

What do listeners know about the sociolinguistic variable (ING)?  
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The present project investigates the extent to which the systematicity of variability – or “orderly heterogeneity” (Weinreich et al., 1968) – in speech production is used by listeners when perceiving speech. We specifically investigate the English sociolinguistic variable (ING) (e.g. *talking* vs. *talkin*’), whose probabilistic conditioning has been well-described for speech production (cf. Forrest, 2015, Hazen, 2008, Kendall, 2013, Labov, 2001, Tagliamonte, 2004), asking whether listeners are sensitive to such conditioning factors when perceiving the variable (ING).

Previous work has shown that listeners are at least sensitive to variation in (ING) insofar as they assign different social judgments to speakers based on overall use and frequency of (ING) forms (e.g., Campbell-Kibler, 2007, Labov et al., 2011). However, the depth and detail of listeners’ sensitivity to sociolinguistic variation, and the relationship between listener knowledge and speaker knowledge (as listeners are, of course, also speakers) is still largely unknown.

To this end, we conducted a series of experiments where participants listened to sentences and indicated whether the (ING) word in each sentence was realized as *-ing* [ɪŋ] or *-in*’ [ɪn]. Stimuli were produced by four speakers, who each recorded each sentence in both an [ɪŋ] and [ɪn] frame. (ING) words in stimulus sentences were balanced across a range of factors known to influence (ING) realization in production (e.g. grammatical category, phonological environment, word length, frequency, etc.). In some experimental conditions, stimuli were manipulated via splicing (similar to Campbell-Kibler, 2007) so that each participant heard one of two versions of each sentence, which were identical except for the realization of (ING). In other conditions listeners responded to sentences produced in their original [ɪŋ] or [ɪn] frame. In a final set of conditions, listeners responded to sentences where the (ING) form was replaced by noise.

Analyses of accuracy and reaction times reveal that listeners are indeed sensitive to the linguistic conditioning factors of (ING), though many other perceptual and processing factors also affect performance. This talk explores two important aspects of our results.

(1) When responding to the spliced sentences, listeners were significantly less accurate at identifying [ɪn] forms correctly in grammatical categories that strongly disfavor [ɪn] in production (e.g. adjectives, and pronouns “anything” and “everything”). And, this pattern was also observed when the (ING) form was replaced by noise, further supporting the idea that listeners used expectations based on production conditioning to predict (ING) realization.

(2) Further, listeners were significantly more accurate and faster at categorizing stimuli when presented in their original frame than when they had been manipulated via splicing to contain the opposing form (similar to Sumner, 2013). Thus, listeners were able to use knowledge of production norms in perception, but the realization of the variable itself was not the only cue used to identify the realization of the variable. These results indicate that listeners use covarying cues in perceiving how variables are realized, suggesting that variables cluster in constellations and that listeners may use such covariation in speech perception.

## References

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