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Title

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Permalink

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Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 45(45)

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Publication Date

2023

Peer reviewed

The Influence of Lexical Frequency, Phonotactic Probability, and Neighborhood Density on Word Identification

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Abstract

I examine how lexical frequency, neighborhood density, and phonotactic probability predict word identification, as well as the ways that they relate to each other and to the segments within a word. In a two-alternative forced choice task for identification of monosyllabic English words in noise, accuracy was higher for words with higher lexical frequency, lower neighborhood density, and higher phonotactic probability. However, all three characteristics also differ based on the segments within a word. Adding vowel as a predictor of accuracy largely eliminated the observed effects of phonotactic probability and neighborhood density. This relationship with vowel quality might suggest two directions of effects that can influence misperception patterns and subsequently sound change: Phoneme frequency causing directional confusions, or directional confusions changing phoneme frequency.