

## An integrated quantitative approach to the phonology and morphology of ING

Substantial progress has been made in understanding the ING variable (*working~workin'*) in terms of its systematic integration into the speech community (Labov 1968, Trudgill 1972), its social meaning (Campbell-Kibler 2006, 2011), its stylistic patterning (Podesva 2007, Eckert 2008), and even the temporal dynamics of its social perception (Labov et al. 2011). Despite near-continuous scrutiny, however, consensus on its grammatical underpinnings continues to elude researchers. At issue are the questions of whether the primary alternation is phonological (/n/~ɪŋ/) or morphological (*-in~-iŋ*) and, consequently, whether certain words that exhibit variation fall outside the scope of this alternation. In this paper we present new quantitative findings on ING that we argue implicate both phonology and morphology. Specifically, we investigate priming effects (re-use of a recently-used variant) within and across grammatical categories as evidence on the underlying structures.

We auditorily coded 7540 tokens of unstressed <ing> from 126 individual interviews in the Philadelphia Neighborhood Corpus (Labov & Rosenfelder 2011). In addition to coding the dependent variable as /in/ or /ing/, we also employed an updated grammatical classification scheme within a Distributed Morphology framework (Halle & Marantz 1993). The grammatical categories are roots ending with the phonological string /ing/ (Monomorpheme: *ceiling*); noun heads with *-ing* attached above a verb (Gerund: *My making the tacos, She does computer coding*); *-ing* in aspect heads (Progressive: *She was singing; They stayed home studying*); and the quantifiers *something* and *nothing*. We then coded each token for the grammatical category and variant used in the previous instance of unstressed <ing>, allowing us to investigate the influence of the previous token ('prime') on the current token ('target'). We separated the data into 25 subsets, crossing the five grammatical categories for the primes by the five grammatical categories of the targets. Within each subset we calculated target variant rates separately after /in/ and /ing/ in the primes.

We find in all five instances when the grammatical category of the prime and target are matched, /in/ and /iŋ/ each show a strong self-priming effect. For example, use of /in/ in a monomorpheme increases the probability of /in/ in a subsequent monomorpheme, etc. When the prime and target are not grammatically matched, however, priming does not always appear. The gerund and progressive categories prime each other almost as strongly as they do themselves, but monomorphemes show no priming interaction with either of these multi-morphemic categories. Under the psycholinguistic assumption that priming reflects identity of underlying structure (Branigan et al. 1995), this effect would follow from accounts that isolate ING variation to segmentable morphemes. On the other hand, such accounts also exclude the quantifiers, which contain no plausibly segmentable *-ing* morpheme. Yet we do find strong priming between the quantifiers and multi-morphemic categories, a result more consistent with phonological accounts of ING. Taken together, these results are not clearly compatible with existing morphological or phonological accounts of ING, suggesting that the traditional dichotomy between such analyses must be enriched with an understanding of the complex interacting influences of phonology, morphology, and sociostylistic meaning on variation.