Typing as a window into chunking in language: Evidence from multiword units

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Top-down effects of words and phrases are well documented in reading and speech. For instance, collocated word pairs such as *strong tea* are recognized more quickly than non-collocational sequences like *powerful tea* (Siyanova-Chanturia et al. 2011). Although recent work suggests that linguistic factors can shape typing dynamics (Muschalik 2025), the role of supralexical information in shaping fine-grained typing patterns has received little to no empirical attention. This study investigates how multiword units (MWUs) influence real-time language production using keystroke logging.

In a web-based copy task, 41 native English touch-typists typed stimuli comprising 30 critical letter four-grams embedded in four contexts: single real words (e.g., *po**stma**ster*), scrambled non-words preserving four central letters (e.g., *op**stma**rets*), collocating word pairs where the critical letters spanned the word boundary (e.g., *va**st ma**jority*), and matched non-collocating word pairs (e.g., *du**st ma**jority*). Keystrokes were recorded to derive two core measures: response time to first keypress (RT) and interkey intervals across the four-gram (IKIs).

Mixed effects modeling revealed that non-words elicited substantially slower RTs and slower IKIs compared to lexical items. However, the model comparing collocated and non-collocated word pairs showed no main effect of condition, although it predicted a small, position-specific faster IKI at the first letter of the four-gram in collocations. An exploratory participant-level analysis uncovered notable individual differences, suggesting that some typers benefit from multiword knowledge primarily during planning/encoding, while others show facilitation at the execution stage.

Taken together, the results show that typing is sensitive to lexical status and that multiword effects may appear in some individuals and at specific processing stages, even though a group-level collocation effect was not obtained in this sample. The study illustrates the methodological promise of keystroke logging for investigating supralexical processing, and highlights the importance of individual differences for understanding when and how MWUs shape production.

References: • Muschalik, J., Schmitz, D., Kakolu Ramarao, A., & D. Baer-Henney (2025). Typing/s/—morphology between the keys? *Reading and Writing* 38(7), 2025-2058. • Siyanova-Chanturia, A., Conklin, K. & W. J. B. van Heuven (2011). Seeing a phrase "time and again" matters: The role of phrasal frequency in the processing of multiword sequences. *Journal of Experimental Psychology: Learning, Memory, and Cognition* 37(3), 776–784.