Similar production, different perception: Social meaning in cross-linguistic speech perception

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Sociophonetics, Gender, & Sexual Orientation

• Phonetic variation can serve as a robust cue to both speaker gender identity and sexual orientation.
  – These social meanings are indexed regardless of the speaker’s actual identity (some straight men ‘sound gay’, etc.)

• Interestingly, some of these cues appear to be cross-linguistic.
  – e.g., sibilants, especially /s/
/s/ Variation and Gayness

• /s/ US & UK Englishes (the ‘gay lisp’)
  Campbell-Kibler 2011; Crist 1997; Levon 2007, 2014; Munson 2007; Munson et al. 2006; Podesva & Hofwegan 2016; Zimman 2017

• /s/ Other Languages

• Compared to straight men, gay men’s /s/
  – Higher Centre of Gravity (CoG) (Niebuhr et al. 2011: 10)
  – Negative Skewness
    (c.f. Munson et al. 2006; Munson 2007; Zimman 2013)
Today’s Talk
Today’s Talk

1. Few studies have looked at this variation in **French** or **German**, and,

2. Few studies have considered bilingual or cross-linguistic recognition of indexical cues (but see Vaughn 2014; Szakay et al. 2016).

3. **TODAY:**
   - **F & G** speakers: /s/ indexicality in production?
   - **F, G, & Eng** listeners: /s/ indexicality in perception?
     - Both in native language and cross-linguistically
       
       *(i.e. non-native F/G, English, & Estonian)*
French and German Production – Boyd 2017

• White / Highly Educated / Middle Class / Cis-Gendered Male / Millennials (age 21-30)

• L1 French or German (19 Speakers)
  – French: 4 Gay; 4 Straight
  – German: 7 Gay; 4 Straight

• L1 & L2 English
Results:

- Both French and German speakers vary /s/ according to sexual orientation (much like English).
- Higher /s/ CoG (and more negative skew) appears to be an indexical marker of gay identity (at least in production)
French and German Production – Boyd 2017
**Q:** “Can you tell if someone is gay by how they speak?”

<table>
<thead>
<tr>
<th>“Something in Speech”</th>
<th>Prosody</th>
<th>/s/ in English</th>
<th>/s/ in L1</th>
</tr>
</thead>
<tbody>
<tr>
<td>18/19</td>
<td>13/19</td>
<td>1/19</td>
<td>0/19</td>
</tr>
</tbody>
</table>

‘Oh, I’ve heard of [the “gay lisp”] in English, but we definitely don’t have it’ – German Gay
Core Questions

• To what extent might French and German listeners use /s/ variation as a cue to perceiving someone as gay?

• Do socio-indexical cues tied to /s/ variation extend cross-linguistically to languages the listener is (un)familiar with?
Methods

• Levon (2006, 2007) & Pharao et al. (2014)
• Matched-Guise Test (Lambert et al. 1960)
  – Three [s] guises: [s-], [s], & [s+]
  – Three pitch guises: low-, mid-, & high-
  – One speaker per language stimuli set
• Audio from read speech
  – English (Essex): Snow White
  – French (Lyon): Le Petite Chaperon Rouge
  – German (Düsseldorf): Rotkäppchen
  – Estonian (Püünsi): Venevere Muinasjutt
### Stimuli – /s/ guises

<table>
<thead>
<tr>
<th>/s/ Guise</th>
<th>CoG</th>
<th>Skew</th>
</tr>
</thead>
<tbody>
<tr>
<td>[s-]</td>
<td>5208</td>
<td>1.1502</td>
</tr>
<tr>
<td>[s]</td>
<td>6436</td>
<td>0.033</td>
</tr>
<tr>
<td>[s+]</td>
<td>7988</td>
<td>-1.0795</td>
</tr>
</tbody>
</table>

- 4+ instances of /s/ per segment
- Not controlled for medial/onset/coda
- Matched for intensity & duration of original speech

![Stimuli Screenshot](image.png)
Stimuli – Pitch Guises

• Comparison Variable

• Segments containing no sibilants (/s/, /z/, /ʃ/)

• Mid pitch
  – Very minor manipulation which averaged pitch across all speakers

• Low- & high- pitch guises
  – Adjusted mid pitch by ±25Hz
Methods

• Online via Qualtrics
  – 23 German participants
  – 32 French participants
  – 27 English Participants

• Guises rated on 6 semantic differentials:
  – Educated/Uneducated
  – Straight/Gay
  – Lazy/Hardworking
  – Friendly/Unfriendly
  – Masculine/Effeminate
    (German: Maskulin/Feminin*)
  – Natural/Synthetic
Analysis

• Estimated pseudomedians and confidence intervals via Hodges-Lehman estimator
  – Linguistic feature (/s/ or pitch)
  – Stimulus language
  – Rating scale

• P-values: one-sample Mann-Whitney U tests
  – Adjusted for multiple comparisons using the Holm-Bonferroni method
French Results

French listener's rating differences (hi-mid)

null result for /s/ manipulation.
French Results

French listener's rating differences (hi-mid)

<table>
<thead>
<tr>
<th>label</th>
<th>english</th>
<th>estonian</th>
<th>french</th>
<th>german</th>
</tr>
</thead>
<tbody>
<tr>
<td>effeminate</td>
<td>-1.0</td>
<td>-0.5</td>
<td>0.0</td>
<td>0.5</td>
</tr>
<tr>
<td>gay</td>
<td>1.0</td>
<td>1.5</td>
<td>1.0</td>
<td>1.5</td>
</tr>
<tr>
<td>educated</td>
<td>-1.0</td>
<td>-0.5</td>
<td>0.0</td>
<td>0.5</td>
</tr>
</tbody>
</table>

p-values
- p(adj) > 0.05
- p(adj) < 0.05
German Results

Null result for /s/ manipulation.
German Results

German listener's rating differences (hi-mid)

