

Improving Font Readability Across Native & Non-Native English Speakers

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Serif & Sans Serif Fonts

Serifs are slight marks that appear at the end of the strokes that make a character. Serif fonts are fonts that have these finishing end strokes, and sans serif fonts are fonts that do not have these finishing end strokes.



Which font is easier to read?

Readability refers to the amount of effort that it takes to read a word, a sentence, or a paragraph. Results from studies on the readability of serif and sans serif fonts have been quite mixed. The very few well controlled studies suggest that sans serif fonts are more readable (Kaspar et al., 2015; Moret-Tatay & Perea, 2011)

Visual Noise Hypothesis

Researchers suggest that serif fonts are less readable because serifs act as visual noise – serifs only lead the reader to processes more visual information, which makes reading more difficult (Woods, Davis, & Scharff, 2005).

Second Language Reading

Previous research suggests that (1) languages with different writing systems are processed differently during reading and, (2) second language reading uses the same processing mechanisms that are used in native language reading (Chen et al., 2009).

Visual Noise Processing

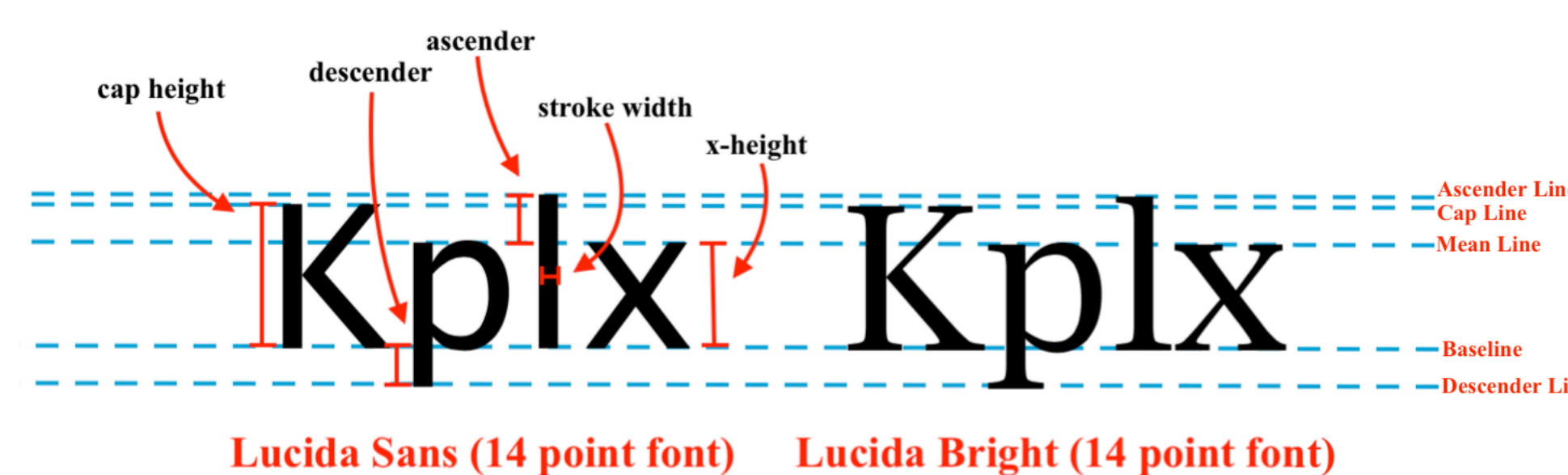
Previous research suggests that sensitivity to visual noise during reading depends on one's native writing system (Pae, & Lee, 2015).

The Present Study

- (1) We know that visual noise affects people with different native languages differently when reading in English, but will we also see this when visual noise is presented in the form of serifs?
- (2) Do my results replicate the finding that sans serif fonts are most readable?

Stimuli

The Lucida Bright (serif) and Lucida Sans (sans serif) fonts were used in this study. These are two well controlled fonts – the main difference between the two fonts is the presence and absence of serifs.

