
The influence of vocal iconicity on word structure through stress and segment placement

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Cues used for improving language processing – such as iconicity aiding access to meanings – seem to benefit from being emphasized within words. Stressed segments lead to a more precise phonetic realization and spoken word recognition models indicate that when the onset of a word is heard, a set of words in the mental lexicon with the same initial segments compete for activation (Norris & McQueen 2008). This study investigates if stress and segment placement within words have a positive effect on vocal iconicity. In Study 1, 300 participants were recruited from 11 language families. 12 cross-linguistic sound-meaning associations (Blasi et al. 2016; Erben Johansson et al., 2020; Joo, 2020) and 3 non-iconic (control) sound-meaning combinations were selected. Each sound-meaning association was represented by four word types with varied stress and segment placement, recorded audially. The participants were asked to listen to each stimuli word and then rank it according to how well it fit the associated meaning. The results showed higher rankings for iconic words than control words, and that stress had a significant effect. Interestingly, the control words showed a negative effect for segment position, indicating a hidden positive segment position effect for iconic words. In Study 2, the segment position effect was tested cross-linguistically. 125 noteworthy sound-meaning associations and 16 control concepts with low iconicity scores were selected. The average first segment position occurrences for each iconically charged sound group per iconic concept were then compared to the average first segment position occurrences for the same sound group yielded from the control concepts. The results showed that sound groups occurred more towards the beginning of congruent iconic concepts in almost all sound-meaning associations. This shows that stress and segment position affect how iconic words are perceived to be. Stress can prevent phonetic erosion which can, in combination with pre-activation effects, cause iconic segments to be retained to a greater extent and then progressively moved towards the onset of words. Thus, these factors could distinctly affect word formation and sound organization across lexica.

References • Blasi, D. E., Wichmann, S., Hammarström, H., Stadler, P. F., & Christiansen, M. H. (2016). Sound-meaning association biases evidenced across thousands of languages. *Proceedings of the National Academy of Sciences*, 113(39), 10818–10823. • Erben Johansson, N., Anikin, A., Carling, G., & Holmer, A. (2020). The typology of sound symbolism: Defining macro-concepts via their semantic and phonetic features. *Linguistic Typology*, 24(2), 253–310. • Joo, I. (2020). Phonosemantic biases found in Leipzig-Jakarta lists of 66 languages. *Linguistic Typology*, 24(1), 1–12. • Norris, D., & McQueen, J. M. (2008). Shortlist B: a Bayesian model of continuous speech recognition. *Psychological Review*, 115(2), 357–395.