Sociolinguistics and Heritage Languages

The Road Less Traveled
Toronto, October 26, 2012

Why study language contact?

“It should be stressed that the results we obtained are not meant to be independent of this particular set of languages. In other language pairs, quite different factors may turn out to be operant, depending on sociolinguistic factors and different contrasting typological properties.” (van Hout & Muysken 1994)

“Predicting the outcome [of language contact] remains an immensely challenging task” (Siemund & Kintana 2008:3)

“We are far from being able to identify a linguistic feature that can be predicted to change in all situations.” (Poplack, Zentz & Dion 2012:247)
What are HLs like?

HLs exhibit a consistent pattern of simplification and loss (Polinsky 1995, 2006); are incompletely acquired (cf. Montrul 2008).

HLs are NOT limited in capacity to attain competence (cf. Pires 2012).

HL speakers exhibit greater variation than monolinguals (Pires 2011:122).

HLs may remain the same as, or diverge from their source language... they can tell us a lot about contact effects.

Defining Heritage Language (HL)

Heritage languages are spoken by early bilinguals [...] whose L1 (home language) is severely restricted because of insufficient input. [...] they can understand the home language and may speak it to some degree but feel more at ease in the dominant language of their society. (Polinsky 2011)

- limited vocabulary
- incomplete morphology
- impoverished syntax
- spotty socio-cultural knowledge
- not fully developed register

(Polinsky & Kagan 2007)

Heritage language is a mother tongue that is not one of the two official languages, nor an indigenous language. (Cummins 2005)

- not English or French
- cultural connection - family heritage
- may or may not be home language
- speakers may be immigrants or Canadian-born
- may or may not be the speaker's mother tongue

(StatCan; Harrison 2000)
% of Toronto population reporting speaking this language most often at home, 2011

http://nationalpostnews.files.wordpress.com/2012/10/na1025-census-percent-at-home1.jpg

Contrasting demographics

<table>
<thead>
<tr>
<th>Language</th>
<th>MT speakers (2006 Census)</th>
<th>Ethnic Origin (2006 Census)</th>
<th>Est. in TO</th>
<th>Came from</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italian</td>
<td>194,000</td>
<td>466,000</td>
<td>1908</td>
<td>Calabria</td>
</tr>
<tr>
<td>Cantonese</td>
<td>170,000</td>
<td>537,000</td>
<td>1951</td>
<td>Hong Kong</td>
</tr>
<tr>
<td>(Polish)</td>
<td>80,095</td>
<td>207,495</td>
<td>1911</td>
<td>Eastern Poland</td>
</tr>
<tr>
<td>Russian</td>
<td>66,000</td>
<td>58,505</td>
<td>1916</td>
<td>St. Petersburg, Moscow</td>
</tr>
<tr>
<td>Korean</td>
<td>49,000</td>
<td>55,000</td>
<td>1967</td>
<td>Seoul</td>
</tr>
<tr>
<td>Ukrainian</td>
<td>27,000</td>
<td>122,000</td>
<td>1913</td>
<td>Lviv</td>
</tr>
<tr>
<td>(Hungarian)</td>
<td>20,190</td>
<td>53,210</td>
<td>1880</td>
<td>Budapest</td>
</tr>
<tr>
<td>Faetar</td>
<td>&lt;100?</td>
<td>&lt;500?</td>
<td>1950</td>
<td>Faeto, Celle di St. Vito (Apulia Italy)</td>
</tr>
</tbody>
</table>

www40.statcan.ca/l01/cst01/demo12c-eng.htm
Expected outcome

1st 2nd 3rd

Heritage Language / Culture  English/Canadian

Participant criteria

(Self-defined) fluent speaker of...

Cantonese
Faetar
Korean
Italian
Russian
Ukrainian
## Generation

<table>
<thead>
<tr>
<th>Speaker of...</th>
<th>Generation</th>
<th>Ukrainian</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt;: born in/near Lviv; moved to Toronto after age 18; in Toronto 20+ years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt;: born in Toronto (or came from homeland before age 6); parents qualify as 1&lt;sup&gt;st&lt;/sup&gt; generation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt;: born in Toronto; parents qualify as 2&lt;sup&gt;nd&lt;/sup&gt; generation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Italian  |
| 1<sup>st</sup>: born in Calabria... |

