

Non-local conditioning of variation: Evidence and implications

This paper addresses the representation of variable phenomena in the linguistic systems of individual speakers. We investigate two factors that condition variable phenomena: heaviness [1] and persistence [2, 3, 4, among others]. We argue that these effects, unlike phonological and morphological factors, are best interpreted as extra-grammatical. The implication is that variable phenomena must be the purview of at least two systems: the generative grammar, and a system for language use.

Variable phenomena are often conditioned by factors that also condition categorical phenomena [5, 6, 7]. For example, Guy and Boberg argue that the Obligatory Contour Principle, which triggers invariant phonological processes, also conditions variable t/d-deletion. They suggest that this supports inherent variability [8], motivating a unified treatment of variable and categorical phenomena within the grammar. Accordingly, both sociolinguists and generative phonologists have moved to incorporate linguistic variability into grammatical models.

We observe that variable processes may also be conditioned by factors that do **not** condition categorical phenomena (see also [9]). These factors do not lend themselves readily to a grammatical treatment, forcing us to recognize the possibility of additional loci of variation. In this talk we present two case studies that show both grammatical and extra-grammatical conditioning.

The first case study examines contraction of the auxiliaries *has*, *is*, and *will* after non-pronoun subjects in three corpora: Switchboard [10], Fisher [11], and the Philadelphia Neighborhood Corpus [12]. Each auxiliary's subject was coded for heaviness as measured by length in words, as well as for other internal factors that have been found to condition this variation (e.g. [13]). The data reveal an effect of heaviness on contraction: the longer the subject, the less likely contraction is to occur (Figure 1). This sensitivity to word count is not seen in categorical alternations, which are local in nature [14].

The second case study is the effect of persistence on two morphophonological variables, TD and ING, in the Buckeye Corpus [15]. Persistence is the effect where a recently-used variant is more likely to be used again. In addition to the phonological and morphological factors known to condition these variables (e.g. [16] on TD, [17] on ING), both TD and ING show persistence effects that decay gradually over about a minute (Figure 2). Again, this effect operates outside of a grammatically local domain.

If all variation stems from “an extension of the same processes that generate categorical outputs” [6, p. 163], then conditions on variation should be attested in invariant alternations as well. While many are, the examples in our case studies are not. We propose that the non-locality of these effects is inconsistent with an analysis where all variation originates grammar-internally, and attribute them instead to language use. We sketch a model of language that separates derivation and use, allowing both to be probabilistic. An implication for variationist research is that surface probabilities may reflect combinations of multiple underlying probabilities and should be modeled accordingly.

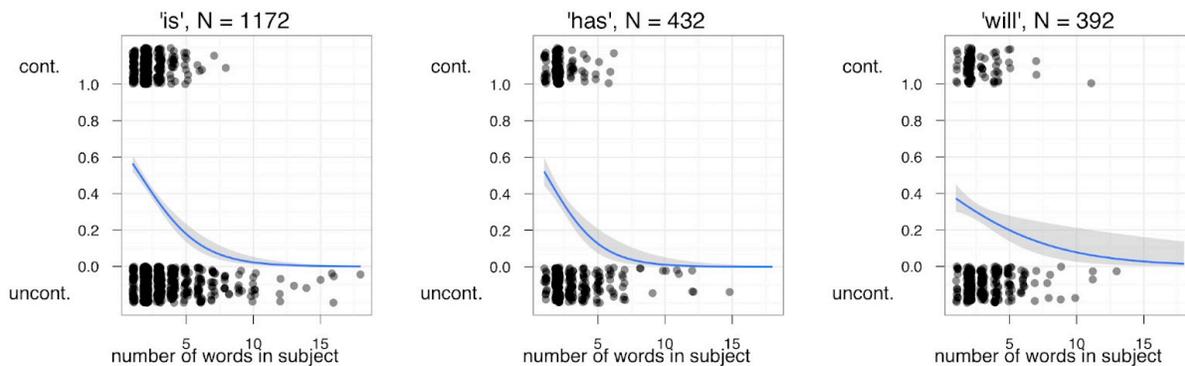


Figure 1. Effect of subject heaviness on contraction of three auxiliaries after non-pronoun subjects. Each point represents one token, coded as contracted or uncontracted. Smoothing line fit via GLM.

