Microparametric approach to prosodic variation

Case studies from Algonquian

Natalie Weber (Yale; they/them)
Current working group members

Plains Algonquian
- Blackfoot: Natalie Weber (Yale)
- Cheyenne: Sarah Murray (Cornell); Rachel Vogel (Yale)
- Arapaho: Andrew Cowell (Boulder); Ksenia Bogomolets (Auckland)

Central Algonquian
- Plains Cree: Rose-Marie Déchaine (UBC); Antti Arppe (Alberta); Katherine Schmirler (Alberta)
- Ojibwe: Chris Hammerly (UBC)

Eastern Algonquian: tbd…
Goals of the project

● empirical goals
  ○ synchronic comparison of **phonology** across Algonquian languages
  ○ using **standard diagnostics** (distribution, phonotactics, alternations)
  ○ comparison of **prosodic structure** across languages with similar morphosyntax

● methodological goals
  ○ toolkit of **portable diagnostics** which can be applied to other languages

● theoretical goals
  ○ develop a **theory** of how morphosyntax can map to **prosodic structure**
  ○ by examining **parametric variation** in prosodic structure
  ○ “**micro**” = within a single family with similar morphosyntax
Research questions
Existing research: morphological template

- aimed at language comparison and reconstruction of the Algonquian family

<table>
<thead>
<tr>
<th>[initial]_{stem}</th>
<th>–final</th>
<th>–suffixes</th>
<th>Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>pem</td>
<td>–osee</td>
<td>–wa</td>
<td>Meskwaki</td>
</tr>
<tr>
<td>pim</td>
<td>–ohtee</td>
<td>–w</td>
<td>Cree</td>
</tr>
<tr>
<td>pem</td>
<td>–oohnɛ</td>
<td>–w</td>
<td>Menominee</td>
</tr>
<tr>
<td>pim</td>
<td>–ossee</td>
<td></td>
<td>Ojibwe</td>
</tr>
</tbody>
</table>

*pem  –ohθee  –wa  “he walks along”

(Bloomfield 1946: 111, #269; Goddard 1990)
Existing research: morphological template [Plains Cree]

- template slots named by their positions

<table>
<thead>
<tr>
<th>prefix–</th>
<th>preverbs–</th>
<th>[initial –final]_stem</th>
<th>–suffixes</th>
<th>‘s/he walks along’</th>
</tr>
</thead>
<tbody>
<tr>
<td>sâpo–</td>
<td>pim</td>
<td>–ohtê</td>
<td>–w</td>
<td>‘s/he walks past’</td>
</tr>
<tr>
<td>ki–</td>
<td>sâpo–</td>
<td>pim</td>
<td>–ohtâ</td>
<td>‘you walk past’</td>
</tr>
</tbody>
</table>

(Wolvengrey 2001)
Central questions for this project

1. How does morphological template correspond to prosodic structure?
2. How does prosodic structure vary across languages?
Prosodic structure (prosody)

Definition: how templatic positions group into larger units like **words** and **phrases**

H1 \[
((\text{prefixes} - \text{preverb} - \text{initial} - \text{final} - \text{suffixes})_{\text{P-word}})_{\text{P-phrase}}
\]

H2 \[
(\text{prefixes} - \text{preverb} - (\text{initial} - \text{final} - \text{suffixes})_{\text{P-word}})_{\text{P-phrase}}
\]

H3 \[
(\text{prefixes} - (\text{preverb} - )_{\text{P-word}}(\text{initial} - \text{final} - \text{suffixes})_{\text{P-word}})_{\text{P-phrase}}
\]

- Generalizations hold **across prosodic units** or **at prosodic boundaries**
- Positions within the same prosodic unit should pattern alike

Example argumentation
Focus on the initial and preverb positions [Cheyenne]

- Roots like ame- ‘along’ may occur in multiple positions
- Existing research: preverbs are not prosodically integrated with stem

<table>
<thead>
<tr>
<th>prefix–</th>
<th>preverbs–</th>
<th>[initial]–[final]stem</th>
<th>–suffixes</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>É–</td>
<td>[ame]</td>
<td>–méohe</td>
<td></td>
<td>‘He’s running.’</td>
</tr>
<tr>
<td>É–</td>
<td>amê–</td>
<td>[sóhp]–a'xe]</td>
<td></td>
<td>‘He ran by.’</td>
</tr>
</tbody>
</table>

(Cheyenne dictionary: Fisher et al. 2006)
(Preverbs: Bloomfield 1946: 103; Goddard 1990: 478)
Root in initial position [Cheyenne]