| Russian  |
| 1<sup>st</sup>: born in Moscow or St. Petersburg... |

## Age group

<table>
<thead>
<tr>
<th>Languages</th>
<th>Generation</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ukrainian</td>
<td>1&lt;sup&gt;st&lt;/sup&gt;: born in homeland; moved to Toronto after age 18; in Toronto 20+ years</td>
<td>60+</td>
</tr>
<tr>
<td></td>
<td></td>
<td>39-59</td>
</tr>
<tr>
<td></td>
<td>2&lt;sup&gt;nd&lt;/sup&gt;: born in Toronto (or came from homeland &lt; age 6); parents qualify as 1&lt;sup&gt;st&lt;/sup&gt; generation</td>
<td>60+</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40-59</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21-39</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;21</td>
</tr>
<tr>
<td></td>
<td>3&lt;sup&gt;rd&lt;/sup&gt;: born in Toronto; parents qualify as 2&lt;sup&gt;nd&lt;/sup&gt; generation</td>
<td>60+</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40-59</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21-39</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;21</td>
</tr>
</tbody>
</table>
Sex

<table>
<thead>
<tr>
<th>Languages</th>
<th>Generation</th>
<th>Age</th>
<th>Sex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ukrainian</td>
<td>1st: born in homeland; moved to Toronto after age 18</td>
<td>60+</td>
<td>2 females</td>
</tr>
<tr>
<td></td>
<td></td>
<td>39-59</td>
<td>2 males</td>
</tr>
<tr>
<td></td>
<td></td>
<td>39-59</td>
<td>2 females</td>
</tr>
<tr>
<td></td>
<td></td>
<td>39-59</td>
<td>2 males</td>
</tr>
<tr>
<td>Italian</td>
<td></td>
<td>90+</td>
<td>2 females</td>
</tr>
<tr>
<td>Russian</td>
<td></td>
<td>90+</td>
<td>2 males</td>
</tr>
<tr>
<td>Korean</td>
<td></td>
<td>90+</td>
<td>2 females</td>
</tr>
<tr>
<td>Cantonese</td>
<td></td>
<td>90+</td>
<td>2 males</td>
</tr>
<tr>
<td>Faetar</td>
<td></td>
<td>90+</td>
<td>2 females</td>
</tr>
<tr>
<td></td>
<td></td>
<td>90+</td>
<td>2 males</td>
</tr>
</tbody>
</table>

= 240 speakers

For every variable, 3 kinds of comparisons

Stage 1: inter-generational comparison
Stage 2: cross-variety comparison
Stage 3: diatopic comparison
Stage 4: Check English
Data collection methods

1. Sociolinguistic interview (~1 hour)
2. Ethnic Orientation Questionnaire
3. Picture Description Task

All conversations guided and recorded by native speakers in the heritage language

Ethnic Orientation Questionnaire

A. Ethnic identity
   1. Do you think of yourself as Italian, Canadian or Italian-Canadian?
   2. Are most of your friends Italian?
   3. Are people in your neighbourhood Italian?...

B. Language use
   1. Do you speak Italian? How well? How often?
   2. Where did you learn Italian? At home? In school?
   3. Do you prefer to speak Italian or English?
   4. Do you prefer to read and write in Italian or English? ...

C. Family language choice
   1. What language does your family speak when you get together?
   2. What language do your parents prefer to speak?

D. Cultural heritage

E. Media preference

F. Discrimination experience

Adapted from Keefe & Padilla 1987, Hoffman & Walker 2010
**Comparative Variationist Analysis**

1. Compare rates of variant use across groups
2. Compare constraint effects across groups

Analysis by undergraduate and graduate students and a team of collaborating colleagues:

- Yoonjung Kang
- Alexei Kochetov
- James Walker

- exclude variable contexts from experiments
  - include and quantify variation
  - possibly, interpret it as (expected, internal) change (cf. Pires 2011)
- compare to monolithic/idealized standard/baseline and/or norms of a different community
  - analyze the heritage and homeland varieties in the same manner, and independently
- expect monolingual-like targets
  - expect identity-marking variation: HLs ≠ monolinguals
- inter- and intra-speaker variation not distinguished
  - examine and learn from both types of variation
- participants are mostly students in language classrooms
  - use a socially-stratified sample from the community
  - don’t rely on reading ability in tasks
Pro-drop or variation between overt and null subject pronoun in finite clauses

Original HL analysis from:

