**EXPERIMENT ONE**

**METHOD**

**Participants**

Fifty native English speakers (Linked Experiment: 3 male, 29 females, with an average age of 20.22 years; Unlinked Experiment: 2 male, 16 females, with an average age of 20.33 years) participated1 in exchange for course credits or payment (£6) and were members of the University of Southampton community. All had no known reading difficulties. None of the participants took part in Experiment 2. All sample sizes reported in this paper are typical of eye movement and reading studies.

**Apparatus**

Participants were seated in a cubicle in front of a desktop computer monitor and a laptop computer. The desktop computer was used to present each edited Wikipedia article in its entirety. Meanwhile, the laptop displayed each sentence from the edited Wikipedia article individually. The sentences appeared one at a time on the laptop screen in the same order as the edited Wikipedia article shown on the desktop computer monitor. This setup allowed participants to rate the importance of individual sentences while still seeing how it fits with the rest of the passage. Sentences were presented in 14pt mono-spaced Courier font.

**Materials and design**

The stimuli in Experiment 1 consisted of forty edited Wikipedia articles (example stimuli available: <https://goo.gl/JLvvMD>) taken from Experiment Three of Fitzsimmons et al. (2019). The text within the Wikipedia articles was identical to the source material, at the time it was sampled, with the exception of four sentences per stimulus. In Fitzsimmons et al. (2019) one hundred and sixty target words were embedded in sentences (one target word per sentence) and four sentences were inserted into each Wikipedia article. The experimental sentences were designed to be semantically consistent with the text already present, so as not to stand out from the existing text. This decision was made so that the articles were as close to a natural Web environment as possible, while featuring the additional experimental sentences.

The three continuous independent variables considered in Experiment 1 were number of links, position on the screen (line number) and length of sentence (in number of words). In addition, we used the categorical, between-subjects independent variable of Passage Type (Passages with Links vs. Passages without Links), to compare ratings between the Linked group and Unlinked group. This was employed to investigate the effect of hyperlinks themselves on how readers interpret the importance of text. This variable was implemented between subjects, as we did not want the ratings given to the unlinked sentences to be influenced by the presence of hyperlinks in other sentences during the same experiment.

In the original Fitzsimmons et al. (2019) study, four versions of each stimuli were produced based on the variables of Word Frequency (high vs. low) and Word Type (Linked vs. Unlinked) for specific target words. This was a within-subjects design, with the 4 different target word types rotated according to a Latin Square. Word Frequency and Word Type were not the subject of interest in this article (see Fitzsimmons et al., 2019) for the analysis of these variables), but we did present the stimuli according to the same Latin square, meaning every participant saw only one version of each edited Wikipedia article. The manipulations of Word Type and Word Frequency were not shown to have any effect on importance ratings (all p’s >.10). As such, they were not considered within the current analyses.

**Procedure**

Ethical approval for Experiment 1 was applied for, peer-reviewed and granted by the University of Southampton Psychology Department Ethics Committee. Participants were given an information sheet and a verbal description of the experimental procedure and informed that they would be reading Wikipedia articles on the desktop computer screen. The participants were instructed to read through the entire Wikipedia article on the desktop screen and then move to the laptop screen to rate the importance of every sentence from that article. They were instructed to rate each sentence on how important it was to the general meaning of the article as a whole and respond using the buttons 1 (Not important) – 5 (Very important) on the laptop keyboard. Once all sentences had been rated, the next trial would appear. The experiment was self-paced and lasted approximately 60 minutes.

