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Shout It or Say It: Case and Font in Lexical Access

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The purpose of this experiment was to conduct a lexical access task as a precursor to a lexical decision task. Lexical access is the process of activating information about a word from semantic memory, for example, using the internal lexicon (or mental dictionary) to retrieve the meaning of the word. Lexical decision, on the other hand, involves a participant deciding whether a letter-string is a real word or a nonword. Lexical decision tasks have been used in thousands of experiments to increase understanding of semantic memory and lexical access since the 1970s (e.g., Coltheart, Davelaar, Jonasson, and Besner, 1977; Andrews, 1989; Scheerer, 1987). Conclusions based on lexical decision experiments, however, have not controlled for presentation of the word by case and font (e.g., Yap, Balota, Chi-Shing, Besner, 2008; Reidy, Zeichner, Hunnicutt-Ferguson, Lilienfeld, 2008). In addition, participants take longer to respond to low frequency words than high frequency words (Foss, 1968). However, the data available on the reading rate for case and font is mixed (Lynch & Horton, 2002; Bernard, Chaparro, Mills, & Halcomb, 2003). It has been suggested that serif font (e.g., Times New Roman), which is used in a majority of printed texts, is more difficult to read on the computer, therefore, sans serif font (e.g., Arial) is commonly used for computer texts (Barnard & Mills, 2000). The present experiment used a lexical access task to investigate high and low frequency words. Participants at Metropolitan State College of Denver rated the perceived frequency of words they read. In the present experiment, 100 participants were assigned to one of four conditions for the lexical access task: uppercase serif font, lowercase serif font, uppercase sans serif font, and lowercase sans serif font. The participants were instructed to rate 80 words on a one to seven scale of how frequently they believed they read a word. The 80 words consisted of 20 high frequency words, 20 low frequency words, and 40 filler words which appeared one-by-one on a computer screen. The words were taken from Francis and Kucera's (1982) list of word frequency norms. A

significant positive correlation was found between Francis and Kucera's previously established norms and the participant's self-reported frequency. There was also a significant difference in the time taken to respond between the high and low frequency words. It took the participants longer to rate their interaction with the high frequency words than the low frequency words, which was opposite than what was predicted. This finding suggests that the participants took longer to determine how often they read a high frequency word than to rate a low score quickly for the low frequency words they know they do not read often. A one-way ANOVA demonstrated that there was a significant difference in time taken to rate words between the four conditions. Post hoc tests revealed a significant difference between words presented in uppercase sans serif font and lowercase sans serif font. Follow up experiments are necessary to explore the difference in time taken to access words in different fonts.