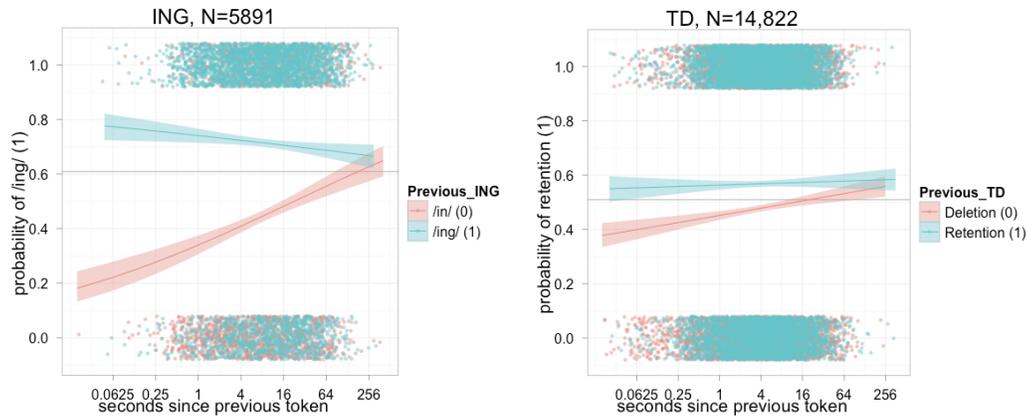


Figure 2. Time-decay of persistence effects on ING and TD; red and blue lines fit with GLM smoothing, gray line indicates overall application value. Each point represents one token, coded as /ing/ (1) or /in/ (0) for ING and retention (1) or deletion (0) for TD.

References

- [1] Wasow, Thomas A. 1997. Remarks on grammatical weight. *Language Variation and Change* 9:81–105.
- [2] Poplack, Shana. 1980. Deletion and disambiguation in Puerto Rican Spanish. *Language* 56: 371–385.
- [3] Scherre, Maria M. P., and Anthony Naro. 2001. Phrase-level parallelism effect on noun phrase number agreement. *Language Variation and Change* 13: 91–107.
- [4] Szmrecsanyi, Benedikt. 2006. *Morphosyntactic persistence in spoken English: A corpus study at the intersection of variationist sociolinguistics, psycholinguistics, and discourse analysis*. Berlin/New York: Mouton de Gruyter.
- [5] Guy, Gregory R. 1997. Competence, performance, and the generative grammar of variation. In *Variation, Change, and Phonological Theory*, ed. Frans Hinskens, Roeland van Hout, and W. Leo Wetzels, 125–144. John Benjamins Publishing Co.
- [6] Guy, Gregory R., and Charles Boberg. 1997. Inherent variability and the obligatory contour principle. *Language Variation and Change* 9:149–164.
- [7] Coetzee, Andries, and Joe Pater. 2011. The place of variation in phonological theory. In *The Handbook of Phonological Theory*, 2nd edition, ed. John A. Goldsmith, Jason Riggle, and Alan C. L. Yu, 401–434. Malden, MA: Blackwell.
- [8] Weinreich, Uriel, William Labov, and Marvin Herzog. 1968. *Empirical Foundations for a Theory of Language Change*. Austin: University of Texas Press.
- [9] Coetzee, Andries, and Shigeto Kawahara. To appear. Frequency and other biases in phonological variation. To appear in *Natural Language & Linguistic Theory*. ROA #1098- 0810.
- [10] Godfrey, John J., and Edward Holliman. 1997. *Switchboard-1 Release 2*. Philadelphia: Linguistic Data Consortium.
- [11] Cieri, Christopher, et al. 2004. *Fisher English Training Speech Parts 1 and 2*. Philadelphia: Linguistic Data Consortium.
- [12] Labov, William, and Ingrid Rosenfelder. 2011. *The Philadelphia Neighborhood Corpus*.
- [13] Labov, William. 1969. Contraction, deletion, and inherent variability of the English copula. *Language* 45:715–762.
- [14] Embick, David. 2010. *Localism versus Globalism in Morphology and Phonology*. Cambridge, MA: The MIT Press.
- [15] Pitt, Mark, Laura Dille, Keith Johnson, Scott Kiesling, William Raymond, Elizabeth Hume, and Eric Fosler-Lussier. 2007. *Buckeye Corpus of Conversational Speech (2nd release)*. Columbus, OH: Department of Psychology, Ohio State University (Distributor).
- [16] Guy, Gregory R. 1980. Variation in the group and the individual: The case of final stop deletion. In *Locating Language in Time and Space*, ed. William Labov, 1–36. New York: Academic Press.
- [17] Labov, William. 1994. *Principles of Linguistic Change: Internal Factors*. Malden, MA: Blackwell.