**EXPERIMENT TWO**

Experiment 2 focuses on how perceived importance and task effects (skim reading versus reading for comprehension) affects how individuals sample text on the Web and extract information from it. Experiment 1 found hyperlinks to be a key determinant of which parts of the text are perceived to contain important information and it could be predicted, therefore, that readers will judge the presence of links as an essential indicator for gaining a desired amount of comprehension. Whereas participants provided offline ratings in Experiment 1, Experiment 2 explores the differences between reading for comprehension and skim reading on reading behaviour by recording the participants’ eye movements. We also employed the task manipulation from Fitzsimmons, Jayes, Weal and Drieghe (2019), whereby participants were either instructed to read for comprehension or asked to skim read passages of text that resemble a Wikipedia page. Between each page of text, the participant was asked comprehension questions which were either related to the previously rated important or unimportant sentences in the text. The ratings from Experiment 1 were used to examine the impact of the perceived importance that was given to each sentence. This provided a highly controlled stimuli set, while our methodology provided a naturalistic, moment-by-moment indication of the processing of text during normal reading (Rayner, 1998; 2009). By employing our paradigm of using the same 40 Wikipedia passages, we were able to maintain experimental control over our stimuli, and the ratings of these stimuli as a result.

**METHOD**

**Participants**

Thirty-two native English speakers (2 males, 30 female) with an average age of 20.00 years participated in exchange for course credits or payment (£9) and were members of the University of Southampton community. All had normal or corrected-to-normal vision and no known reading disabilities. None of the participants took part in Experiment 1.

**Apparatus**

Eye movements were measured with an SR-Research Eyelink 1000 eye tracker operating at 1000 Hz (1 sample every millisecond). Participants viewed the stimuli binocularly, but only the right eye was tracked. Words were presented in 14pt mono-spaced Courier font. The participant’s eye was 73 cm from the display; at this distance three characters equalled about 1˚ of visual angle.

**Materials and design**

Stimuli used were identical to those in Experiment 1. The study employed the continuous independent variable of importance (i.e. the average importance scores for each sentence from Experiment 1) and the independent variable of Task Type (Comprehension, Skimming). Both variables were within subjects, with participants reading all sentences, with the task of skim reading and reading for comprehension counterbalanced across the passages.

**Procedure**

Ethical approval for Experiment 2 was applied for, peer-reviewed and granted by the University of Southampton Psychology Department Ethics Committee. Participants were given an information sheet and a verbal description of the experimental procedure and informed that they would be reading passages on a monitor while their eyes were being tracked. The text on the screen gave the instructions to read either for comprehension or to skim read. This was blocked such that the first twenty stimuli were to be read for comprehension and the second twenty to be skim read.

When the skim reading portion of the experiment began the participants were instructed to ‘skim read as you would naturally, as if you are reading a large textbook that you need to read quickly’. Participants were told there was no time limit, and they simply had to skim read naturally. As in Fitzsimmons et al. [1], we did not counterbalance the order of Task Type because the comprehension reading blocks might have been influenced by first having to skim read. Participants were not told they were going to be skim reading until just before that half of the experiment was due to begin, so as not to influence the first part of the experiment which was to be read for comprehension. If participants are first asked to skim read, it may become difficult to slow down and read “normally” afterwards and this would affect our data as we would not observe normal reading behaviour.

The participants were informed that they were to respond to comprehension questions presented after each trial. The participants’ head was stabilised in a head/chin rest to reduce head movements that could adversely affect the quality of the calibration of the eye tracker. At the beginning of each trial the participant had to look at a fixation point on the screen. When the eye tracker registered a stable fixation on the fixation point, the sentence was displayed ensuring that the first fixation fell at the beginning of the text. When participants finished reading, they confirmed they had finished by pressing a button on the response box in front of them. After each trial, four comprehension questions were presented to the participants, one at a time. Two of the questions were related to sentences within the passage rated as the most important in the hyperlinked portion of Experiment 1. The other two questions were related to the sentences rated as the least important in Experiment 1. Each comprehension question required a yes or no response. The comprehension questions were presented to ensure the participants were comprehending the text displayed to them and also to measure the level of comprehension across both the sentences rated as important and unimportant. Participants responded to the questions by pressing the appropriate button on a response box. After the questions the next trial would appear. The experiment lasted approximately 60 minutes, with a 15-minute break in between task type blocks.