

## The Life of Words

We explore variation in lexical use in a corpus of spoken American English, namely LAMSAS (Kretzschmajr et al 1993), using statistical and mathematical modelling techniques suitable for characterising word-use within populations of speakers (see for example, author 2007). The data consist of spoken records obtained from interviews with 1162 people with the aim of capturing the use of words for everyday items, concepts or events such as *wife*, *chair*, *thunderstorm*, *driven*, or *two*. The participants were asked identical sets of questions like “*if the sun comes out after a rain, you say the weather is doing what?*” thereby aiming to elicit responses such as “*clearing(-up)*”, “*fairing-off*” and other variants (Nerbonne and Kleiweg 2003: 2). Here we report analyses of the frequency distributions of lexical items and their variants given in response to fifty such questions. Our interest, located within a cognitive approach to language (Geeraerts 2006, Hopper 1987, Taylor 2002) and cultural evolution is in whether these distributions conform to those expected from a neutral model of word use, in which the frequency of different forms can be described as arising from a Wright-Fisher model of variant or “allele” evolution, or whether it is necessary to posit some mechanism of bias or ‘selection’ in the choice of words that speakers use.

We find that the majority of the word-use frequency distributions deviate significantly from what would be expected under a neutral model of evolution. In all of these cases one or a small number of variants (e.g., *attic*) dominates the distribution, being used far more often than expected by chance given the availability of other forms (such as *garret* or *loft*). In the remaining cases, the different word-variants (for instance, *fire-grates* or *andirons*) are used in frequencies expected under a neutral model, which approximates to an exponential decline in frequency of use from the most to least used. In no case were different words used in equal or even approximately equal frequencies.

These results are relevant to understanding not just how language-use evolves within communities but why some variants come to dominate. Given that frequency effects play such an important role in mental representation and category formation (Bybee 2007, Ellis 2002), analyses of frequency distributions can test more general models of language use and change (Croft 2000). If grammar is understood as an entrenchment of patterns through language use, or as described by Ford, Fox and Thompson, as a “a collection of crystalizations of routines” (2002, p. 120), then a deeper understanding of word-frequencies and their models of use may allow us to begin to identify the forces – both cognitive and social -- that drive language structure and the mechanisms influencing its evolution (Bybee and Hopper 2001).

## References

Bybee, J. (2007). *Frequency of use and the organization of language*. Oxford: Oxford University Press.

Bybee, J. & Hopper, P. (eds.) (2001). *Frequency and the Emergence of Linguistic Structure*. Amsterdam: John Benjamins.

Croft, W. (2000). *Explaining language change: An evolutionary approach*. London: Longman.

Ellis, N. C. (2002). Frequency effects in language processing: A review with implications for theories of implicit and explicit language acquisition. *Studies in Second Language Acquisition*, 24, 143–188.

Ford, C., Fox, B., & Thompson, S. (2002). Social interaction and grammar. In: *The new psychology of language*, Vol. 2, pp. 119-143, edited by M. Tomasello. New Jersey: Erlbaum.

Geeraerts, Dirk. (2006). *Cognitive Linguistics. Basic Readings*. Berlin: Mouton de Gruyter.

Hopper, P. (1987). Emergent Grammar. *BLS*, 13, 139-157

Kretzschmar, W., McDavid, V., Lerud, T., & Johnson, E. (1993). *Handbook of the Linguistic atlas of the middle and South Atlantic states*. Chicago: The University of Chicago Press.

Nerbonne, J. & Kleiweg, P. (2003). Lexical distance in LAMSAS. In: *Computational Methods in Dialectometry. Special issue of Computers and the Humanities*, edited by John Nerbonne and William Kretzschmar, 37(3), 2003, 339-357.

Author (2007).

Taylor, J. (2002). *Cognitive Grammar*. Oxford: Oxford University Press.