

Study of Working Memory and Self-Control

Principle Investigator: Larry Z. Daily

Research assistants: Alex Vida and Sean Wisniewski

Thank you for participating in my study. I greatly appreciate your effort and patience.

The purpose of this study is to examine the relationship of working memory (more commonly known as short-term memory) and self-control. Working memory is generally viewed as a temporary workspace where you maintain information you are currently working with. For instance, if you were asked to add 23 and 42 in your head, you would need to maintain the problem ($23 + 42$) in working memory. You'd also need to hold relevant information from long-term memory in working memory (for instance, that $3 + 2 = 5$) along with any intermediate results (such as the fact that the ones place in the answer is filled with 5). Each person is assumed to have only a fixed amount of "space" in working memory. Differences in the capacity of working memory are associated with differences in the performance of some tasks; a person with a larger working memory capacity may find certain tasks easier to do than someone with a smaller working memory capacity. One of the tasks you completed – the one you did twice – was designed to measure working memory capacity.

A recent line of work (e.g., Baumeister, Vohs, & Tice, 2007) has suggested that acts of self-control draw on some limited capacity resource, with the exact limit varying from person to person. That description sounds a great deal like the description of working memory. Baumeister et al. (2007), however, argue that this resource is not working memory, primarily because cognitive psychologists assume that working memory capacity is fixed and is not depleted by use. That assumption has never been tested in an experiment and the purpose of this experiment was to do such a test. The other task you completed – the Stroop task – has been identified by Baumeister and his colleagues as a task that draws on the self-control resource.

In the first session, you performed the working memory task so I could get a measure of your working memory capacity. In the second session, you may have performed the self-control task first and then the working memory task again. If so, the idea was that completing the self-control task would deplete the self-control/working memory resource and the estimate of your working memory capacity should be lower than in the first session. Alternatively, you may have performed the working memory task first and then the self-control task. If so, the working memory task should deplete the resource and it would be expected that your performance on the self-control task would be slower and that you'd make more mistakes.

Thanks you again for your help. If you have any questions, I or one of my research assistants would be happy to answer them now. If you should think of any questions or comments later, please contact me. I can be reached by phone at 876-5297 or by e-mail at ldaily@shepherd.edu.