Exponency in a hybrid lexicon: Plurals in Pennsylvania Dutch

UIC-Talks in Linguistics

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Road Map

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2. Penn Dutch (PD)
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   - Analysis: German
   - Analysis: PD
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Section 1

Overview
Overview

- **Empirical focus:** Plural formation, in particular exponency variation in plural formation in Pennsylvania Dutch (PD)
- **Theoretical importance:** PD serves as an ideal population to understand inflectional morphology in a *hybrid lexicon*
Research Questions

- **RQ$_1$:** To what extent do patterns of plural exponency in PD retain their *German-ness*?
- **RQ$_2$:** How do these data contribute to further theory-building efforts re: bi/multilingual grammars?

Preview of (preliminary) findings

- Although prosody-conditioned exponency is still present in PD, it plays a less prominent role when compared with (standard) German.
- There are a substantially higher amount of stem suppletion in plural formation in PD.
Section 2

Penn Dutch (PD)
What exactly is *Pennsylvania Dutch*?

- PD is a language that has "outgrown its name" (Keiser, 2012:1).
  - +300 years spoken on North American soil (and now in South America!)
  - Started in SE Pennsylvania, now spoken throughout the Midwest and Ontario
  - ≈ 400,000 L1 speakers of PD today
  - Predominantly spoken as the L1 of the Old Order Amish (OOA) and other conservative Mennonite groups
  - NB: For an easily accessible history of the language, see Louden (2016)
- PD ain’t going nowhere anytime soon...
  - The Amish population doubles in every generation (average family size 8.6 members)
  - If they keep this pace, by 2315 there will be more Amish in the US than any other ethnic or religious group!
There are no exclusively monolingual speakers of PD
The OOA exist in a state of **diglossic bilingualism** (Grosjean, 2001, 2008)
- Although the vast majority of OOA are sequential bilinguals (acquiring PD first), English is omnipresent in their daily lives
- Bifurcation of modes and sociolinguistic domains:
  - **PD**: home, family, church, local community
  - **English**: non-Amish neighbors, work (outside of the home), ‘worldly’ topics

Thus, PD speakers are "deep bilinguals" (to quote López, 2020)
- It makes little sense to attempt to distinguish between *loanwords* and *borrowings* (a la Poplack (2018) and related work) in PD
- Their lexicon is truly **hybrid**
Section 3

Theory
Theoretical background & assumptions

- I support a non-lexicalist (Bruening, 2018), late-insertion (Hale & Keyser, 1993), relational (Stump, 2001) approach to "morphology"
- Let’s call these grammars **exoskeletal (XS) grammars**
  - Family of approaches:
    - **Distributed Morphology (DM)** (Hale & Keyser, 2013; Marantz, 1997; Embick, 2015)
    - **Nanosyntax** (Starke, 2009; Svenonius, 2016; Baunaz et al., 2018; Caha, 2020)
- Shared desiderata & architectural design:
  - Syntax generates all objects - ‘words’, ‘clauses’, ‘idioms’, etc.
  - There is no separate module in the mind for "morphology"
- Architecture of the bilingual mind is integrated (Alexiadou & Lohndal, 2018; Putnam et al., 2018; López, 2020)
General late-insertion architecture (Embick 2015)
The PF-interface (Idsardi & Raimy 2013)

Organization of the grammar

Narrow syntax

→ Spell-out

Morphosyntax

→ CI

Morphophonology

→ Phonology

→ ...