Variable 1: Pro-drop
(Variable Subject Pronoun Presence)

**Italian - Canonical prodrop language**
Ø Avevo 14 anni e mia moglie ce ne aveva 13.
Ø (I) was 14 and my wife was only 13...[I1M75A]

**Lo ho, I said**

**Russian - Partial prodrop language**
Ø Начала немножко такой research делать.
Ø (I) gradually started to do some research on this...[R3F25A]

**Я очень медленно читаю, …**
I read very slowly, ...

**Cantonese - Discourse prodrop language**
yn-1 wai-6 Ø mou-5 ga-1 yan-4 hai-5 dou-6 because Ø (I) not have relative be here

Because I do not have any relatives here. [C1F50A]

Nagy et al. 2010
Pro-drop rate by language and generation (N=6,216)

Russian: Homeland vs. Heritage

Homeland Russian analysis: Pustovalova (2011:14) (14 speakers, 1,320 tokens)
English: Nagy et al. 2010, analysis by Derek Denis (8 speakers, 400 tokens)
Linguistic Factors

- **Subject Continuity** (universal)
  - Same referent as previous subject
  - "It had the old red and gold F-W-Woolworth’s sign right on the corner, Ø [it] had those little creaky wood, hardwood floors." (EXM37A)

Different referent from previous subject (switch reference)

- "Ø [we] used to bring a lunch with us, sandwiches and stuff. Ø [I] remember we used to go with Darryl, and Gary, and Jack-G. and all of us." (EXM47A)

- **Conjunction** (language-dependent?)
  - "I went and Ø knocked on the door." (EXM44A)
  - "By the time Ø got to England it was getting close to summer." (EXF49A)
  - "He’s in the army and he goes to England three-or-four times a year." (EXM44A)
  - "I went and Ø knocked on the door." (EXM44A)

Linguistic factor effects

Toronto English pro-drop

Mixed Effects Model (N=400)

<table>
<thead>
<tr>
<th>Only Significant factor group (an interaction)</th>
<th>Factor weight</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>same reference, conjoined clause</td>
<td>.86</td>
<td>120</td>
</tr>
<tr>
<td>same reference, main clause</td>
<td>.53</td>
<td>130</td>
</tr>
<tr>
<td>switch reference, conjoined</td>
<td>.34</td>
<td>123</td>
</tr>
<tr>
<td>switch reference, main clause</td>
<td>.21</td>
<td>27</td>
</tr>
<tr>
<td>range</td>
<td>65</td>
<td></td>
</tr>
</tbody>
</table>

Non-significant factor groups

- tense
- ambiguity (in morph. marking)
- person & number

➤ Bigger factor weight = more null subjects in that context
### Cross-variety comparison

(Factor weights in 3 separate regression analyses)

<table>
<thead>
<tr>
<th>Factor groups</th>
<th>Homeland</th>
<th>Generation 1</th>
<th>Generation 2</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject continuity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>same: 60</td>
<td>same: 63</td>
<td>same: 62</td>
<td></td>
<td>Y same (but univ.)</td>
</tr>
<tr>
<td>switch: 47</td>
<td>switch: 42</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Person &amp; Number</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sg. pl.</td>
<td>3: 43</td>
<td>3: 69</td>
<td></td>
<td>not sig.</td>
</tr>
<tr>
<td>3: 67</td>
<td>2: 67</td>
<td>2: 87</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1: 38 48</td>
<td>1: 35</td>
<td>1: 40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clause type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>conjoined: 65</td>
<td>conjoined: 72</td>
<td>conjoined: 71</td>
<td></td>
<td>conjoined &gt; main &gt; (subord. 0%)</td>
</tr>
<tr>
<td>subord.: 47</td>
<td>main: 49</td>
<td>main: 50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>main: 41</td>
<td>subord.: 42</td>
<td>subord.: 31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>neg.: 51</td>
<td>not sig</td>
<td>neg.: 67</td>
<td></td>
<td>not sig.</td>
</tr>
<tr>
<td>affirm.: 50</td>
<td></td>
<td>affirm.: 47</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender (grm.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>neuter: 85</td>
<td>neuter: 82</td>
<td>neuter: 84</td>
<td></td>
<td>not sig.</td>
</tr>
<tr>
<td>none: 52</td>
<td>none: 51</td>
<td>none: 48</td>
<td></td>
<td></td>
</tr>
<tr>
<td>masc.: 45</td>
<td>masc.: 58</td>
<td>masc.: 50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>fem.: 43</td>
<td>masc.: 42</td>
<td>masc.: 55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>older &gt; younger</td>
<td>older &gt; younger</td>
<td>older &gt; younger</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>male &gt; female</td>
<td>n.s.</td>
<td>male &gt; female</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Is H-RUS moving toward English or just continuing a (previously undocumented) homeland trend?

