How much variation within one dialect?

Non-permanent consonants in Káínai Blackfoot

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Overview and aims

- **Examine** speaker variation within a single dialect.
- **Create** a mini-corpus with eight speakers (language documentation).
- **Describe** variation in consonant deletion at the right edge of nouns.
- **Discuss** differences between language descriptions and the variation in the mini-corpus.
- **Suggest** best practices for culturally appropriate elicitation.
Roadmap of the talk

1. Location and dialects
2. Data
3. Corpus study
4. Experiment
   3.1 Methods
   3.2 Results
5. Discussion
Location and dialects
Blackfoot (ᓱᖽᐧᖿ) language location

- map = pre-settler contact
- southern Alberta, northern Montana
- westernmost Algonquian language
- “Plains Algonquian” (areal group)
  - w/ Cheyenne, Arapaho

(Frantz 2017; Goddard 1975; Mithun 1999: 336–337)

Map by Eric Leinberger
Four Blackfoot Nations

• Blackfoot Confederacy (Siksikaiitapi) of four nations
• share language, culture, history

1. Siksiká (Blackfoot)
2. Káínai (Blood)
3. Aapátohsipikani (Peigan, or Northern Peigan)
4. Aamsskáápipikani, or Piikúnni (Blackfeet, or Southern Piegan)

(Dempsey, 2019; Grinnell, 1892: 153; Juneau, 2007: 13ff)
Dialects and variation

• Each Nation associated with a distinct dialect (salient to speakers).

• Some documented differences between the four dialects (Frantz 2017; Frantz & Russell 2017; Miyashita & Chatsis 2013; Taylor 1969).

• But the extent of variation within each dialect remains understudied (Peter 2014; Weber & Miyashita forthcoming).

• This talk: qualitative study of variation in Káínai Blackfoot.
  • ”non-permanent consonants” at the right edge of noun stems
Data
Nominal classes

- two inflectional classes (grammatically (in)animate)
- different number suffixes; agreement on demonstratives and verbs

<table>
<thead>
<tr>
<th>Case</th>
<th>Animate</th>
<th>Inanimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>sg.</td>
<td>anná</td>
<td>anní</td>
</tr>
<tr>
<td>pl.</td>
<td>annííksi</td>
<td>anníístsi</td>
</tr>
<tr>
<td>indef. (Frantz 2017)</td>
<td>si’kááni</td>
<td>apasstááni</td>
</tr>
<tr>
<td>indef. (dialectal)</td>
<td>si’kááán</td>
<td>apasstááán</td>
</tr>
</tbody>
</table>

Non-permanent consonants

• An $m$, $n$, or $s$ at the right edge of some nouns deletes before certain suffixes.

<table>
<thead>
<tr>
<th>Singular</th>
<th>Gloss</th>
<th>Plural</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ponopaa\textit{n}-i</td>
<td>‘quiver’</td>
<td>o-nnopáán-\textit{i}tsi</td>
<td>‘his quivers’</td>
</tr>
<tr>
<td>b. mottoksiína\textit{nn}-i</td>
<td>‘thigh’</td>
<td>n-ottoksiína\textit{nn}-\textit{istsi}</td>
<td>‘my thighs’</td>
</tr>
<tr>
<td>c. maotoyóópa\textit{n}-i</td>
<td>‘rye grass’</td>
<td>maotoyóópa-\textit{i}tsi</td>
<td>‘rye grasses’</td>
</tr>
</tbody>
</table>

(\textit{Frantz 2017: 12; Frantz & Russell 2017 = FR})
Research question and hypothesis

• What conditions non-permanency of stem-final consonants?

• Hypothesis: final stem shape
  • ponopaa\_n-i ‘quiver’ stem-final VVC
  • mottoksíína\_nn-i ‘thigh’ VCC
  • maotoyóóóp\_n-i ‘rye grass’ VC

• Methods: corpus study, experiment
Corpus study
Methods

• Most recent dictionary (Frantz & Russell 2017)
• Contains 1,800 noun entries (out of 5,179 total)
  • Information in entries has a fairly uniform order
  • Information extracted into a .csv file by script*
  • Coded for final stem shape and other factors

• Final corpus: 657 nouns
  • only entries which included a plural example
  • only stems which end in \( n, m, \) or \( s \)
  • if there are two variants given for plurals, treated these as separate entries

*Huge thanks to Sarah Babinski for creating the script!
Sample from Frantz & Russell (2017)

maotoyóópan-i = singular form
non-permanent consonant!

maóó nin; mouth; maoówaawaistsi their mouths; naoóyi my mouth.
maotoyóópan nin; rye grass (tall grass); maotoyóópaistsi rye grasses.
máóto’kiiksi nan; Buffalo women’s society (plays a crucial role preparatory to the Ookaan of the Sundance); dialect var. máóoto’kiiksi.
máó’k adt; why; máo’kawaasai’niwa? why is she crying?
kimáo’kanihtsiksi kááhkakhkayssi? why did you say that you wanted to go home?; (So. Peigan dialect).
mao’tooko nin; ditch; iipíttaniao’tookoyi deep ditch.
matako nin; previous evening.
matápii nan; person/ eye pupil; matápiiksi people/ pupils; see niitsítapii aboriginal person.

