**Debriefing sheet**

Reading with tones in the background

Thank you again for taking part in this study. Below you will find further information about the aims and purpose of the experiment.

**What is this study about?**

The purpose of the present experiment was to investigate whether different tones can influence how people read short sentences. In the past few decades, much has been learned about how adults read sentences by recording their eye movements. However, this research has been conducted in a quiet and well-controlled environment that is not typical for everyday life. Therefore, the study aims to understand how different background sounds affect reading patterns.

In this study, you heard a short tone (i.e. beep) that was frequently presented when you read the sentences. Occasionally, however, you also heard a rare sound (i.e. static noise) that differed from this frequent tone. The aim of the study was to investigate how hearing this rare sound affects eye-movements during reading. Even though people may have the subjective feeling that background sounds do not influence how they read sentences, the present experiment tested this assumption with great precision. Due to the fact that the position of your eyes was recorded 1000 times every second, it is possible to test for very subtle changes in eye-movement patterns. Ultimately, the purpose of this line of research is to understand how reading occurs in natural settings and whether the surrounding environment influences eye movements during reading.

**Additional information about the study:**

1. Duration:

30-40 minutes

1. Equipment used:

Eye-tracking (i.e. recording of the eyes while people are reading)

1. Data produced in the experiment:

The main data that is collected in this experiment is *fixation durations*.

1. Data analysis:

What we record in this experiment is the position of the eyes on the monitor while people are reading sentences. Due to the fact that these recordings are made every millisecond (i.e., 1000 times per second), we get a big file that usually has millions of numbers. This so-called “raw data” needs to be pre-processed into more meaningful units- eye fixations. Eye fixations are basically how long your eyes stayed at a single word before they moved on to something else on the screen. After we get the fixation durations from individuals words, we do a statistical analysis with linear mixed models. This is a type of a regression model that takes into account the fact that different people read at different speed, and that some sentences may be easier to read than others.

1. Type of design:

The study used a within-subject design where all participants completed all conditions. The conditions in this study were the three auditory background conditions in which people are reading: silence, a short tone, short static noise.

1. Main research questions:

Are readers distracted by rare sounds?

How do rare sounds affect the processing of words in the sentence?

1. Procedure of the study:

In the beginning, participants are provided with information about the experiment and then asked to sign a consent form. The reading experiment is completed as follows. First, participants are familiarised with the eye-tracker, and then a calibration procedure is performed. Afterwards, participants complete the reading task at their own pace.

If you would like to know more about this study or have any questions, you can contact me at [mvasilev@bournemouth.ac.uk](mailto:mvasilev@bournemouth.ac.uk) (Martin Vasilev).

For a study similar to this one, see: Hyönä, J., & Ekholm, M. (2016). Background speech effects on sentence processing during reading: An eye movement study. *PloS one*, *11*(3), e0152133.