**Apparent-time differences in homeland & heritage varieties**

- Heritage Russian analysis: Hollett (2011:67)
Comparison of age & sex differences in homeland & heritage varieties

Heritage Russian analysis: Hollett (2011:68)
Homeland Russian analysis: Pustovalova (2011:17)

* Homeland data are southern Italian, but not Calabrese

Homeland comparisons

Homeland & Germany data from Rumpf & DiVenanzio (2012)
Is there more variation in Heritage Languages than monolingual varieties?

<table>
<thead>
<tr>
<th>Conditioning factor</th>
<th>Homeland</th>
<th>Heritage Gen 1</th>
<th>Heritage Gen 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject continuity</td>
<td>13</td>
<td>21</td>
<td>20</td>
</tr>
<tr>
<td>Person &amp; Number</td>
<td>39</td>
<td>34</td>
<td>47</td>
</tr>
<tr>
<td>Clause type</td>
<td>24</td>
<td>30</td>
<td>36</td>
</tr>
<tr>
<td>Negation</td>
<td>1</td>
<td>[0]</td>
<td>20</td>
</tr>
<tr>
<td>Gender</td>
<td>42</td>
<td>40</td>
<td>36</td>
</tr>
<tr>
<td>Individual variation</td>
<td>26</td>
<td>33</td>
<td>30</td>
</tr>
</tbody>
</table>

HL data from Hollett (2010)
Homeland data from Pustovalova (2011)
yes... but...

Is there more variation in Heritage Languages than monolingual varieties?

Range of grammatical person factor: Homeland vs. Heritage

ITA & SPA data from Rumpf & DiVenanzio (2012)
RUS data from Pustovalova (2011)

no.
Results – Ethnic Orientation Effects

Ethnic Orientation Indices

**Language Choice:** Actual and preferred language choice

**Family Language:** Language use with family

**Ethnic identity:** Ethnic self-identification

**Reading/Writing:** Language choice for reading & writing

**Discrimination:** Is there a lot of discrimination against your culture?

0 points 🔴—with your culture 🔵, 2 points 🔴—against your culture 🔵.
### Correlation across EOQ indices

<table>
<thead>
<tr>
<th></th>
<th>Fam. Lg.</th>
<th>Ethnic identity</th>
<th>Read/Write</th>
<th>Discrimination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lg. Choice</td>
<td>0.60*</td>
<td>0.26</td>
<td>0.45*</td>
<td>-0.34</td>
</tr>
<tr>
<td>Family Lg.</td>
<td></td>
<td>0.23</td>
<td>0.50</td>
<td>-0.31</td>
</tr>
<tr>
<td>Ethnic identity</td>
<td></td>
<td>0.39</td>
<td>-0.34</td>
<td>0.01</td>
</tr>
<tr>
<td>Read/Write</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discrim.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For the **23 participants** who provided the most answers (>2/3 of the EOQ questionnaire)

*p < 0.05

---

### EO scores by generation & language

(114 speakers)
Heritage Pro-drop: Summary

Expected

2nd 1st
Actual

1st
2nd

Explanation 1

1st
2nd

Generation 1 has already felt influence from English contact.
 Ambient English has been influenced by the HLs, and moved away from the “Old-line” norm.

Isobel Marr’s (2011) thesis investigated this.

**Explanation 2**

English Null subject rate

Isobel Marr, U of T MA thesis 2011

<table>
<thead>
<tr>
<th>Language</th>
<th>Nulls per million words</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anglo 1st gen</td>
<td>11.5</td>
</tr>
<tr>
<td>Anglo 2nd gen</td>
<td>15.2</td>
</tr>
<tr>
<td>Chinese 1st gen</td>
<td>4.5</td>
</tr>
<tr>
<td>Chinese 2nd gen</td>
<td>2.3</td>
</tr>
<tr>
<td>Italian 1st gen</td>
<td>10.0</td>
</tr>
<tr>
<td>Italian 2nd gen</td>
<td>4.0</td>
</tr>
</tbody>
</table>
Explanation 3

less fluent speakers, who didn't self-select for our sample

1st

2nd

Explanation 4

What about the lack of correlation with EOQ scores?