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The road to PF (Idsardi & Raimy 2013)

(2) The path from narrow syntax to PF

<table>
<thead>
<tr>
<th>Module</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Narrow syntax</td>
<td>hierarchy, no linear order, no phonological content</td>
</tr>
<tr>
<td>LINEARIZATION-1</td>
<td><strong>Immobilization</strong></td>
</tr>
<tr>
<td>Morphosyntax</td>
<td>hierarchy, adjacency, no phonological content</td>
</tr>
<tr>
<td>LINEARIZATION-2</td>
<td><strong>Vocabulary Insertion</strong></td>
</tr>
<tr>
<td>Morphophonology</td>
<td>no hierarchy, directed graph, phonological content</td>
</tr>
<tr>
<td>LINEARIZATION-3</td>
<td><strong>Serialization</strong></td>
</tr>
<tr>
<td>Phonology</td>
<td>no hierarchy, linear order, phonological string</td>
</tr>
</tbody>
</table>
## Overview of Standard German plural exponency

<table>
<thead>
<tr>
<th>Plural ending</th>
<th>Possible stem changes</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>-s</td>
<td>(never umlaut)</td>
<td>Auto–Auto+s ‘car’</td>
</tr>
<tr>
<td>-n</td>
<td>(never umlaut)</td>
<td>Tasse–Tasse+n ‘cup’</td>
</tr>
<tr>
<td>-en</td>
<td>(never umlaut)</td>
<td>Frau–Frau+en ‘woman’</td>
</tr>
<tr>
<td>-er</td>
<td>(umlaut if possible)</td>
<td>Mann–Männ+er ‘man’; Kind–Kind+er ‘child’</td>
</tr>
<tr>
<td>-e</td>
<td>(with or without umlaut)</td>
<td>Hut–Hüt+e ‘hat’; Hund–Hund+e ‘dog’</td>
</tr>
<tr>
<td>-∅</td>
<td>(with or without umlaut)</td>
<td>Mutter–Mütter+∅ ‘mother’, Lehrer–Lehrer+∅ ‘teacher’</td>
</tr>
</tbody>
</table>

(see Schuhmann & Smith (accepted))
German data

Prosodic requirements on Standard German plural formation

- No prosodic requirement on "low-frequency default" plural exponent -s, e.g.: 'Park+s ‘parks’, 'Schal+s ‘scarves’, 'Auto+s ‘cars’
- The irregular plural exponents (-\((e)n, -er, -e, -∅\) show a tendency to end in a syllabic trochee, i.e., a foot composed of a stressed syllable (’) followed by an unstressed syllable, e.g.:
German data

Prosodic requirements

\[
\begin{array}{c|c}
(...)\['\sigma\sigma]\# \rightarrow (...)\['\sigma\sigma]\# & (...)\['\sigma]\# \rightarrow (...)\['\sigma\sigma]\# \\
'Tasse+n 'cups' & 'Frau+en 'women' \\
'Win\text{del}+n 'diapers' & 'Stift+e 'pens' \\
'Wägen+∅ 'cars' & 'Kind+er 'children' \\
Vio'line+n 'violins' & Bäcker'ei+en 'bakeries' \\
Apo'theke+n 'pharmacies' & Pro'bant+en 'subjects' \\
Com'puter+∅ 'computers' & Dia'gramm+e 'diagrams' \\
\end{array}
\]

(e.g., Wegener, 1999; Wiese, 2001, 2009; Salmons, 2012; Smith, 2020).
German data

Intermezzo: Revisiting (and revising) the RQs

- RQ₁: To what extent does Penn Dutch require prosodically-conditioned exponency in plural formation?
- RQ₂: How is prosodically-conditioned Vocabulary Insertion handled in a late-insertion model?
- RQ₃: How (and perhaps also why) does PD differ from German w.r.t. plural exponency?

**Disclaimer!** - I’m not insinuating that standard German is some sort of baseline for PD (Polinsky, 2018: Ch. 8)
We found 8 attested patterns of plural exponents in PD

