

Understanding the time course of written compound word production: Implications for theories of meaning and morphology in lexical processing

Jordan Gallant¹; Laurie Feldman²; Gary Libben³

¹McMaster University, Canada; ²University at Albany, SUNY, USA;

³Brock University, Canada

The metaphor of the mental lexicon as a dictionary of stored knowledge about words has constrained the manner in which we think about morphology. One limitation of treating a word's lexical representation as static and relatively independent from that of other words is that compound words are treated as either transparent (e.g., 'blueberry') or not transparent with respect to their constituents e.g., ('hogwash'). An alternative account of how constituent meaning relates to compound meaning supposes that it emerges from a composite of role-dependent morphological contexts, i.e., morphological transcendence (Libben, 2021).

In this study, we investigate the effects of semantic and lexical properties of modifiers in the typed production of English compounds to better understand what lexical and semantic properties of the constituents of a compound influence the motor program for typing it. Participants typed visually presented strings. To maximally control for effects of word and constituent length, all were 8-letter compounds containing two 4-letter constituents. The core stimuli consisted of 30 real compound pairs (e.g., 'raindrop' and 'teardrop'). Each pair shared the same head constituent (C2) and included modifier constituents (C1) with different positional compound family sizes (e.g., '#rain-', n=26; '#tear-', n=6). Non-word modifiers changed the first two letters of the C1s (e.g., 'geindrop' and 'thardrop'). Mean keystrokes were faster in compounds containing C1s with large families and C1s with lower modifier consistency ('#worm-' in 'wormhole' vs '#rain-' in 'raindrop'). Family size effects were limited to the typing of the first constituent and did not influence the typing time for K1 alone. Modifier consistency effects, on the other hand, were observed for keystrokes within C1, within C2 as well as initial keystrokes. We interpret these results as pointing to the interdependence of constituents. In essence, the compound context in which a C1 appears impacts patterning throughout production.

Libben, G. (2021). From lexicon to flexicon: The principles of morphological transcendence and lexical superstates in the characterization of words in the mind. *Frontiers in Artificial Intelligence*, 4.