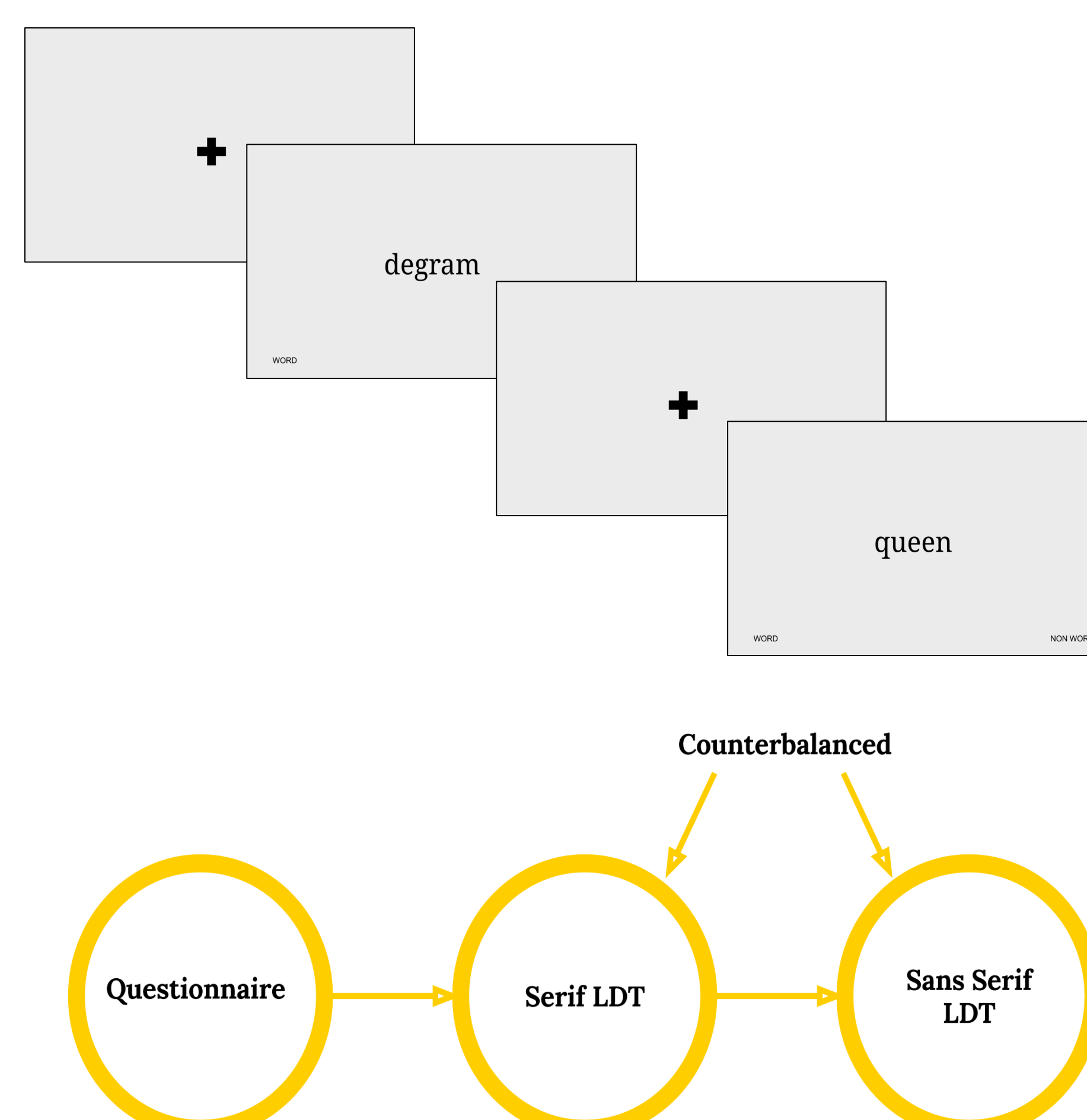


Method

This was an online study with native English, native Korean, & native Chinese speakers. All participants were fluent in English.

Questionnaire: This questionnaire asked participants demographic and language fluency questions.

Lexical Decision Task (LDT): Participants completed one LDT in the serif font, and one LDT in the sans serif font