no plural in entry
Stem shape determines non-permanency

- VC: very *common*
- VVC, VCC: very *rare*

<table>
<thead>
<tr>
<th>Stem shape</th>
<th>Non-permanent / Total</th>
<th>% of entries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>340 / 657</td>
<td>51.750%</td>
</tr>
<tr>
<td>Final short V + C</td>
<td>328 / 363</td>
<td>90.358%</td>
</tr>
<tr>
<td>Final long VV + C</td>
<td>10 / 212</td>
<td>4.717%</td>
</tr>
<tr>
<td>Final CC</td>
<td>2 / 82</td>
<td>2.439%</td>
</tr>
</tbody>
</table>
Summary

• Non-permanency is not an arbitrary feature of each noun
• Conditioned by the length of the stem-final vowel and consonant
• To be tested with an experiment...
Why conduct an experiment?

• Dictionaries are abstractions over multiple dimensions
  • Speaker demographics
    • Dialects
    • Age
    • Gender
    • etc.
  • Phonetic variation (orthography is conservative)
  • Authors’ analysis of conservative Blackfoot (perhaps no longer spoken)

• Some entries list plurals with and w/o final consonant

• Variation within and between dialects is understudied

(Frantz 1978; Genee 2020)
Experiment

Methods
Phases

• **Phase 1** (pilot; fall 2016)
  - Developed a wordlist with Natalie Creighton (NC)
  - (slightly different list than Phase 2)

• **Phase 2** (summer 2017)
  - Recorded the finalized wordlist of 50 words
  - Seven speakers of the Káínai dialect
  - (two partial recordings with speakers of other dialects; not included here)
Participants

• **n = 8** (4 male, 4 female)

• ages: between 50 and 70 at time of recording

• from: all residents of the Káínai Blackfoot reserve

• fluency: all are fluent Blackfoot speakers

• bilingualism: English-dominant bilinguals; daily use of English

• other: several are teachers of the Blackfoot language
Materials

• 50 noun stems ending in *m*, *n*, or *s* divided among three stem shapes

<table>
<thead>
<tr>
<th>Stem shape</th>
<th>Count</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Final short V + C</td>
<td>20</td>
<td>miistsis-a ‘tree’</td>
</tr>
<tr>
<td>Final long VV + C</td>
<td>16</td>
<td>si’kaan-a ‘blanket’</td>
</tr>
<tr>
<td>Final CC</td>
<td>14</td>
<td>maminn-i ‘wing’</td>
</tr>
</tbody>
</table>
Procedure: Initial instructions

• Speakers asked to produce each word in a frame sentence twice.
  • Avoids phrase-final devoicing effects (Windsor 2017)
  • Demonstrative avoids bare nouns

<table>
<thead>
<tr>
<th>Frame:</th>
<th>‘I saw’</th>
<th>that/those</th>
<th>[BLANK]</th>
<th>yesterday. ’</th>
</tr>
</thead>
<tbody>
<tr>
<td>(inan. sg.)</td>
<td>nitsííni’pa</td>
<td>anní</td>
<td>_______</td>
<td>matónni</td>
</tr>
<tr>
<td>(inan. pl.)</td>
<td>nitsííni’pi</td>
<td>anníístsí</td>
<td>_______</td>
<td>matónni</td>
</tr>
<tr>
<td>(anim. sg.)</td>
<td>nitsíínowaawa</td>
<td>anná</td>
<td>_______</td>
<td>matónni</td>
</tr>
<tr>
<td>(anim. pl.)</td>
<td>nitsíínowaawa</td>
<td>annííksi</td>
<td>_______</td>
<td>matónni</td>
</tr>
</tbody>
</table>
Procedure: Prompts (Phase 1: pilot)

<table>
<thead>
<tr>
<th>‘I saw that _______ yesterday’.</th>
<th>‘I saw those _______ yesterday’.</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘bracelet’</td>
<td>ponna</td>
</tr>
<tr>
<td>‘cat’</td>
<td>poosa</td>
</tr>
<tr>
<td>‘door’</td>
<td>kitsimmi</td>
</tr>
<tr>
<td>‘tipi pole’</td>
<td>mansstaama</td>
</tr>
<tr>
<td>‘belt’</td>
<td>maiipssimi</td>
</tr>
<tr>
<td>‘soup’</td>
<td>koopisi</td>
</tr>
<tr>
<td>‘bracelets’</td>
<td>ponniksi</td>
</tr>
<tr>
<td>‘cats’</td>
<td>poosiksi</td>
</tr>
<tr>
<td>‘doors’</td>
<td>kitsimmistsi</td>
</tr>
<tr>
<td>‘tipi poles’</td>
<td>mansstaamiksi</td>
</tr>
<tr>
<td>‘belts’</td>
<td>maiipssiistsi</td>
</tr>
<tr>
<td>‘soups’</td>
<td>koopistsi</td>
</tr>
</tbody>
</table>
Procedure: Prompts (Phase 2)

Three stages

1. Review pictures and target words
2. Reminder of the frame sentences
3. Elicit singular and plural words (picture repeated x2 for plural)
Resulting corpus

• Extremely varied!

