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Form Approved
OMB No. 0704-0188

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3. REPORT TYPE AND DATES COVERED
ANNUAL 01 Oct 90 TO 30 Sep 91

4. TITLE AND SUBTITLE
INDIVIDUAL DIFFERENCES IN MEMORY DECAY AND RETENTION

5. FUNDING NUMBERS
AFOSR-91-0014
PE - 61102F
PR - 2313
TA - A7

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AFOSR-TR- 92 0205

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10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

12b. DISTRIBUTION CODE

13. ABSTRACT (Maximum 200 words)

A new laboratory has been built for the study of individual cognitive abilities. Ten computer workstations are in place, with software installed. Initial data collection is over halfway course of retention for verbal material will be analysed this summer.

14. SUBJECT TERMS

15. NUMBER OF PAGES

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
(U)	(U)	(U)	(U)

Annual Technical Report

1990-1991

Individual Differences in Memory Decay and Retention

Grant AFOSR-91-0014

Robert K. Young, Principal Investigator
University of Texas at Austin

Summary. Approximately 170 subjects have been run of the 250 subjects who were originally scheduled to be run. Each subject was scheduled for four different sessions with the first and fourth being eight weeks apart. The remainder of the subjects will be run in the spring semester of 1992. Data analysis will be conducted in the Summer of 1992 with final report being submitted in October 1992.

Generic advice for any consultant is to determine the number of hours a project will take and then multiply that number by four. The resulting product will be half the number of hours the project will take. Something similar to this seems to have happened in this project. The amount of planning, coordination and effort involved in every step of the project seems to have been underestimated by me.

Chronology. The grant was initially funded on December 1, 1990. Because of the decrease in activity around the Christmas holidays, the start of the process involved in buying equipment was delayed until the end of January 1991. Since our departmental computer experts thought that we could get more and better equipment specifically tailored to our needs by not buying computers already under state contract, requests for bids were sent out around the end of February. A couple of months later, May 1991, we bought 10 386K IBM clone computers, which the departmental computer experts told me were very good buys.

Once the equipment had been acquired, I next turned to the problem of the programming of the experiment. I simply had no idea of the time and difficulty involved in setting up the programs for the experiment. Luckily for me, OAO, the company that provides programming assistance to the LAMP project for the Armstrong Labs at Brooks AFB was able to do my programming for me. Even so the programing took close to four months--from June 1991 to the end of September 1991.

I had been promised space by the Department of Psychology to conduct the research and this promise was kept. The laboratory space to which I was assigned was large enough to accommodate the 10 computers that I had

bought under the grant. This space was being vacated by another faculty member of the Department of Psychology. This faculty member was moving to to-be-renovated quarters and renovation was to occur in the Summer of 1991. Unfortunately, renovation of his new quarters had not been completed by the beginning of the fall semester 1991 and he could not move out until renovation of his new quarters had been completed.

Thus at the beginning of the fall semester 1991, I had my computers but I had no place to put them and if I had the space, the programs were not quite ready to be used.

I could not occupy the space that had been assigned to me because it was still occupied by another faculty member. However, the Department of Psychology was able to offer me slightly smaller quarters. I took them. And then by the third week in September, the programing was complete. I could now run the experiment.

With the help of my graduate research assistant, Carlos Contreras, and about 10 undergraduate assistants, we were able to run about two thirds of the subjects required by the experiment.

The first week we lost 20 subjects through equipment failure. That was only the beginning of our problems with running freshmen subjects. The design of the experiment required that each subject would come in today, tomorrow and eight weeks from now. In addition, each subject had to come in to take a multiple choice test. Although this was the most complex experiment I had conducted since my dissertation, I was still not prepared for the difficulty involved in getting subjects to return after a long period of time.

Although we had little difficulty in getting the subjects to return the next day, it was much more difficult to get them to return after 4-6 weeks. Although schedules were posted on the door of the room in which the experiment was conducted, subjects seemed to have difficulty finding that room again. To compensate for this problem, announcements were made in the introductory psychology class in which the participating subjects were enrolled. It seems that many freshmen do not bother to come to class. We had the telephone number of each subject who was serving in the experiment. As a consequence each subject was called by our experimenters. Two interesting facts were discovered in this phase of the experiment: 1) freshmen are never home and 2) all freshmen have a telephone answering machine. By this time we were alerted. After the third session each subject was told when his (or her) fourth session was scheduled. In addition each was shown the posted schedule. Finally, each subject was then called shortly before the scheduled fourth

session, after being reminded in class, and told when to return for his (or her) final session.

We seem to have had a relatively low rate of subject mortality. Of the 200 subjects initially scheduled--time constraints did not allow us to schedule all 250 subjects--we lost 20 to equipment failure and we ran about 170 subjects. Subtraction indicates that we lost only about a total of 10 subjects. These subjects either had dropped the course, dropped out of school, failed to show up for the initial sessions or were unable to be found at the end of the semester. At this point we do not know what happened to these 10 people. In addition, there will be subjects for whom we have incomplete data--someone may, for example, have come in for the fourth session but not the third, or vice versa. And finally, there will be subjects who were given the wrong task in the second or fourth session because of experimenter error. Only when we get the data set assembled will we be able to get an informed idea about how many additional subjects were lost.

Subject mortality should not be too big of a problem for us--aside from the obvious threats to validity--because we will run additional subjects in the spring semester of 1992. We are planning on running an additional 150 subjects. The total number from the fall and spring semesters combined should be around 300 subjects--somewhat more than we anticipated running initially.

We anticipate analyzing the data from the experiment in the summer of 1992 and then writing a final report which should be completed by October of 1992.