

Preparation and Inhibition Debrief

Many thanks for participating in our experiment. Please read more about the experiment below.

When people switch between tasks with different rules, performance usually worsens such that responses are slower and errors more common. Research shows that if you have just completed a task (A) and then change to a different task (B), it is harder to then switch back and complete task A again than to complete a completely different task (C) i.e. ABA task sequence is harder than CBA task sequence. This is thought to be caused by the first A task being inhibited (via a mechanism known as “backward inhibition”, or BI) so that the B task can be completed easily without any competition from the preceding task. When task A is required again the inhibition needs to be overcome, therefore producing the cost.

This study was interested in looking to see what stage of task processing is responsible for producing backward inhibition. One possibility is that it is the preparation stage (where you prepare to do a particular task but do not yet have anything to respond to). In this study you were presented with a cue which told you which task to prepare for and then the majority of the time you were given a target to respond to using that selected task. However, on some trials no target appeared (a truncated trial) and you instead started a new trial (via presentation of a new cue). I will be looking to see if after those truncated trials backward inhibition has been produced. If it has then this will be evidence that preparation stage (the selecting of a task in our working memory) is enough to produce backward inhibition.

You just completed an experiment in which you switched between three different tasks (colour, line and shape judgments). We were looking to see whether preparing to perform a task is enough to produce backward inhibition. The experiment employs a repeated measures design with two conditions. We will analyse performance (dependent variable - response times and errors) using a 2 x 2 ANOVA comparing the independent variables: type of trial sequence (ABA vs CBA) and level of trial completion (truncated [preparation only] vs complete). If preparation is enough to trigger backward inhibition then we would expect to find a significant main effect of trial sequence, with ABA producing higher performance costs than CBA trial sequences. However, if preparation is not enough to trigger backward inhibition then we would expect a significant interaction of trial sequence and level of trial completion, with completed trials producing a larger [ABA – CBA] difference than truncated.

Information will be held securely on the University network and on DVDs in a locked office. In accordance with the Data Protection Act this information may be retained indefinitely. To ensure access to the data for the wider research community, the anonymous dataset may be archived in an online database

If agreed to a codename: it will be held confidentially so that only the experimenter Laura Prosser and Dr Rachel Swainson has access to this data and will be held securely on the University's network and on a piece of paper in a locked office up to February 2018 after which period it will be completely destroyed.

Contact details:

Experimenter: Laura Prosser

Email: r01lp14@abdn.ac.uk

Supervisor: Dr Rachel Swainson

Email: r.swainson@abdn.ac.uk

Further Reading:

Koch, I., Gade, M., Schuch, M., & Philipp, A. M. (2010). The role of inhibition in task switching: A review. *Psychonomic Bulletin & Review*, 17(1), 1-14.

Schuch, S., & Koch, I. (2003). The role of response selection for inhibition of task sets in task shifting. *Journal of Experimental Psychology: Human Perception and Performance*, 29(1), 92-105