<table>
<thead>
<tr>
<th>Plural exponent</th>
<th>Sg. form</th>
<th>Pl. form</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>-e</td>
<td>‘Blumm’</td>
<td>‘Blumme’</td>
<td>flower(s)</td>
</tr>
<tr>
<td>*-e + penultimate schwa deletion</td>
<td>‘Hiwwel’</td>
<td>‘Hiwwle’</td>
<td>hill(s)</td>
</tr>
<tr>
<td>-er</td>
<td>‘Hemm’</td>
<td>‘Hemmer’</td>
<td>shirt(s)</td>
</tr>
<tr>
<td>-n</td>
<td>‘Leffli’</td>
<td>‘Lefflin’</td>
<td>teaspoon(s)</td>
</tr>
<tr>
<td>-s</td>
<td>‘Hammer’</td>
<td>‘Hammers’</td>
<td>hammer(s)</td>
</tr>
<tr>
<td>-Ø (O)</td>
<td>‘Frein’</td>
<td>‘Frein’</td>
<td>friend(s)</td>
</tr>
<tr>
<td>Vowel Change (VC)</td>
<td>‘Hand’</td>
<td>‘Hend’</td>
<td>hand(s)</td>
</tr>
<tr>
<td>*(VC) + -r</td>
<td>‘Jaw‘a’</td>
<td>‘Jor’</td>
<td>year(s)</td>
</tr>
</tbody>
</table>
Wug test for PD-speakers (Fisher et al., in prep.)

- 10 speakers of PD (between the ages of 19-58)
- All from the Lancaster County, PA-area
- All highly proficient in English
- 50 monosyllabic singular non-words
- 37 disyllabic singular non-words
In the case of disyllabic singulars, sometimes the plural exponency replaces final segments of the singular form.

There were no cases of trisyllabic plurals.
Wug test results

![Wug Test - Percentage of Plural Formations by Category](image)
Wug test results

![Wug Test - Percentage of Plural Formation by Syllable Structure](image)
**Summary of PD data**

- Penn Dutch also displays a wide array plural exponency:
  - -(e)r, -s, -Ø, -lin, & stem vowel alternation

- **Q:** Does Penn Dutch make use of a trochaic prosodic template (similar to what is observed in standard German) in plural formation?
  - Trochaic template plays a less dominant role in PD
  - Avoidance of homophony between singular and plural forms is of prime importance, which can be achieved by:
    - (i) vowel changes, or
    - (ii) suffixal morphology

- Vowel change trumps the trochaic template requirement in PD plural formation
What (might have) led to this?

- Consistent: monosyllabic-to-monosyllabic & disyllabic-to-disyllabic patterns
- **Possible role of ‘overextension’:**
  - Umlaut in L2 German plural formation is overextended by L1 English speakers (Dykstra-Pruim, 2003; Köpcke, 1987; Phillips & Bouma, 1980)
  - ‘Umlaut’ (or vowel change, more generally) might be particularly salient for a German/PD-variety in a bilingual dyad with a non-Umlaut-ing source grammar (e.g., English)
  - Instances of overextension are fairly pervasive in heritage grammars (e.g., Kupisch, 2014; Putnam & Hoffman, forthcoming; Rinke & Flores, 2014; Rinke, Flores, & Barbosa, 2018)
Section 4

Analysis
I capture these findings through the lens of Distributed Morphology (Hale & Keyser, 1993; Halle & Marantz, 1993; Marantz, 1997; Embick, 2010, 2015; López, 2020)
Lexicalizing exponents

(1) Vocabulary Item:

\[ \alpha\beta\gamma \ \leftrightarrow \ /X/ \]

synsem features \hspace{1cm} phonological exponents
Schemata

*play* (prior to insertion)

```
  #
 /     
\  \   
 v [v,Q]
  \_________
    \sqrt{play} [v,Q]
```

*play* (after insertion)

```
  #
 /     
\  \   
 v [v,-Ø]
  \_________
    \sqrt{play} [v,-Ø]
```

- *Q* can be treated as a variable
- The phonological realization component of Vocabulary Insertion can be treated as *the substitution of a free variable.*
- *[Q/X]* means "phonological /X/ is substituted for *Q*"
Contextual exponency

Two kinds of triggers for contextual exponency:

- **Grammatically conditioned exponency**: The contextual factor that triggers exponency is a specific set of grammatical elements (i.e., a set of Roots, or exponents, or features).

