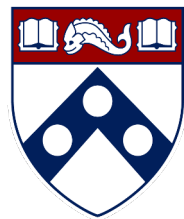


Can phonological variant choices be primed in perception and production?

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Variant Persistence

Persistence:

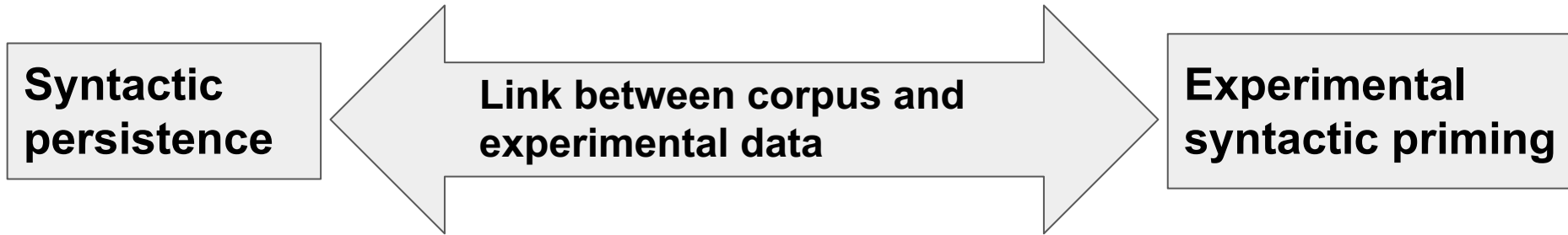
When language users produce sociolinguistic variation in everyday conversation, they tend to reuse the same linguistic variant that they have recently used or been exposed to (Szmrecsanyi, 2006; Clark, 2014; Tamminga, 2016; Li & Tamminga 2021)

Variant Persistence

- Persistence has been observed at different levels of grammar (Sankoff, 1978; Abramowicz, 2007; Tamminga, 2016; Clark, 2018; Villarreal, 2022)
- A common interpretation:

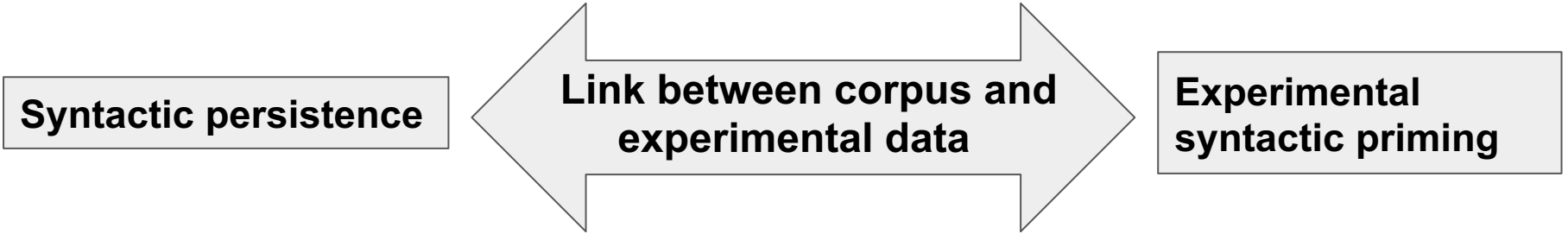
Persistence may be driven by priming, in the psycholinguistic sense of repetition being facilitated in processing (Clark, 2018; Tamminga, 2016, 2019; Pickering & Garrod, 2017)

Persistence and priming



Similarities empirical properties (Bock, 1986; Pickering, 1999; Pickering, 2008)

Persistence and priming



Persistence and priming



Phonological persistence

e.g., /t/-flapping (Clark, 2018)
DH-stopping (Tamminga, 2014)
[f]-[θ] (Clark, 2014)