<table>
<thead>
<tr>
<th>Label</th>
<th>Estimate</th>
<th>p-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estonian</td>
<td></td>
<td></td>
</tr>
<tr>
<td>French</td>
<td></td>
<td></td>
</tr>
<tr>
<td>German</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- p(adj) > 0.05
- p(adj) < 0.05
Listener Variability

French listeners’ “Gay” rating differences: [s]
Sanity Check: English

Results seen for both pitch and /s/ manipulation
Sanity Check: English

Positive effect for the same stimuli for English listeners.
All together now

- **p-values**
  - ⭕ p(adj) > 0.05
  - ⭖ p(adj) < 0.05

- **listener**
  - English
  - French
  - German
Summary

• /s/ results:
  – French and German listeners do not hear [s+] as “gay” or “effeminate”
  – Contrast to English listeners who hear it as “gay sounding” in native lang. stimuli as well as other languages (i.e. indexical transfer from English to other languages)

• No effects seen for listeners’:
  – Sexual orientation or gender
  – English (or other) language ability
Discussion

• The results show a mismatch between production and perception of /s/ indexicality for both French & German gay/straight identity.

  – This was for own-language, but also other-languages, regardless of proficiency (cf. English listeners).

• Hence, “Similar production – Different Perception”
Discussion
Discussion
Discussion


**Discussion**

- Our evidence supports the observation that indexicality in production precedes indexicality in perception:
  - Indexical orders rely on “recognition” (Agha 2003) of signs as *being signs*, i.e., as marking stylistic distinctiveness (Irvine 2001).
  - French/German [s+] currently has “meaning potential” (Eckert 2016), waiting for its “baptismal moment” (Silverstein 2003) to be taken up as an index of gay identity.
Thank You!

• Thanks for your attention!

• Special thanks to our translators
  – Mirjam Eiswirth (German); University of Edinburgh
  – Michaël Gauthier (French); University of Lyon 2

• Additional thanks to:
  – Our pilot participants for their invaluable feedback
  – Members of the Language Variation and Change Research Group at the University of Edinburgh

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References Available upon request 30
Extra Slides
Testing (e.g. German)

Experimental Phase

L1 German Test
Randomiser

French
English
German

Randomised /s/ & Pitch

German
Randomiser

French
English
Estonian

Randomised /s/ & Pitch
Randomised /s/ & Pitch
Randomised /s/ & Pitch
Listener Variability

English listeners' gay rating differences: [s]
### Respondents

<table>
<thead>
<tr>
<th>Survey Language</th>
<th>Total</th>
<th>Native Language ≠ Survey Language</th>
<th>Remaining participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>German</td>
<td>27</td>
<td>4</td>
<td>23</td>
</tr>
<tr>
<td>French</td>
<td>44</td>
<td>12</td>
<td>32</td>
</tr>
<tr>
<td>English</td>
<td>30</td>
<td>3</td>
<td>27</td>
</tr>
</tbody>
</table>

German Listeners’ Birthplace:  
Austria (N=13); Germany (N=11); Italy (N=1); Switzerland (N=1); unknown (N=1)

French Listeners’ Birthplace:  
Belgium (N=1); Canada (N=4); France (N=26); Switzerland (N=1)

English Listeners’ Birthplace:  
Australia (N=1); New Zealand (N=1); United Kingdom (N=9); United States (N=16)
Methods

• Four stimuli languages
  – one speaker per language

<table>
<thead>
<tr>
<th>Speaker</th>
<th>Straight/Gay</th>
<th>Masc./Effem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>English (Essex)</td>
<td>1.733</td>
<td>2</td>
</tr>
<tr>
<td>French (Lyon)</td>
<td>2.866</td>
<td>2.333</td>
</tr>
<tr>
<td>German (Düsseldorf)</td>
<td>2.333</td>
<td>1.866</td>
</tr>
<tr>
<td>Estonian (Püünsi)</td>
<td>2.333</td>
<td>2</td>
</tr>
</tbody>
</table>
Other Future Directions

• Listeners were very diverse with respect to regional dialect/accent background.
  • English listeners were raised in Australia (N=1), New Zealand (N=1), the UK (N=9), and the US (N=16).
  • French listeners were from Belgium (N=1), Canada (N=4), France (N=26), and Switzerland (N=1).
  • German listeners were from Austria (N=13), Germany (N=11), Italy (N=1), Switzerland (N=1), or unknown (N=1).

– **Future:** Control for region (especially given known differences in English; Stuart-Smith 2017).
Discussion

• However, the speakers who produced the distinction were not the same people who responded to the perception survey.
  – Future: Production/Perception within the same participant group.

• This matters for understanding the mechanism behind production/perception mismatches:
  – e.g., in phonetics/phonology (e.g., near-mergers)
    • Note: near-merger is *within* the same speaker-listener
Stimuli – Pitch Guises

• Segments containing no sibilants (/s/, /z/, /ʃ/)
• Mid pitch
  – Manipulated within ±5Hz across all speakers
• Low- & high- pitch guises
  – Adjusted mid pitch by ±25Hz
• Estonian pitch

Estii low Estii mid Estii high
French and German Production – Boyd 2017

![Graph showing CoG in Hz for French and German names]

- **Orientation**
  - Gay
  - Straight
Skewness ~ Orientation + Nationality + NativeLang
CoG ~ Orientation + Nationality + NativeLang