What variation reveals about morphology

Gregory Guy
New York University

Variable phonological processes are often sensitive to morphological structure, in that they differentiate between forms that are phonologically similar but morphologically distinct. Thus *mist*, *bold* undergo coronal stop deletion (CSD) at higher rates than homophonous past tense verbs *missed*, *bowled*. Such quantitative differentiation between form classes provides observable evidence about the (unobservable) underlying morphology of those classes. This paper explores the use of quantitative evidence to illuminate or resolve three types of morphological issues: lexical representation, morphological structure, and derivation.

The mental representation of lexical items is illuminated by lexical exceptions to variable phonological processes: certain function words and discourse markers that appear to show the output of the variable process at exceptionally high rates. Thus studies have shown that English *and* occurs without its final coronal stop at a much higher rate than other comparable words like *hand* (80% vs. 29%,), and Caribbean Spanish *entonces*, *pues* ('so, well') show more final *-s* absence than comparable monomorphemic words like *menos* (54% vs. 16%) Such cases indicate that the exceptional forms have multiple underlying representations: /an/ as well as /and/, /entonce/ as well as /entonces/.

The internal morphological structure of lexical items is revealed by differential sensitivity to variable processes. Thus for some speakers, the irregular class of English past tense forms *left*, *kept*, *told* undergo CSD at the same rate as underived words like *lift*, *bold*, indicating that these forms are treated as unanalyzed wholes, without internal structure: /left, told/. Other speakers, however, show systematically lower deletion rates in such words, indicating an analysis that treats the final stop as an affix: /lef+t, tol+d/.

Derivational processes can be revealed by their interaction with other constraints. Thus high lexical frequency is often associated with elevated rates of phonological lenition processes (cf. Bybee 2001). This is true of underived words affected by CSD, but not regular past tense forms. Thus in one corpus we find underived (monomorphemic) deletion rates of 33.9% in high frequency words vs. 18.5% in low frequency items, significant at the $p<.01$ level. For regular past tense forms in the same corpus, the high frequency items show 8.2% deletion, while low frequency forms are not significantly different, at 7.3% ($p>.70$). This suggests that the past tense forms are actively derived in production, not stored in memory; hence they lack the mental representations, or exemplars, that Bybee postulates as the targets that drive high frequency lenition.

Bybee, Joan. 2001. *Phonology and language use*. Cambridge: Cambridge University Press.