**Research Summary**

Reading is an essential skill that people use in everyday life. Over the past few decades, much has been learned about how skilled adults read sentences (e.g. see Rayner, 1998; Schotter, Angele, & Rayner, 2012). However, most of this research has been conducted in a quiet and well-controlled environment. Much less is known about how the background environment of readers influences the reading process. For example, how do different sounds attract attention away from the main task to cause distraction?

The aim of the current experiment is to test whether rare and unpredictable sounds cause distraction in a task that involves natural reading. Participants will read short sentences, and upon fixating five critical words in the sentence, they will hear a short 50-ms tone (this will be referred to as “standard” sound). Critically, about 10% of the time, participant will hear another 50-ms sound that markedly differs in its acoustical features from the predictable standard sound (this will be referred to as the “deviant” sound). The prediction is that the deviant sound will cause distraction because it violates participants’ expectation of another standard sound. This effect has been found in simpler cognitive tasks (for a review, see Parmentier, 2014), and the present experiment will test whether this finding can be extended to a natural reading task. The present study will involve recording participants’ eye-movements while they are reading short sentences and listening to the sounds described above.

In this study, students who are native speakers of British English will be recruited. Furthermore, participants will also need to have normal or corrected-to-normal vision, normal hearing, and no prior diagnosis of reading disorders. Before the experiment, participants will read the information about the study and have the opportunity to ask questions. If they agree to participate, they will be asked to sign a consent form. It will be explained to them that their responses will be anonymized and that they are free to withdraw from the experiment at any time. The recruitment of participants will be done through SONA, and word of mouth. Participants will receive course credits in compensation for their time.

The recorded eye-movement data will be used to calculate fixation durations and fixation probabilities on all words in all experimental trials. These will then be used in the statistical analysis of the data. The only personal information about participants that will be collected is their age and gender. This information will be analyzed separately and it will not be possible to link it to participant’s identity or the eye-tracking data recorded from them.

References

Parmentier, F. B. (2014). The cognitive determinants of behavioral distraction by deviant auditory stimuli: A review. *Psychological Research*, *78*(3), 321-338. doi:10.1007/s00426-013-0534-4

Rayner, K. (1998). Eye movements in reading and information processing: 20 years of research. *Psychological Bulletin*, *124*(3), 372-422. doi:10.1037/0033-2909.124.3.372

Schotter, E. R., Angele, B., & Rayner, K. (2012). Parafoveal processing in reading. *Attention, Perception, & Psychophysics*, *74*(1), 5-35. doi:10.3758/s13414-011-0219-2