Persistence and priming

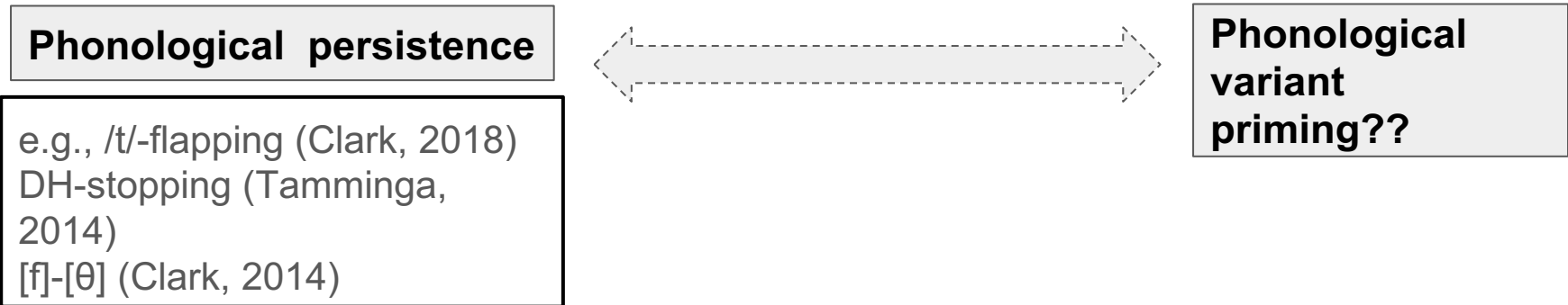


Phonological persistence

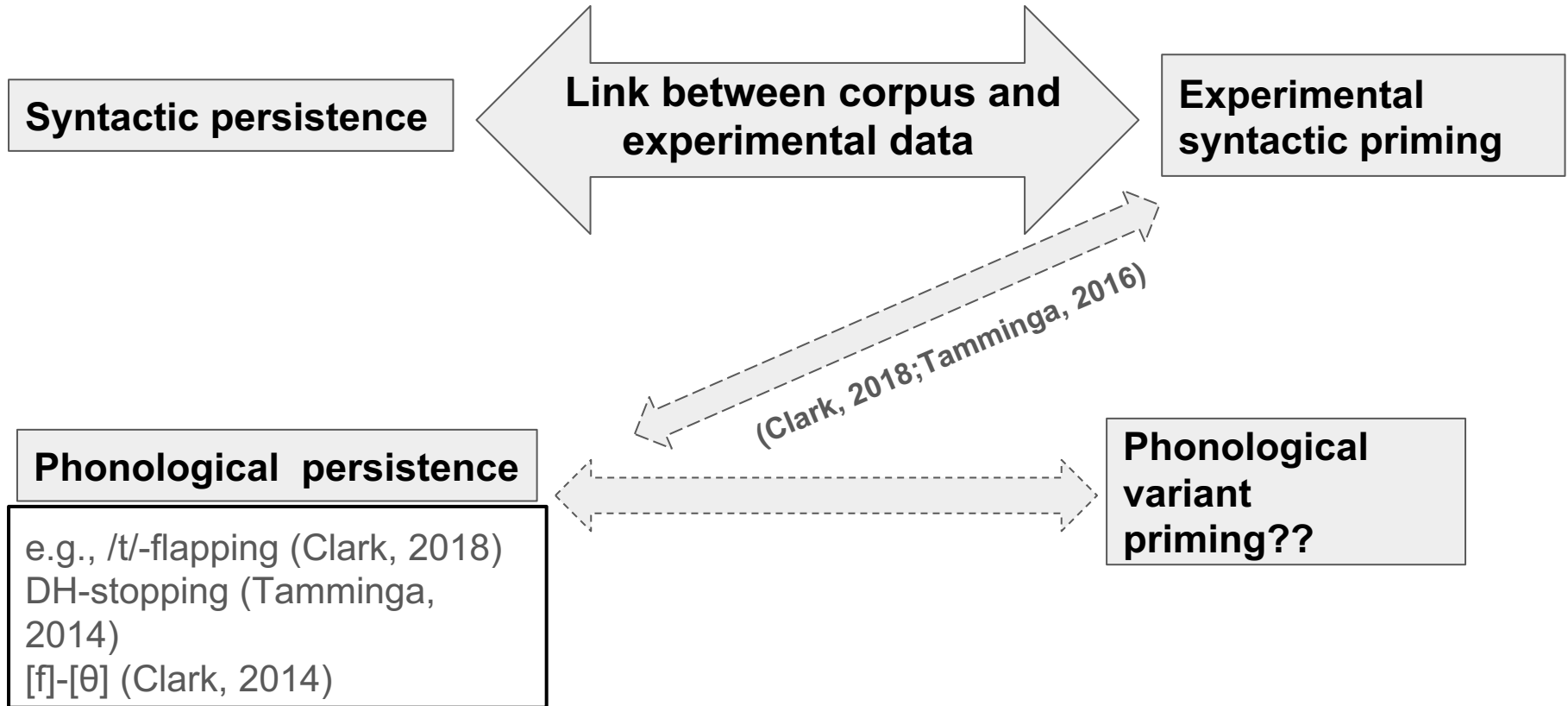
e.g., /t/-flapping (Clark, 2018)
DH-stopping (Tamminga, 2014)
[f]-[θ] (Clark, 2014)

