



School of Psychology and Clinical Language Sciences
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Study: Curse Words and the Clock: How Expletives Alter Our Sense of Time

DEBRIEF SHEET

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Thank you for taking part in our study

From a psychological perspective, swear words form an interesting subset of language as they seem to create unexpected behavioural and cognitive effects. For example, self-vocalised swearing has been found to increase pain tolerance, physical strength, and risk-taking behaviour. Swear words, received as experimental stimuli, have also been shown to command attention, increase response times and disrupt time perception. The finding around the disruption of time is interesting, however, because it runs counter to the literature base. Swear words are mainly considered to be negative words, and the literature around time perception suggests negative words cause people to over-estimate the passing of time. However, when swear words were presented as stimuli within a time perception study, participants significantly under-estimated the passing of time.

This study was, therefore, looking to replicate that initial, surprising result. However, it then extended its investigation to test whether it was the inherently arousing nature of swear words, rather than their general negativity, that explains why they cause people to under-estimate how much time has elapsed. Previous studies have shown that highly arousing non-swear words cause people to underestimate the passing of time and this study was the first to directly see whether it is the swear word's arousal, rather than its negativity, that drives the effect. Furthermore, as language can be presented cross-modally, via written words or spoken audio, we presented the words to you in both ways. This will allow us to test whether one modality alone drives the expected effect or whether they are both, equally able to disrupt time perception and if so, if they disrupt it in the same direction. Finally, the spoken words were presented in both a female and a male voice because previous research found that when negative words were heard in a female voice, participants underestimated how much time had passed. By using both genders, we can ascertain whether the speakers voice plays any role in the expected effect, too.

The reason we are interested in better understanding how swear words alter people's perception of the passing of time is because, as previously mentioned, swearing has been shown to increase pain tolerance. In fact, it's a very robust finding but no satisfactory explanation for how it generates this effect has been given. It is key to note, however, that this increase has been shown using procedures that require



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participants to test how long they can withstand a painful stimulus (e.g., very cold water) when repeating a swear word, compared to when they repeated a neutral word. If swear words cause people to underestimate the passing of time, as the literature currently suggests, this may explain how swearing increases pain tolerance – by simply making people believe they haven't withstood the stimuli for as long as they have. Your participation has helped us better understand if this is the case. Thank you.

Reminder: What will happen to my data/how will it be protected?

Your data will be kept anonymous, confidential, and securely stored, with only your anonymous ID identifying it and the final dataset collected from this study will be preserved and made available in anonymised form, so that data can be re-used by others. No data in that final dataset can be linked back to you. Your individual consent form will be kept for 5 years after the completion of this study and, if you agreed to be contacted about future studies whilst consenting to take part, you may remove this agreement at any point in the future by emailing Prof. Phil Beaman – c.p.beaman@reading.ac.uk.

Finally, if you have any further questions about the study, please contact Christopher Dobson (c.g.dobson@gpgr.reading.ac.uk).

Once again, thank you again for your participation.

Prof. Philip Beaman and Christopher Dobson