- Perhaps speakers don't use *this* variable to index ethnic orientation.
- We might find effects with other variables.
Voice Onset Time

from:

Long-lag voice onset time (English)

English release = ~0.09 sec.
Our Questions

• Do consistent patterns of change in VOT exist across and/or within languages? (no)

• Are these related to length of time of the family (or the community) in Toronto? (yes  ish)

• Are they related to (any aspects of) ethnic orientation? (not directly (?) )
Data

- 11-12 speakers per language (34 speakers)
- 2,550 tokens (~75 tokens/speaker)
  - 25 tokens per consonant * 3 consonants [p, t, k]
  - Only word-initial stressed syllables
  - All followed by /a/ or /o/
- All tokens were coded in Praat and VOT and nucleus lengths extracted
- EX: casa ‘house’, TaK ‘yes’, ПОМНИТЕ remember’

Russian VOT

Generation & Consonant are significant
- G3 > G2, G1 (p<.001)
- k > p, t (p<.001)

Montreal English VOT (Fowler 2008)
- Change toward English

St. Petersburg Russian VOT (Ringen & Kulikov 2010)
- Change from Homeland

Flege SLM Equivalence Effect?
Ukrainian VOT

Generation & Consonant are significant
• G5 > G3, G2 > G1 (p<.001)
• k > p, t (p<.001)

Montreal English VOT (Fowler 2008)
✓ Change toward English

Homeland comparison?

Italian VOT

Generation & Consonant are significant
• BUT G1 > G2, G3 (p<.01)
• k > t > p (p<.01)

Montreal (Fowler 2008) &
Toronto (Hoffman & Walker 2012) English VOT
X Change toward English

Cosenza Italian VOT (Sorianello 1996)
X Change from Homeland
VOT: all 3 languages

Social Factor Effects: EOQ & VOT
**Ethnic Orientation subsets**

- **Language Choice**: Actual and preferred language choice
- **Family Language**: Language use with family
- **Ethnic identity**: Ethnic self-identification
- **Reading/Writing**: Language choice for reading & writing
- ** Discrimination**: Is there a lot of discrimination against your culture?

<table>
<thead>
<tr>
<th></th>
<th>Language choices</th>
<th>Cultural envir.</th>
<th>Lg. use</th>
<th>Cultural choices</th>
<th>Discrimination</th>
<th>VOT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnic ID</td>
<td>0.23</td>
<td>0.10</td>
<td>0.30</td>
<td>0.29</td>
<td>0.01</td>
<td>-0.35</td>
</tr>
<tr>
<td>Language choices</td>
<td></td>
<td>0.81*</td>
<td>0.21</td>
<td>0.20</td>
<td>-0.11</td>
<td>0.22</td>
</tr>
<tr>
<td>Cultural envir.</td>
<td></td>
<td></td>
<td>0.25</td>
<td>0.12</td>
<td>-0.17</td>
<td>0.36</td>
</tr>
<tr>
<td>Lg. use</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.10</td>
<td>-0.02</td>
</tr>
<tr>
<td>Cultural choices</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.08</td>
</tr>
<tr>
<td>Discrim.</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

*Strong & significant correlation (also within each language)*

EOQ data from ITA, RUS & UKR (114 speakers)
VOT data from 16 speakers

Nagy / HUC / Road Less Travelled
VOT Summary

• For UKR & RUS, we see drift from the homeland (short-lag) toward the English (long-lag) VOT targets. BUT for ITA it’s the opposite.

• (Even by 3rd generation,) English hasn’t completely over-taken the homeland patterns.

• No measure of EOQ correlates to VOT

Digging deeper into EOQ – How?

(1) All 37 questions individually
  • too much for multivariate analysis
  • problematic – not everyone answers all questions

(2) Average of all 37 questions
  • NEVER comes out significant for any variables we checked

Subsets of questions – Questions can be grouped by:

(3) Topic (Keefe & Padilla 1987)
(4) Reference Group (Boyd, Walker & Hoffman 2011)
(5) Language Use (Chociej 2010)
**Correlations**

(Lack of) correlation across EOQ answers

Friends
Work discrim.
Lg. choice & preference
Lg. use
Birthplace
Parents
Grandparents
Partner
Cultural Attitudes & Gen'l. Discrim.
Housing discrim.