Phonological variant priming??

Persistence and priming



Persistence and priming



The current study

Research question: can discrete phonological variant choices (-in' vs. -ing) be experimentally primed in speech perception and production?

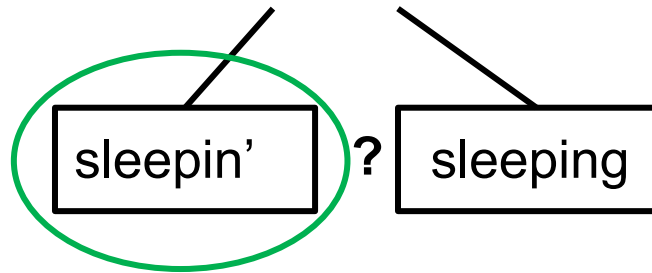
Variant priming: categorization task

Variant priming in categorization: Hypothesis

Hearing one variant of (ING) will make listeners more likely to perceive the same variant given an ambiguous target for **categorization**.



workin' (prime) → sleepING (target):



Variant priming in categorization: Design

- Compare two critical conditions

-in'-primed condition: *-in'* (prime) → Target

-ing-primed condition: *-ing* (prime) → Target

Variant priming in categorization: Design

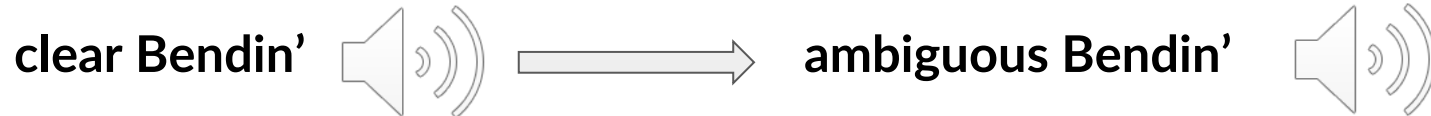
- To prime the perception: **Lexical decision task**
- To perceive variant choices: **forced-choice categorization task**

Categorization of **ambiguous tokens** to force people to make a choice in variable perception: if people don't know for sure which variant they heard, they will have to make a choice in perception.

Variant priming in categorization: Design

- **Ambiguous tokens**

- ideally, people can tell it's ING but not the exact variant
- source-extraction manipulation: vowel identifying information is masked while the intonational contour remains unchanged



Variant priming in categorization: Design

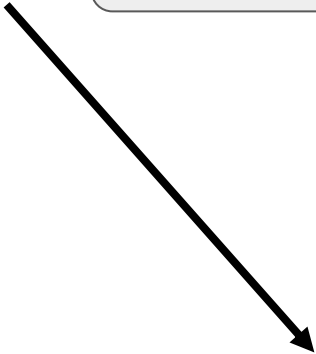
Key
pressing

Prime

Is this a word?
F: Nonword J: Word



Button
clicking



Target

Which word have you heard?



