

93. Hearing "palm tree" can hamper the naming of an "umbrella" – Interference from distractor words denoting visually similar objects in the picture-word interference task

Frank Oppermann, Jörg D. Jescheniak
University of Leipzig

Two picture-word interference experiments investigated effects from distractor words denoting objects that were visually similar to the target pictures (e.g., umbrella – palm tree) and effects from distractor words denoting objects that were from the same semantic category (e.g., drum – violin). In Experiment 1, participants were familiarized with pictures of the target objects and pictures of objects corresponding to the distractor words prior to the experiment. In Experiment 2, participants were only familiarized with pictures of the target objects but not with pictures of objects corresponding to the distractor words. The comparison of semantically related distractor words with an unrelated control condition showed a semantic interference effect regardless of whether the distractor words were introduced as pictures (Experiment 1) or not (Experiment 2), replicating earlier findings. By contrast, an interference effect for distractor words denoting visually similar objects was observed only when the distractor words were introduced as pictures in Experiment 1. This finding suggests that visually similarity can result in a significant interference effect in the picture-word interference task when representations of visually similar objects were activated to a sufficient extent. Implications for models of lexical access in speech production are discussed.

94. WITHDRAWN

95. Word confusability and word durations

Esteban Buz, T. Florian Jaeger.
University of Rochester

Much work in the intelligibility of speech has focused on if and how speakers modify their articulations as a function of phonological confusability [1-2]. Lab-based experiments show that speakers utter words in dense phonological neighborhoods with more phonetic detail and duration [1]. This supports the theory that speakers adjust articulations for intelligibility [1]. Research on conversational speech calls this into question, finding that high-density words are produced with reduced phonetic detail and duration [2]. A recent proposal holds the potential to address the apparent conflict: rational speakers should be sensitive to expected contextual confusability, rather than context neutral confusability as measured by NHD [3]. Consistent with these models, experimental work has found that NHD effects on target words are partly contingent on the presence phonological neighbors of the targets in context [4]. Thus, conversational speech results may conflict with lab results due to not capturing contextual factors. To address this, we conducted a series of analyses on word durations of monosyllabic nouns, verbs, and adjectives in conversational speech. Study 1 replicates [2]. Study 2 adds four contextual measures of confusability to the model: forward and backward bigram weighted NHD (CND), prior neighbor mentions, and distance from last neighbor. We find that greater NHD predicts shorter durations in nouns and verbs confirming prior work [2]. We find that greater forward CND predicts longer durations for all three lexical classes. Further, we find that greater backward CND predicted shorter verb durations and longer adjective durations (all effects, $p < .05$). Mentions and Distance were not significant predictors. These findings are consistent with rational accounts of audience design [cf. the ideal speaker model, 3] though also consistent with competition based accounts [cf. 5].

[1] Scarborough, R., Lexical and contextual predictability: Confluent effects on the production of vowels, in Laboratory Phonology 10, C. Fougerson, et al., Editors. 2010, De Gruyter Mouton: Berlin; New York. p. 557-586.

[2] Gahl, S., Y. Yao, and K. Johnson, Why reduce? Phonological neighborhood density and phonetic reduction in spontaneous speech. *Journal of Memory and Language*, 2012.

[3] Jaeger, T.F., *The Ideal Speaker*, 2011: University of Rochester.

[4] Heller, J. and M. Goldrick. Context matters: effects of repetition and lexical neighborhood on vowel production. in *Testing Models of Phonetics and Phonology*. 2011. Boulder, CO.

[5] Arnold, J.E., Reference production: Production-internal and addressee-oriented processes. *Language and Cognitive Processes*, 2008. 23: p. 495-527.