<table>
<thead>
<tr>
<th>pre–preverb–[initial]</th>
<th>–final</th>
<th><em>stem</em></th>
<th>–suf</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>É–</td>
<td>[am]</td>
<td>–a'éno'häme</td>
<td></td>
<td>He is driving along.</td>
</tr>
<tr>
<td>É–</td>
<td>[ame]</td>
<td>–méohe</td>
<td></td>
<td>He’s running.</td>
</tr>
</tbody>
</table>

Alternation: [am-] ~ [ame-] ‘along’
Generalization: Avoid CC and VV sequences between initial and final positions.
<table>
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<th>[initial]</th>
<th>–final</th>
<th>stem</th>
<th>–suf</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>É–</td>
<td>ame–</td>
<td>[é'kots]</td>
<td>–en</td>
<td>–óho</td>
<td>He walks along with his arm around her.</td>
</tr>
</tbody>
</table>

No alternation: [ame-] ‘along’

Generalizations: Right edge of preverb must end in a vowel
Mapping evidence onto prosodic structure [Cheyenne]

- Cheyenne is compatible with H3 (or something like it)

H3 (prefixes–)\textsubscript{P-word} (preverb–)\textsubscript{P-word} (initial –final –suffixes)\textsubscript{P-word} \textsubscript{P-phrase}

- no CC or VV throughout word
- must end in V
Different predictions for different structures

- Generalizations hold **across prosodic units** or **at prosodic boundaries**
- Prediction: all P-words have the same generalizations

$$H_3 \ (\text{prefixes} - \ (\text{preverb} - \text{P-word}(\text{initial} \ - \text{final} \ - \text{suffixes})\text{P-word}) \text{P-phrase})$$

- restrictions on left/right edges
- minimal size constraints
- stress or tonal processes
- vowel harmony
- etc.
Different predictions for different structures

- Generalizations hold **across prosodic units** or **at prosodic boundaries**
- Prediction: all P-words have the same generalizations

\[
H2 \text{ (prefixes– preverb– (initial –final –suffixes)\text{P-word})}_P\text{-phrase}
\]

- irregular phonology at edges (morphophonology)
- no minimal size constraints
- no distinct phonological processes

- restrictions on left/right edges
- minimal size constraints
- stress or tonal processes
- vowel harmony
- etc.
Preliminary findings
Variation in prosodic structure

- Some languages compatible with:
  - H2 (Blackfoot)
  - H3 (Ojibwe, Plains Cree)*
  - uncertain (Cheyenne, Arapaho)

H2 (prefixes– preverb– (initial –final –suffixes)\textsubscript{P-word})\textsubscript{P-phrase}

H3 (prefixes– (preverb–)\textsubscript{P-word}(initial –final –suffixes)\textsubscript{P-word})\textsubscript{P-phrase}

*known from previous research, but so far confirmed by our project
(Branigan et al. 2005; Russell 1992, 1999; Newell & Piggott 2014; Piggott & Travis 2013; Lochbihler 2017)
Different phonological processes at a single position

- All languages have evidence for a prosodic boundary between preverb-stem
- Different processes! Incomplete list:

1. [i]-epenthesis
   - Left edge of stem (Blackfoot)
   - Right edge of preverb (Plains Cree, Ojibwe, Cheyenne)

2. Opaque vowel coalescence (Blackfoot, Plains Cree)

3. (Optional?) devoicing (Cheyenne)
Single phonological process at different boundaries

Example: [t] ~ ∅ alternation

- **after person prefix** (Bloomfield 1946: 95; Bogomolets *forthcoming*)
  - yes = Plains Cree, Ojibwe
  - no = Blackfoot, Arapaho, Cheyenne

- **after initials**
  - yes = Cheyenne  [t] before {a,o}, ∅ before {e}
  - yes = Plains Cree  (limited set; e.g. initial pêt- vs. preverb pê- ‘hither’)
  - no = Blackfoot, Plains Cree, Ojibwe, Arapaho, Cheyenne

(Cowell & Moss 2008; Frantz 2017; Leman 2011; Wolfart 1973; Valentine 2001)
Structure of session

“Datablitz” session (10 minutes per language)

● Block 1
  ○ Overview
  ○ Blackfoot
  ○ Q&A

● Block 2
  ○ Ojibwe
  ○ Plains Cree
  ○ Q&A

● Block 3
  ○ Arapaho
  ○ Cheyenne
References


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