Results

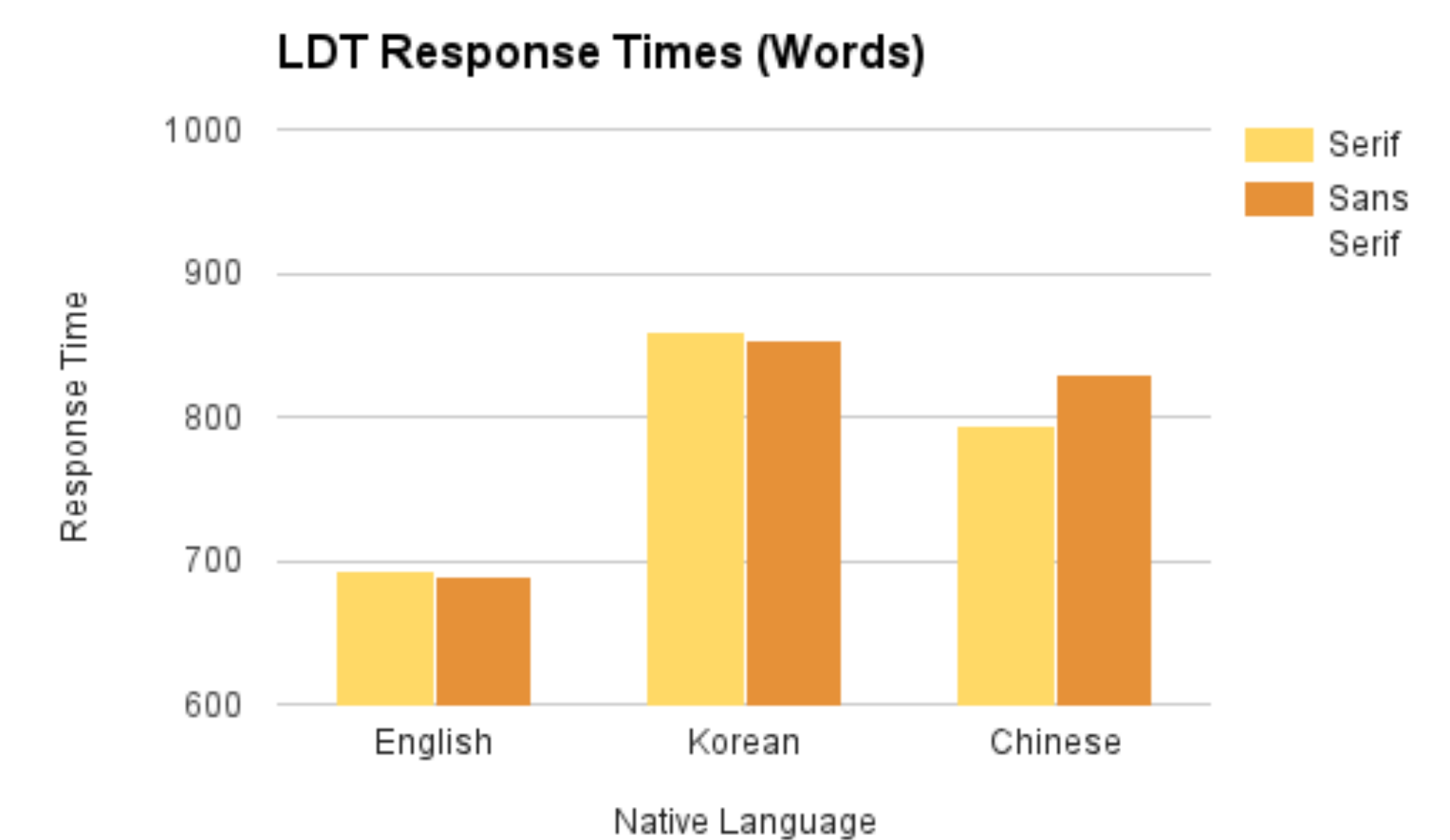


Fig. 1. Mean response times to stimuli words by native language and font type. A repeated measures ANOVA revealed a marginally significant interaction between native language and font type [$F(2, 58) = 2.42, P = 0.098$].

