonant alternations in (1) and (2), but involves multiple counterbleeding opacity within a stratum, such
that the analysis cannot be derived, under standard assumptions, within LPM-OT (Kiparsky 2000). This problem, however, arises only if one assumes the modern Dëne Sųłíné vowel qualities, as shown in (1) and (2), i.e. a system consisting of 6 vowels, a, e, i, o, u, ê, all of which are underlyingly short. However, Proto-Athabaskan had an inventory of 7 vowels: four “full” vowels iː, eː, aː, and uː, and three “reduced” vowels ɐ, ə, and ʉ. I show that if one substitutes the original Proto-Athabaskan vowels (with the concomitant length distinction) for the vowels in (1) and (2), the resulting system is perfectly transparent, and compatible with LPM-OT. I conclude, therefore, that the alternations shown in (1) and (2) are ancient, dating from a time when the Proto-Athabaskan vowel system was still intact, but that synchronically, these alternations involve morphologically conditioned allomorph selection.

References:
Hargus, Sharon. 1988. The Lexical Phonology of Sekani. Doctoral Dissertation, UCLA.