beggin'

begging

Variant priming in categorization: Stimuli

- **critical sequences**

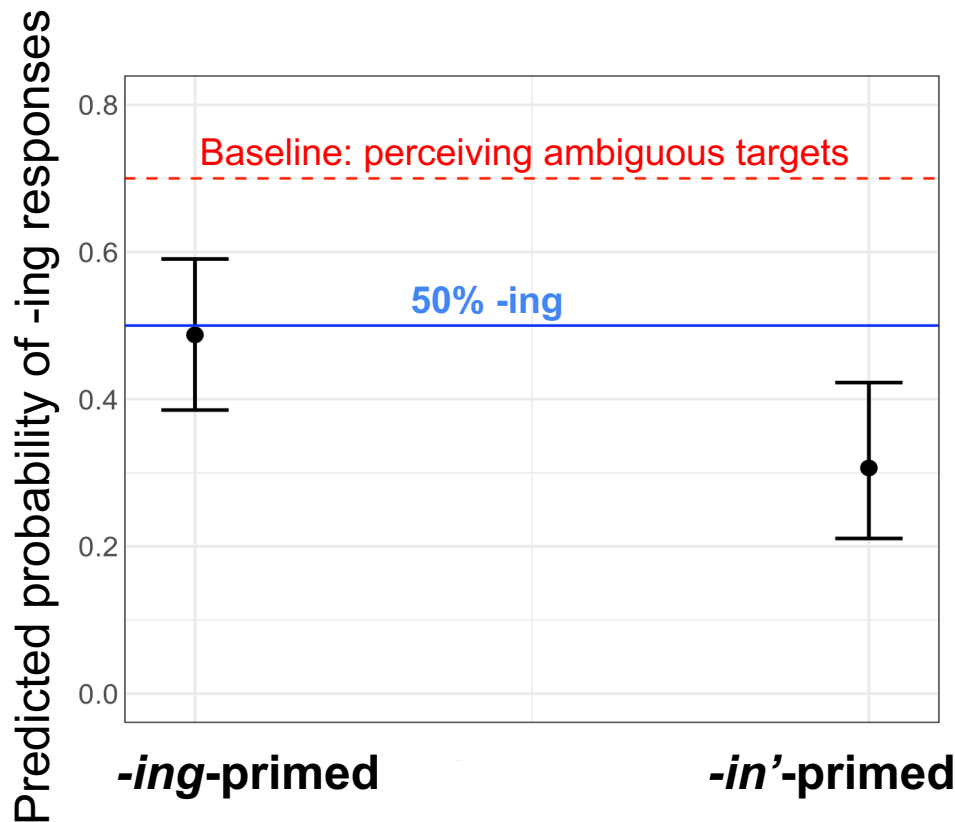
- 38 critical sequences
 - 38 clear primes
 - 38 ambiguous targets

- **filler trials**

- 200 filler trials of various types including distractor sequences (e.g. sequences where targets after *-ing* or *-in'* were not ING)

Variant priming in categorization: Results

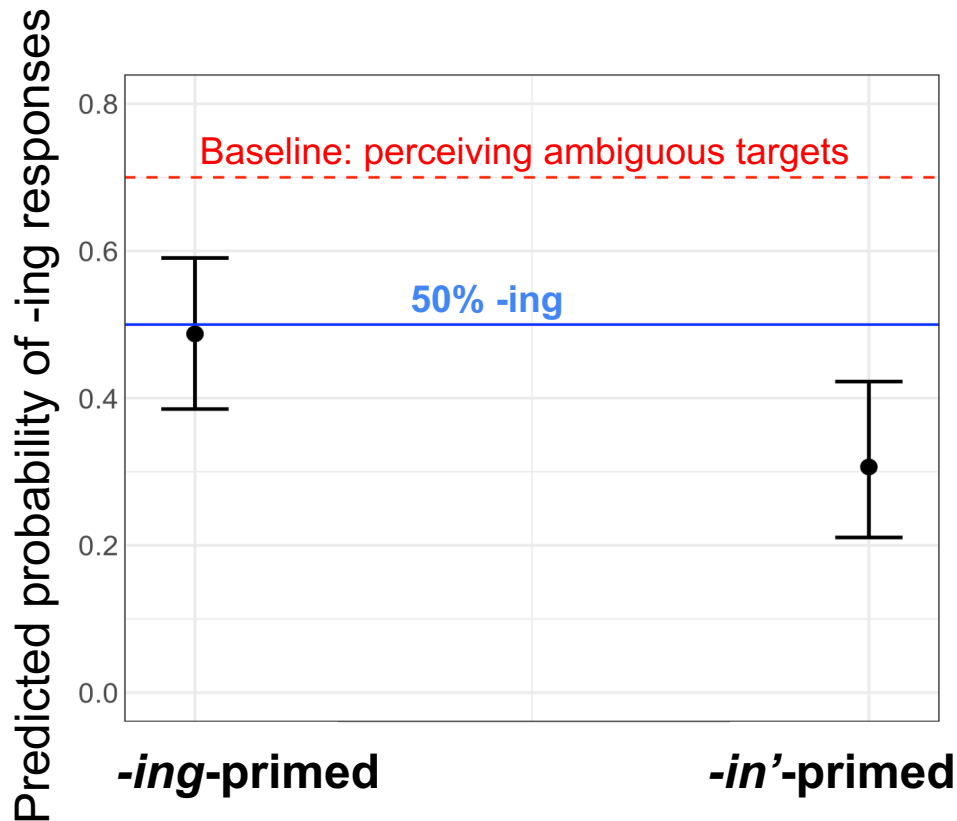
- Significant main effect of Condition ($\beta = 0.77$, $p < 0.001$)
- No other predictors were significant