**Correlations: Linguistic Variables and EO**

<table>
<thead>
<tr>
<th>Significant components</th>
<th>VOT</th>
<th>Ø-subject</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All</td>
<td>UKR</td>
</tr>
<tr>
<td>Average of all 35 Qs</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>Topic method</td>
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<tr>
<td>Birthplace; LgUse; LgChoice</td>
<td>0.91</td>
<td>ns</td>
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<tr>
<td>Parents’ Ethnicity&amp;LgUse; Gen’l Discrim</td>
<td>ns</td>
<td>ns</td>
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<tr>
<td>Culture; Personal Discrim</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>Econ Discrim</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>Grandparents</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>Reference group method</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grandparents&amp;Lg.w/Friends; Birthplace</td>
<td>ns</td>
<td>ns</td>
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<tr>
<td>Culture; Personal Discrim</td>
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<td>ns</td>
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<tr>
<td>Ethnicity of Personal Network; Family Lg</td>
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<td>EconDiscrim</td>
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<tr>
<td>Parents’ Lg &amp; Imm; Gen’l. Discrim</td>
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<td>ns</td>
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<tr>
<td>Ethnicity of Work Network</td>
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<td>ns</td>
</tr>
<tr>
<td>Language use method</td>
<td></td>
<td></td>
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<tr>
<td>Language Mixing</td>
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<td>ns</td>
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<tr>
<td>Ethnic Continuum</td>
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</tbody>
</table>
Mixed Effects Model: VOT and EO

Method
1. Mixed Effects Model
   a) lx. factors as fixed effects
   b) speaker, word as random effects
   c) try each factor, represented by regression coefficient from PCA (of all HL data), individually
   d) final run with lx. factors, random effects, and all EO factors that had come out as significant in (c).
2. The EO factors below are significant (though with TINY effects, so far).

<table>
<thead>
<tr>
<th>VOT in HLs</th>
<th>3 lgs. combined</th>
<th>UKR</th>
<th>ITA</th>
<th>RUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grouped by Topic</td>
<td>ParentsEthnicity&amp;LgUse; Genl.Discrim</td>
<td>Parents'Ethnicity&amp;LgUse; Genl.Discrim</td>
<td>(no sig. effects)</td>
<td>(not enough data)</td>
</tr>
<tr>
<td>Econ.Discrim</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>all 35 Qs</td>
<td>Birthplace, School location, parents’ lg., lg. preference</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What are HLs like?

- Pro-drop showed HLs remaining very similar to homeland variety, in terms of both rate and conditioning factors
- VOT showed HLs diverging, under influence of contact with English, in 2 of 3 HLs, in terms of rate. Conditioning factors are currently under investigation in LIN 1256.
- It is not consistently the case that there is more variation in HLs than in homeland varieties.
- HLs may remain the same as, or diverge from their source language... they can tell us a lot about contact effects
## Next steps

<table>
<thead>
<tr>
<th>Variables</th>
<th>Heritage Languages</th>
<th>ENG comparison</th>
<th>Homeland comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>segmental phonetics</td>
<td>ITA</td>
<td>KOR</td>
<td>HEB</td>
</tr>
<tr>
<td>verbal paradigm</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>O-subject discourse</td>
<td>P</td>
<td>P</td>
<td>P</td>
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<tr>
<td>markers</td>
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<td>P</td>
<td>P</td>
</tr>
<tr>
<td>lexical borrowing</td>
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<td>P</td>
<td>P</td>
</tr>
</tbody>
</table>

√ = done  I = in progress  P = planned

### In the future
- (de-)gemination & cluster reduction
- segmental deletion/devoicing
- vowel space
- vowel reduction
- high rising terminals (uptalk)
- paradigm leveling (aspect, gender, case)
- word-order changes
- *like*-like fillers and VOQs
References


References (continued)


References (continued)


Polinsky, M. 2012. What linguistics can learn from heritage languages: Research questions and research methods. Conference on Formal Approaches to Heritage Languages, Amherst College.


References (continued)


Siemund, P. & N. Kintana. 2008. Language Contact and Contact Languages. Amsterdam: Benjamins


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