- **Phonologically conditioned exponency**: The contextual factor that triggers exponency is a phonological representation.
Cyclicity & locality

Two types of heads:

- **Cyclic heads** - Define spell-out domains
- **Non-cyclic heads** - Transparent domains

Two generalizations:

- **Generalization 1**: A cyclic head $y$ outside of a cyclic head $x$ cannot see a Root or other exponents in the complement of $x$, $[[\sqrt{\text{ROOT}} \ x]y]$.
- **Generalization 2**: A non-cyclic head $Y$ can see a Root (or other exponents in the complement of cyclic $x$ in $[[\sqrt{\text{ROOT}} \ x]Y]$. 
Number (plurals): English vs. German

German

```
DP
  D
  #
  /-s/
  nP
  n
  PL
  √
```

English

```
DP
  D
  #
  nP
  n
  √
```

See e.g. Wiltschko (2008) & Barrie (2011)
Empirical evidence

German compounds:

- Lampe-*n*-geschäft ‘Lamp-*pl*-store’
- *Auto-*s*-händler ‘Car-*sg*-salesman’
- Kind-*er*-wagen ‘child-*pl*-wagon’
- Freund-*es*-kreis ‘friend-*gen*/*sg*-circle’
- *Freund-*en*-kreis ‘friend-*gen*/*pl*-circle’

Assumption:

These data above suggest that compounds in German do not involve NUM, but rather *n*
Two ‘flavors’ of $n$:
- $n$
- $n_{\text{GRM}}^P\omega$
Establishing prosodic boundaries

- Prosodic boundaries in German are established by: \( n_{GRM} P_\omega + n [+\text{pl}] \)
- **Important point!** - We need **both** to make this happen (because German singulars are not required to be trochaic)
- Prosodic boundaries are established in a cyclic nature (but not necessarily tied to *phases*)
Analysis: German

Prosodically-conditioned Vocabulary Insertion

(2) Prosodic Vocabulary Item (PVI)

\[ n[+pl] \iff w[\ldots \ F[\prime \sigma\sigma]] \]

We’re dealing with a two-step process here:

\[ n[+pl] \iff w[\ldots \ F[\prime \sigma\sigma]] \]

- \[ n[+pl][+fem] \iff /-n/ \]
- \[ n[+pl][-fem] \iff /-\emptyset/ \]
- \[ n[+pl][{-fem, -masc}] \iff /-r/ \]
Deriving German /-s/ plurals
Components of analysis: Penn Dutch

- PD, with its hybrid lexicon, exhibits a hybrid plural marking system
  - PD makes use of both the English & German structures (e.g. Wiltschko (2008) & Barrie (2011))
- Plural marking on $n$ (rather than NUM) also appears to hold for PD (data from Louden & Page, 2005):
  - *Redderschduhl* $<$ ‘wheelchair’, lit. ‘wheels + chair’
  - *Bicherschdohr* $<$ ‘bookstore’, lit. ‘books + store’
- Disyllabic singular lead to disyllabic plurals
- Strong correlation between monosyllabic singulars forming monosyllabic plurals (but not universal)
Lingering questions: Penn Dutch

We’ve only scratched the surface here...

- **Q₁**: Are English-origin items more prone to one type of plural formation than the other?
- **Q₂**: Are there particular (phonological) properties of \( \sqrt{\text{roots}} \) that are predictable?
Section 5

Conclusion
Summary of findings

- **RQ₁**: To what extent does Penn Dutch require prosodically-conditioned exponency in plural formation?
  - **A**: It plays a role, but certainly not as productive when compared with (standard) German

- **RQ₂**: How is prosodically-conditioned Vocabulary Insertion handled in a late-insertion model?
  - **A**: Flavors of *n*, with prosody being determining cyclically

- **RQ₃**: How (and perhaps also *why*) does PD differ from German w.r.t. plural exponency?
  - **A**: This is principally due to the *hybrid* grammar of PD
Shout out to my collaborators!

Special thanks to the following folks!

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