Variant priming in categorization: Results

- Significant main effect of Condition ($\beta = 0.77$, $p < 0.001$)
- No other predictors were significant

Participants were significantly more likely to categorize an ambiguous target as containing *-ing* when they had just heard an *-ing* variant on the previous trial.



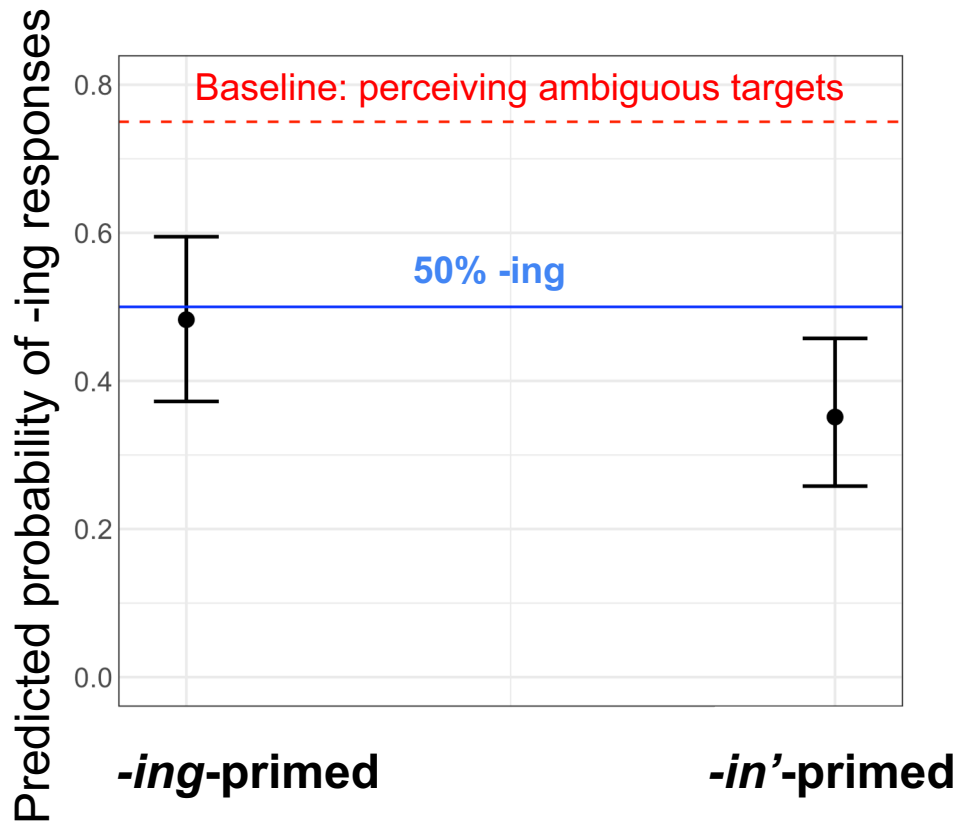
Variant priming: shadowing task

Variant priming in shadowing

- repeated previous set-up except that the categorization task was replaced by a shadowing task
- participants repeated out loud what they heard the model talker say:
 - in'*-primed condition: *-in'* (LD) → Target (shadowing)
 - ing*-primed condition: *-ing* (LD) → Target (shadowing)
- Same stimuli

