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Language performance in a stroke patient with language difficulties

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Title of Research Project: Language performance in a stroke patient with language difficulties

Objective: Deep dyslexia (DD) is an acquired reading disorder characterized by semantic paralexias and impairments in nonword reading. One theory of DD proposes that it is an extreme variant of phonological dyslexia (Glosser & Friedman, 1990; Crisp & Lambon Ralph, 2006), and thus that phonological impairment is the core deficit in DD. This continuum hypothesis predicts that patients with mild DD (who make few semantic errors) should be relatively sensitive to phonology. However, in a series of experiments by Gooding, Danguécan, and Buchanan (2014), a patient with mild DD (GL) had more difficulty naming pictures preceded by phonemic cues than by semantic cues. This demonstrated insensitivity to phonology challenges a continuum theory of phonological/deep dyslexia. The objective of the present study is to further assess GL's sensitivity to phonology by evaluating his recognition speed of real words in the context of a task that places fewer demands on phonological output.

Participants and Methods: GL completed three visual lexical decision tasks in which he was required to distinguish real words from non-pronounceable nonwords, pronounceable nonwords, or pseudohomophones.

Results: Consistent with previous research, GL responded fastest to words in the non-pronounceable nonword condition. Unexpectedly however, GL responded faster to words in the pseudohomophone condition than in the pronounceable nonword condition.

Conclusions: Together with Gooding et al.'s (2014) findings, these results may suggest that GL is insensitive to phonology on certain tasks, which is inconsistent with a continuum theory of phonological/deep dyslexia. Notably, an alternative model of DD proposed by Buchanan, McEwen, Westbury, and Libben (2003) known as the Failure of Inhibition Theory may be easily accommodated to account for the present data. Such a modification proposes that there may be qualitative (not just quantitative) differences between phonological and deep dyslexia.