

Inhibition and Preparation

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., an ABA task sequence is harder than a CBA task sequence. It is thought that when we switch tasks we inhibit the preceding task (via a mechanism known as “backward inhibition”, or BI) so that it doesn’t interfere too much with the current task. When we need then to switch back to that first task (i.e., from A to B and then back to A), the inhibition needs to be overcome, and the time taken to do that produces the cost to performance.

The current study looks 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 “cue-only” trial) and you instead started a new trial (via presentation of a new cue). We will be looking to see if after those cue-only trials backward inhibition has been produced, just as it usually would be produced after a completed trial. If it has, then this will be evidence that preparation stage (getting ready to perform a task, but not yet performing it) is enough to produce backward inhibition.

The experiment employs a repeated-measures design. We will analyse performance via two dependent variables (used in separate analyses): response times and errors. If preparation is enough to trigger backward inhibition then we would expect to find a significant difference in the performance of ABA and CBA trial sequences (performance being worse on ABA than on CBA) following cue-only trials, as well as following completed trials.

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 such as the Open Science Framework.

If you agreed to having a codename, it will be held securely on the University’s network and on a piece of paper in a locked room up to February 2018, after which period it will be completely destroyed.

Contact details

Experimenter: [name of student experimenter]
[email address of student experimenter]

Supervisor: Dr Rachel Swainson, Lecturer, University of Aberdeen
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

N.B. Please email the experimenter if you would like a copy of your completed consent form to be sent to you.