Variant priming in shadowing: Results

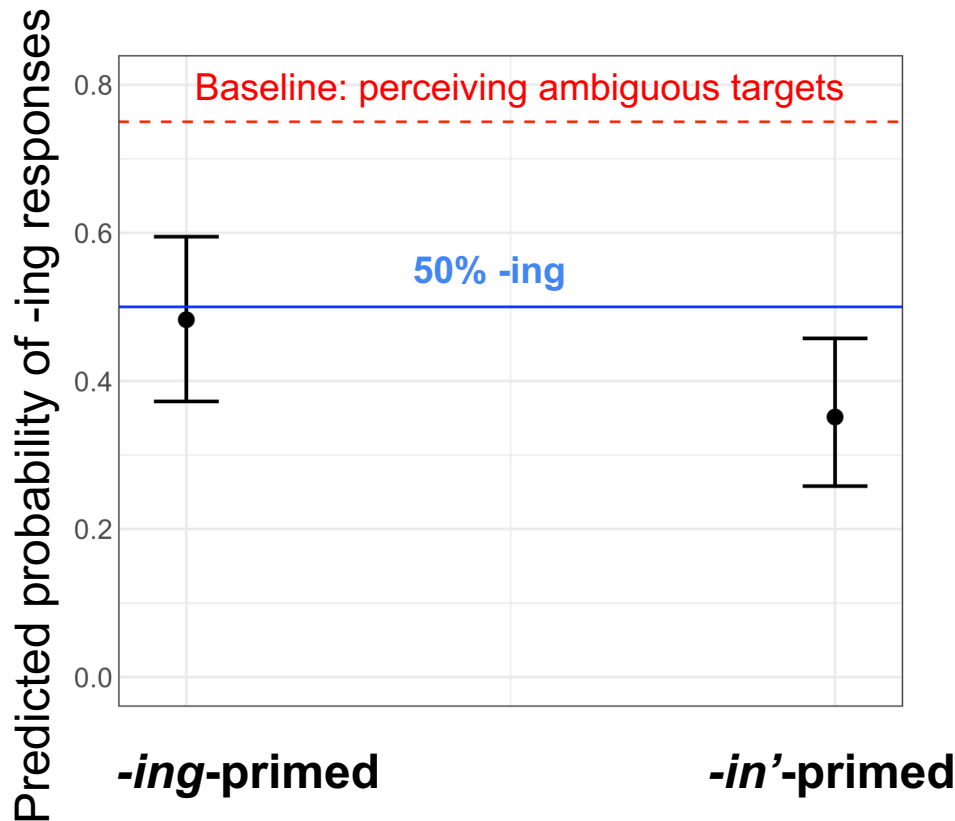
- **Main effect of Condition:**
($\beta=0.55$, $p < 0.001$)
- No significant effect found for Target frequency:
($\beta=-1.42$, $p = 0.15$)



Variant priming in shadowing: Results

- **Main effect of Condition:**
($\beta=0.55$, $p < 0.001$)
- No significant effect found for Target frequency:
($\beta=-1.42$, $p = 0.15$)

Similar to categorization task:
participants were primed when
they were asked to shadow
ambiguous targets.



Discussion & Conclusion

- The variant participants are recently exposed to can influence which variant they perceive subsequently: **phonological variant choices can be primed!**
- The difference between the two conditions cannot be attributed to convergence towards the talker's overall (ING) rate because the conditions do not differ in that rate.

Discussion & Conclusion

- People also appear to be moving toward the overall statistics of the model talker's global *-ing* rate
- This might reflect more holistic convergence toward their global expectations about the model talker

Discussion & Conclusion

- The use of a shadowing task was originally intended to get at whether variant choices in *production* can be primed.
- But the priming effect already shows up in people's perception of the ambiguous targets→ the shadowing task might just be functioning as a different way for participants to report what they think they heard
- The similar results from two tasks support the idea that even the shadowing task might just reflect perception-to-perception priming

Discussion & Conclusion

Overall, our results suggest that phonological variant choices **can be primed**, which makes it plausible that phonological persistence in conversation speech could arise due to priming.

Thank you for your attention!

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