APPENDIX D - SAMPLE APA-STYLE STUDENT REPORT

Does Delay Affect Prospective Memory Accuracy?

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Abstract

The present experiment was designed to test the effect of delay on prospective memory. Prospective memory is remembering to complete a task in the future (Einstein & McDaniel, 2005). Previous studies that measured forgetting of prospective memory have reported mixed results. Thus, the current study tested the effect of delay in an attempt to clarify the effect. Delay between the presentation of the prospective memory instructions and the prospective memory cue was manipulated. Delays of 5 to 20 min were tested. Results indicated that prospective memory performance did not change as delay increased. Thus, there was no evidence that delay affects prospective memory for this range of delays.

Keywords: prospective memory, forgetting

Does Delay Affect Prospective Memory Accuracy?

Prospective memory (PM) is the act of remembering to perform a task at some point in the future (Einstein & McDaniel, 2005). Many studies have been conducted on this topic. Researchers in this area have been examining the effect of delay on PM. In these studies, the delay between the PM instructions and the presentation of the PM cue was manipulated. Knowing how delay affects PM may indicate how similar PM is to retrospective memory (i.e., remembering something you have experienced in the past).

Previous studies have reported mixed results for the effect of delay on PM. For example, in a study by Nigro and Cicogna (2000), university students answered two standardized questionnaires. After completing the first questionnaire, participants were told to relay a message to the experimenter in charge of giving the second questionnaire. The message was the same for all participants. Random assignment was used to place the participants in one of three delay conditions: 10 min, 2 days, or 2 weeks. On seeing the second experimenter at their designated time, participants were to give the message. Results showed that PM accuracy was not affected by delay of the second session. However, Hicks et al. (2000) did find an effect of delay on PM performance. They manipulated delay in a laboratory study of PM and found that PM performance increased from a delay of 2.5 min to a delay of 15 min. Thus, the effect of delay on PM is unclear.

Contrary to the results of Hicks et al. (2000), Meier et al. (2006) found that PM performance decreased with longer delays. In their second experiment, they administered delays of 5, 15, and 45 min using two distractor tasks. Results suggested that as the delays got longer the PM accuracy decreased.

The purpose of the current study was to find out if delays between the PM instructions and the presentation of the PM cue significantly affect PM accuracy. Delays of 5, 10, 15, and 20 min were used. Based on the results of Meier et al. (2006) for delays in this range, I hypothesized that as delay increased, PM accuracy would decrease.

Method

Participants

The participants were 80 undergraduate students from a psychology department subject pool at Illinois State University. They completed the experiment voluntarily and received extra credit in their courses for their participation. Participants were randomly assigned to one of the four conditions: 5-, 10-, 15-, or 20-min delay, with 20 participants per condition.

Design

A between-subjects design was used to examine the differences between the four delay conditions and PM accuracy. The independent variable was delay between instruction of the PM task and the PM cue. The levels of the independent variable were 5-, 10-, 15-, and 20-min delays. The dependent variable in the study was PM accuracy.

Materials

The stimuli consisted of categories and items that did or did not belong to a specific category. The stimuli were drawn from Battig and Montague's (1969) category norms. There were 11 categories presented to the participants with exemplars: fruit, vegetable, human body part, metal, fish, flower, city, color, sport, musical instrument, and places to sleep. There were 280 category and exemplar pairings in the experiment, divided into four blocks of trials. Trials were numbered for participant accuracy in recording judgments on the record sheet. Half the

exemplars belonged to the category presented, whereas the other half did not belong. The participants were given response sheets numbered from 1 to 280. They circled "yes" or "no" on each trial according to whether or not the exemplar belonged in the category. Four PM cues appeared in the category-judgment trials: hotel, dormitory, library, and restaurant. Two of these cues were presented with a correct category, and two were presented with an incorrect category. The trials were presented with PowerPoint. In each trial, categories and exemplars were presented in the center of the computer screen.

Procedure

Participants were run individually. Participants first read and signed an informed consent form. The ongoing task for the four conditions was to identify whether the item exemplar on the right of the screen belonged in the category presented on the left of the screen. In addition, the PM task for all participants was to mark an "X" next to the trial number when a building was displayed in the trial. Both the ongoing and PM task instructions were read to the participant by the researcher. Ten practice trials followed. At that time, if participants had any questions, they were answered before the rest of the experiment continued.

Each of the 280 trials remained on the screen for 5 s. There were three breaks of 30 s between each block of trials. The four PM cues appeared within a minute period at the delay time for each delay group. At the end of the experiment, the participants were debriefed.

Results

The effect of delay on prospective memory accuracy was tested. A one-way analysis of variance (ANOVA) was run on the accuracy data with an alpha level of .05. Means and standard deviations for PM accuracy can be found in Figure 1. PM accuracy in all conditions was

relatively low. We found that the effect of delay on PM accuracy was not significant: $F(3, 37) = 0.06$, $p = .98$.

In addition to PM accuracy, we analyzed the ongoing task accuracy for each delay. With an alpha level of .05, a one-way ANOVA was used to analyze these data. Means and standard deviations for the ongoing-task accuracy can be found in Table 1. The ongoing-task accuracy was high in all conditions. Results indicated that the effect of delay on the ongoing task accuracy was not significant: $F(3, 37) = 1.44$, $p = .25$.

Discussion

The current study was designed to examine how the amount of time between the PM instructions and the presentation of the PM cue affects PM accuracy. The hypothesis was that as delay increased, PM accuracy would decrease. The results of the current study indicated that PM accuracy was not significantly affected by delay. The overall PM accuracy was low for all conditions. It was also found that delay did not affect the accuracy of the ongoing task. The overall ongoing-task accuracy was high in all conditions.

The present results are consistent with some previous studies that found no effect of delay on PM accuracy. An example of such a study is that of Nigro and Cicogna (2000), where they found no effect of delay for delays from 10 min to 2 weeks. In the current study, results consistent with Nigro and Cicogna's were found for delays from 5 to 20 min. However, the present results are inconsistent with those reported by Meier et al. (2006). They found significant effects of delay for delays of 5 to 45 min. The inconsistency could be due to the way delay was manipulated (e.g., no distractor task was used in the present study) or the shorter delays used in the present study.

This study examined the effects of delay on PM accuracy in the hope of better understanding factors that affect PM and how similar PM is to retrospective memory, which typically shows an effect of delay. The results of this study indicated no effect of delay on PM. Future studies should continue to explore delay as a possible factor that affects PM to allow us to fully understand how PM works.

References

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Table 1

Means and Standard Deviations for Ongoing Task Performance by Delay

Delay	*M*	*SD*
5 min	.97	.05
10 min	.95	.04
15 min	.98	.04
20 min	.96	.03

Figure 1

Mean Proportion Accuracy for Prospective Memory Task as a Function of Delay