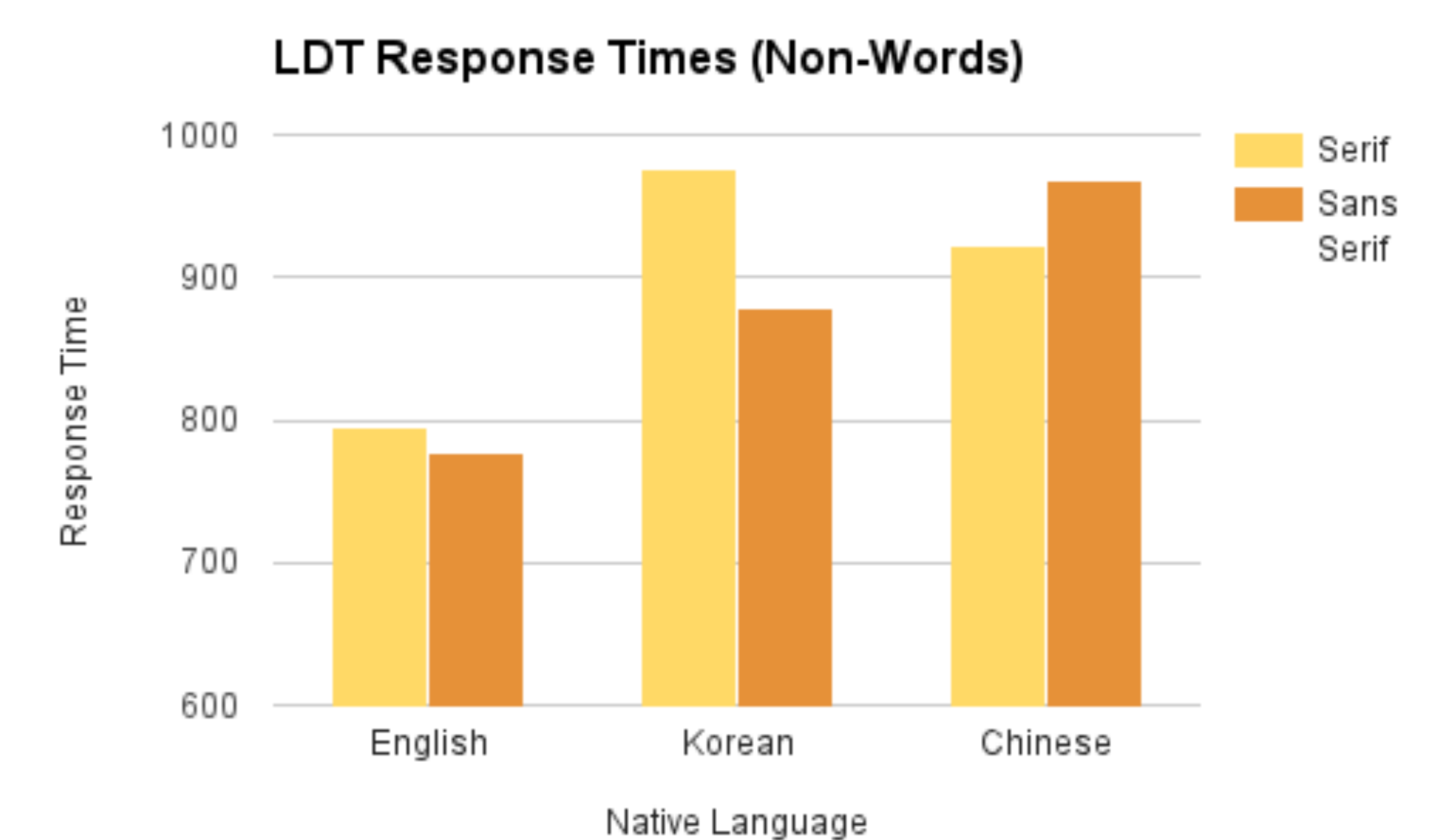


Fig. 2. Mean response times to stimuli non-words by native language and font type. A repeated measures ANOVA revealed a significant interaction between native language and font type [$F(2, 58) = 5.619, P = 0.006$].

Conclusion

These results seem to suggest that sans serif fonts are the more readable font type for native English and native Korean speakers, while serif fonts are the more readable font type for native Chinese speakers.

References

- Chen, C., Xue, G., Mei, L., Chen, C., & Dong, Q. (2009). Cultural neurolinguistics. *Progress in brain research, 178*, 159-171.
- Kaspar, K., Wehlitz, T., von Knobelsdorff, S., Wulf, T., & von Saldern, M. A. O. (2015). A matter of font type: The effect of serifs on the evaluation of scientific abstracts. *International Journal of Psychology, 50(5)*, 372-378.
- Moret-Tatay, C., & Perea, M. (2011). Do serifs provide an advantage in the recognition of written words?. *Journal of Cognitive Psychology, 23(5)*, 619-624.
- Pae, H. K., & Lee, Y. W. (2015). The Resolution of Visual Noise in Word Recognition. *Journal of psycholinguistic research, 44(3)*, 337-358.
- Woods, R. J., Davis, K., & Scharff, L. F. V. (2005). Effects of typeface and font size on legibility for children. *American Journal of Psychological Research, 1*, 86-102.

