Individual differences in matched guise performance

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Matched guise paradigm

• Elicits social evaluation of a talker in “guises” differing minimally along a linguistic dimension
• Probe social meanings of sociolinguistic variables
• Campbell-Kibler (2008) shows that ING (workin’ ~ working) interpreted differently depending on listener’s overall perception of a talker
• Today: range of listener reactions to a single indexical meaning of /ing/ – intelligence
Current study motivations

• Part of larger project: Cognitive Characteristics of the Leaders of Language Change

• Looking for cognitive and personality-based predictors of individuals’ participation in ongoing sound changes (following e.g. Yu 2013)

• Goal with matched guise task is to develop a general measure of sociolinguistic sensitivity, independent of evaluation of changes

• ING chosen for its widespread availability and sociolinguistic salience
Stimulus creation

• 16 sentence-length utterances from white working-class speakers in Philadelphia Neighborhood Corpus
• Distractor utterances also taken from PNC; mix of novel speakers and distinct (non-ING) utterances from talkers in critical trials
• One token of ING per critical utterance
  – Half originally contained /ing/, half /in/ (carrier)
• Opposite-variant guise created by splicing in an instance of the variant from same phonological context elsewhere in same interview
Stimulus creation

/ing/ carrier

/in/ donor

/in/ guise
Experimental design

Continuous presentation – block design not apparent to participants

Block one

`/ing/ guise`

`/in/ carrier`

`/in/ guise`

`/ing/ carrier`

8 non-critical voice distractors

Block two

`/in/ guise`

`/in/ carrier`

`/in/ carrier`

`/ing/ carrier`

16 non-critical-voice distractors

6 critical-voice distractors
Stimulus presentation

Replayable recording

“How friendly does this person sound, on a scale of 1-7?”

“How smart does this person sound, on a scale of 1-7?”

“How have you heard this person’s voice before during the course of this experiment?”
Stimulus presentation

- Task described as testing memory for voices
- Repeating voices creates a plausible reason for repeating utterances, allowing within-subjects design
- Guise-paired utterances 17-34 trials apart
Pilot with Penn students

• Piloted with 34 Penn students (2 excluded) from psychology subject pool
• Ratings normalized within participant (including distractor ratings)
The guise (lack of) effect

Normalized rating

/in/ guise

/ing/ guise
Regression modeling

<table>
<thead>
<tr>
<th></th>
<th>Estim.</th>
<th>Std. err.</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.30</td>
<td>0.28</td>
<td>1.05</td>
</tr>
<tr>
<td>/ing/ guise</td>
<td>0.09</td>
<td>0.06</td>
<td>1.48</td>
</tr>
<tr>
<td>/ing/ carrier</td>
<td>0.004</td>
<td>0.10</td>
<td>0.05</td>
</tr>
<tr>
<td>Repetition</td>
<td>-0.18</td>
<td>0.10</td>
<td>-1.87</td>
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<tr>
<td>Duration</td>
<td>-0.0006</td>
<td>0.04</td>
<td>-0.01</td>
</tr>
<tr>
<td>Male talker</td>
<td>0.17</td>
<td>0.25</td>
<td>0.71</td>
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<tr>
<td>Male participant</td>
<td>-0.22</td>
<td>0.06</td>
<td>-3.62</td>
</tr>
<tr>
<td>Trial number</td>
<td>0.005</td>
<td>0.003</td>
<td>1.68</td>
</tr>
<tr>
<td>/ing/ guise : /ing/ carrier</td>
<td>-0.08</td>
<td>0.08</td>
<td>-0.93</td>
</tr>
<tr>
<td>Male talker : male listener</td>
<td>0.21</td>
<td>0.09</td>
<td>2.22</td>
</tr>
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</table>

Treatment-coded contrasts and by-talker random intercept
Guise differences: Penn students
Why the effect reversal?

• Inspected by-item response patterns from participants with “reversed” guise effects
• Tentatively: items driving the reversal contain content dealing with educational struggles such as expulsion
• May involve positive appraisal of /in/ guise as congruent with utterance content
• More generally, may involve assessment of /in/ guises as congruent with Philadelphia accent
• Reminiscent of results from Campbell-Kibler 2008
The next step

• Same matched guise experiment with Philadelphians
• Extract individual guise difference measures and relate to:
  – Participation in a change in progress
  – Metalinguistic phonemic awareness
Change from below in /eyC/

- Raising of /ey/ before consonants
- Does not reverse mid-century like other Philly sound changes (Labov et al. 2013)
- Does not show educational stratification (Prichard 2016)
- Never mentioned in meta-discussion of Philly accent

from Labov et al. 2013
Metalinguistic phonemic awareness

- Phoneme reversal task from Moran & Fitch (2001)
- Lowest mean and widest score range of PA tasks
- 20 items; scores range from 0-14

Stimulus: “kiss”

Target response: “sick”
Pilot with Philadelphian women

- 20 young women recruited in friendship pairs
- 30 minute dyadic conversation without interviewer present
- F1 of /eyC/ tokens measured by hand in Praat
- Individual differences battery including the matched guise experiment
- Battery also includes a phonemic awareness task
Guise differences: Philly women
Inverse correlation with /eyC/ raising

\[ r = -0.29, p = 0.21 \]
Inverse correlation mediated by metalinguistic awareness

Low phonemic awareness

High phonemic awareness

\[ r = -0.03, \ p = 0.92 \]

\[ r = -0.70, \ p = 0.02 \]
Inverse correlation mediated by metalinguistic awareness

- Among speakers with low phonemic awareness, no relationship between matched guise performance and /eyC/ raising
- Among speakers with high phonemic awareness, individuals who show a larger ING guise difference are less advanced in /eyC/ raising
- Makes some sense that phonemic awareness may potentiate relationship between sociolinguistic evaluation and participation in change…but recall this is change from below!
Summary

• Individuals differ in their evaluation of ING when listening to Philly-accented conversational speech
  – Consistent with prior work; needs more exploration

• Individual differences in matched guise performance relate to participation in an unrelated change
  – Step towards general measure of sociolinguistic sensitivity?

• Interaction of metalinguistic awareness and sociolinguistic awareness
Thank you!

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Language Variation and Cognition Lab
http://sites.sas.upenn.edu/tamminga-lab
Instructions

In this experiment, you will listen to an audio clip and answer the questions about the person’s voice you heard. The questions will be the same in every block with different clips. If the same person’s voice appears twice, it may be the same exact or a different recording as heard previously.

Your job is to recognize if you hear the same person’s voice in different clips throughout the experiment and answer the questions about their personality.

This survey takes 15 - 30 minutes of your time.

The sound will play automatically when you click on the next button. After listening once, you may click play to listen to the clip again if you choose. You may adjust the volume as you please.
Gender effects

Normalized rating

n.s.

t = -3.1

t = 2.4
Other components of individual differences battery

- Perceptual compensation (Norris et al. 2003)
- Automatic phonetic convergence (Shockley et al. 2004)
- Forward digit span (verbal working memory)
- Gaze cueing (joint attention sensitivity) (Friesen & Kingstone 1998)
- Interpersonal Reactivity Index (Davis 1983)
- Iowa-Netherlands Comparison Orientation Measure (Gibbons & Buunk 1999)
- Self-Monitoring Scale (Snyder 1974)