Reading Skill Differences in Familiarity with Print Language

Familiarity with print built through reading practice is frequently researched through a focus on individual words and their lexical representations (Stanovich & West, 1989). However, avid and successful readers likely become increasingly familiar with recurrent groups of words frequent in written texts and begin to process them similarly to the holistic processing of idioms (Conklin & Schmitt, 2008). To date, there has been no empirical examination of the link between skilled reading and efficient processing of print at the syntactic/phrasal level.

Methods

College students with differing levels of reading ability were recruited from the campus of a large, urban university comprising struggling readers (n = 14) and non-struggling readers (n = 14). Phrases were identified with a high frequency of occurrence in print (e.g., "*one of the most*") and in speech (e.g., "*more or less*") using previous research (Altenberg, 1998; Biber, Johansson, Leech, Conrad & Finegan, 1999). Then using the large English language corpora, regular, infrequent counterparts (controls) for each of the frequent phrases were created by changing one word of similar length and frequency: "*one of the new*" was created for "*one of the most*" and "*three or less*" for "*more or less*". The constraints used allowed for the pair of frequent and control phrases (e.g., "*one of the most*" vs. "*one of the new*" and "*more or less*" vs. "*three or less*") to differ only in frequency of occurrence as a phrasal unit. Two lists were created (10 lexical bundles from print with 10 controls, 10 lexical bundles from speech with 10 controls, and 40 filler phrases)

A phrase matching task was designed in which a phrase appeared on the computer screen at the press of the spacebar followed 500ms later by another phrase that either matched or did not match the first phrase. Both phrases remained on the screen until the participant pressed a *yes* or *no* key to indicate whether there was a match or no-match or until 2000ms elapsed without a response. Stimuli were presented randomly via the DMDX software.

Only the following main effects were significant: *group* (struggling vs. non-struggling) at $F(1,26) = 8.061$, $p < .009$, *phrase* (frequent vs. non-frequent) at $F(1,26) = 11.296$, $p < .002$, and *modality* (print vs. speech) at $F(1,26) = 10.762$, $p < .003$. These results indicated significantly faster responding (a) by non-struggling readers than by struggling readers, (b) to frequent phrases than control phrases, and (c) to speech stimuli than print stimuli. Although not significant, the effect size for the *bundle*student* interaction in print was at .085 partial eta squared—a mid-to-large effect size according to Cohen's estimates. This was due to faster responding to frequent print phrases by non-struggling readers than to regular controls. The struggling readers' responses were nearly identical to frequent phrases and to their regular controls. The power for this interaction was, however, only .321 due most likely to the small sample size. Importantly, both groups of students were equally faster in responding to frequent phrases in speech than to their regular controls.

Discussion/Conclusion

Although the means are in the expected direction, the crucial three-way interaction between *group*, *phrase*, and *modality* failed to reach significance. A significant three-way interaction is necessary to establish that the difference in responding to frequent vs. control phrases between struggling and non-struggling readers occurs only for print but not for speech and that this is because of the varying amounts of print exposure experienced by struggling and non-struggling readers.

The lack of a significant three-way interaction may be attributed to four limitations: First, the criterion used for forming the groups assumed that non-struggling readers read avidly and that struggling readers were not avid readers which may not be necessarily the case (Stanovich & West, 1989) since there may exist discrepancies between reading comprehension and print exposure. Second, some of the phrases that formed the speech stimuli may actually have greater frequency of occurrence in print contexts than speech, which might potentially have contributed to low statistical power. Third, phrases were displayed simultaneously on the screen, which could have resulted in participants merely engaging in a simple word-by-word match between the two phrases when the second phrase appeared instead of matching the phrases as two separate units. Finally, the small sample size ($n = 28$) might have served to depress the power of analyses.

This study is one of few research investigations of print exposure effects on college students' reading processes. Using phrases as the unit of analysis, the study sought to measure college readers' familiarity with "the building blocks of the discourse" of print relative to speech (Biber et al., 1999). Although the three-way interaction was not significant, the means were in the expected direction showing lack of familiarity in struggling college readers with the print discourse despite equally efficient processing of the speech phrases as non-struggling readers. A replication of the study with modifications to the study limitations may yield the significance level for the three-way interaction. This type of inquiry could (a) uncover indicators of familiarity with textual features from written word, and (b) provide a framework for facilitating meaningful and efficient comprehension of text.

References

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