• Speakers expressed discomfort with the task in several ways
  • Often created different frame sentences.
  • Often used a different word order.
  • Often avoided repeating the same sentence twice.

**KBW:** Ámo kitsímm nitáínisspa. Ámo kitsímm nitáíssa’tsissp.

    I saw this door. I watched this door.
Resulting corpus

• Prioritized consistency for the following properties:
  • noun occurs with a demonstrative
  • noun is not final in the phrase
  • same sentence is repeated twice
Experiment

Preliminary results
Change in progress?

• Much more variation than the corpus study!
• Many VC words end in a consonant in singular and plural contexts.
• Target: aakííkoan ‘girl’, aaííkoaksi ‘girls’

LFR: Ámoksi aakííkoakís áaksinao’si.
‘Those girls are dressed up.’

NC: Nitsíínowaa ómiksi aakííkoanikís matónni.
‘I saw those girls yesterday.’
Reanalysis of plurals?

• Some less common stems reanalyzed as ending in a vowel.
• More rarely: speakers treat the consonant as part of the plural suffix.
• Target: mánsstaaam ‘tipi pole’, mánsstaaamiksi ‘tipi poles

DMB:    Óma mánsstaa nitáíssa’tsi’pa.
          ‘I saw that tipi pole yesterday.’

Ómiksi mánsstaaamiks nitáíssa’tsi’pya.
          ‘I saw those tipi poles yesterday.’
Preliminary conclusions

• Lots of variation among speakers, even from one dialect.
• This variation is not reflected in the existing documentation!
• More research is needed on speaker variation.
Discussion
Other variation

• Lexical
  • kóópis vs. kóópskaan ‘soup, broth’
  • initial a on some words
    • amáípssim máípssim ‘belt’
    • apásstaan pásstaan ‘bridge’
  • length of final vowel in some words
    • pisskán pisskáán ‘buffalo jump’
    • napayín napayíín ‘bread’
Other variation

• Phonological
  • [ks] ~ [ts] subdialect
  • [ic] ~ [ss] subdialect
  • final [w], [j]

• Morphological
  • Grammatical animacy
  • Agreement

• Semantic
  • For some speakers, ‘pants’ and ‘scissors’ must be plural
  • Conservative dialects: all nouns take singular and plural number (Wiltschko 2012)
Using frame sentences in experiments

• Previous research successfully used frame sentences to elicit words (Gick et al. 2012; Prins 2019; Windsor 2017).
• This study: many speakers avoided the frame sentences, calling this ‘unnatural’ Blackfoot and expressing discomfort.
• Lots of variation, especially in terms of animacy and agreement.
• Future research:
  • Is this an artefact of the methodology, or is the grammar this flexible?
  • Would other methods be more appropriate?
Blackfoot teaching and learning

• (from a Texan perspective):
  • many stories!
  • language learning involves not just learning a word and how to use it in a sentence, but understanding an object’s use, cultural significance, and more

(Bastien 2004: 88–89; Pepion 1999)
Tradeoffs between methods

• experiment
  • highly controlled
  • more artificial

• speech corpus
  • uncontrolled
  • natural speech

• possible middle ground: interview
  • targeted wordlist with picture prompts
  • invites the participants to teach the experimenter more about the words
  • experimenter can ask for the plural

• pros: much more natural language setting
• pros: integrates better with Blackfoot learning
• cons: not controlled for certain variables
Conclusions

• Non-permanent consonants are a point of variation
• Even within a single dialect of Blackfoot
• Documentation does not reflect current speaker variation.
  • Differences between the corpus study and experiment
  • Variation must be studied by other means!
• Targeted wordlists can be used to study variation.
• Interviews may be more culturally appropriate than frame sentences.
Thank you!

• Natalie Creighton, Francis First Charger, Peter Weasel Moccasin, John Heavy Shields, Leverne First Rider, Kim Black Water, Debbie Many Bears, Leo Fox, as well as Liz Scout and Conrad Little Leaf

• Ling 343 (Phonological Variation) and Ka Fai Yip

• ACOL 2016, WCCFL 2015, Effects of Constituency on Sentence Phonology 2016 (UMass Amherst)

• For their comments and guidance: Inge Genee, Douglas Pulleyblank, Rose-Marie Déchaine, and Gunnar Hansson
References


References


References


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