Similar production, different perception

Citation for published version:

Link:
Link to publication record in Edinburgh Research Explorer

General rights
Copyright for the publications made accessible via the Edinburgh Research Explorer is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy
The University of Edinburgh has made every reasonable effort to ensure that Edinburgh Research Explorer content complies with UK legislation. If you believe that the public display of this file breaches copyright please contact openaccess@ed.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.
Similar production, different perception: Social meaning in cross-linguistic speech perception

Zac Boyd, Josef Fruehwald, & Lauren Hall-Lew

The University of Edinburgh

@ZacBoyd, @JoFrhwld, @dialect

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 Engishes
  Campbell-Kibler 2011; Grist 1997; Levon 2007, 2014; Munson 2007; Munson et al. 2006; Podesva & Hofweegen 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

$s+$

$s+$

$s+$
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 listeners: /s/ indexicality in perception?
     - Both in native language and cross-linguistically (i.e. non-native G/F, 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

French and German Production – Boyd 2017

• Results:
  - Both French and German speakers vary /s/ according to sexual orientation.
  - 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 these socio-indexical cues 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 (Püüns): *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 – 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
• Guises rated on 6 semantic differentials:
  – Educated/Uneducated
  – Straight/Gay
  – Lazy/Hardworking
  – Friendly/Unfriendly
  – Masculine/Effeminate
    (German: Masculin/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.
German Results

Null result for /s/ manipulation.

Sanity Check: English

Results seen for both pitch and /s/ manipulation.
All together now

Graph of All three languages together on /s/ stimuli

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, “Gay and Straight French and German Men Use Different /s/-es but Don’t Perceive Them Differently”
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 you 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

Twitter: @ZacBoyd_ @JoFrhwld @dialect References Available upon request
Extra Slides

Testing (e.g. German)

Listener Variability

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>
</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=20); Switzerland (N=1)
Methods

• Four stimuli languages
  – one speaker per language

<table>
<thead>
<tr>
<th>Pretest Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>(7pt Likert Scale)</td>
</tr>
<tr>
<td>Speaker</td>
</tr>
<tr>
<td>English (Essex)</td>
</tr>
<tr>
<td>French (Lyon)</td>
</tr>
<tr>
<td>German (Düsseldorf)</td>
</tr>
<tr>
<td>Estonian (Püünsi)</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

• “Filler Stimuli”
• 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