Spring, 1995
D. Hintzman

Psychology 433/533
Learning & Memory

Office Hours: 307 Straub, M 2-3:30; T 10-11:30

Text: Wilhite, S.C. & Payne, D.E. (1992) *Learning and Memory: The Basis of Behavior*

Tentative Schedule:

Week of	Readings	Exams, Papers etc.
Mar. 27	Ch. 1	
Apr. 3	Ch. 2	
Apr. 10	Ch. 3	
Apr. 17	Ch. 4	
Apr. 24	Ch. 5	**Paper #1** due Monday, April 24
May 1	Ch. 6	**Midterm Exam,** Monday, May 1 (Ch 1-5)
May 8	Ch. 7	
May 15	Ch. 9	
May 22	Ch. 10	**Paper #2** due Friday, May 26
May 29	Ch. 11	(No class Monday)
Exam Week		**Final Exam**, 10:15, Friday, June 9 (Ch 1-7, 9-11)

Learning and memory have always been considered to be among the most basic topics in psychology. These processes have therefore been the subject of a great deal of experimental and theoretical work, reported in thousands of articles, extending back for more than a century. Because humans share many learning abilities with other animals, much of the most important research in the field has been done on non-human animals. Processes that depend on verbal abilities, of course, can be studied only in humans. Accordingly, about half the research covered in this course was done on animals and about half on humans.

The purpose of this course is to give students an overview of the most influential theories and findings in this important and extensive area of research. Because of the nature of the material, the textbook does not read like a novel. To get the most out of it (and out of the lectures), will you need to think analytically about theories and how they relate to experimental designs and experimental outcomes. That kind of reading requires both effort and time, so you should plan your study schedule accordingly. The reading includes all of the text except Chapter 8.

Exams: There will be a mid-term and a final exam, both multiple-choice. The midterm will be worth 50 points, and the final, which will be comprehensive, will be worth 90. The exams will cover material from lecture, as well as the indicated readings.

Paper: There are two paper assignments, worth 30 points each. Late papers will be docked 4 points per week-day that they are late. Both assignments require that you design an experiment. The specific assignments can be found on the back of this page.

Grading: Grading will be based on the summed points from the exams and the papers. The total number of points possible is 50 (mid-term) + 90 (final) + 2 x 30 (per paper) = 200.

Paper Assignments

As is shown on the class schedule, there are two paper assignments, due during the 5th and 9th weeks of the term. For both assignments, you are to design an experiment to test a particular hypothesis.

Each paper should contain 3 parts: (1) An **introduction**, spelling out the hypothesis (or hypotheses) to be tested and explaining how the hypothesis is related to the general theoretical question raised in the assignment (see below). It is often useful here to give a brief overview of the experiment, to make it clear how the design relates to your hypothesis. (2) A **method** section, describing the design of the experiment. It should include a concise account of the manipulations defining each experimental condition, so that the reader can understand what sequence of events will be experienced by a subject. This section should make clear what are the independent and dependent variables, and what steps have been taken to control for extraneous factors. The method section is the most important part of the paper, and should be written with care. (3) **Anticipated results.** This section should clearly describe different possible outcomes, and indicate what implications each would have regarding the experimental hypothesis (i.e., what result would you expect if the hypothesis is true, and what result if it is false?). Graphs of idealized results can be especially useful for this purpose. You should also consider possible outcomes that would suggest that, despite your best efforts, the experiment may not have been an appropriate test of the hypothesis.

It should be possible to do each assignment in under 10 pages. Grading will depend primarily on the overall logic of your paper, although (as always) poor writing will entail a penalty. Creativity will be worth a couple of points.

Paper #1

Many learning theorists have assumed that stimulus-stimulus and response-stimulus contingencies that affect behavior in classical and instrumental conditioning produce their effects automatically, and that this is as true in humans as in other animals. Others have argued that the effects of such contingencies on human behavior are mediated by subjects' conscous beliefs the causal relations among events. Thus according to this second view, human conditioned behavior is not unconsciously determined, or automatic, but depends on people's interpretations of why the perceived events have occurred. Your assignment is to design a human conditioning experiment to distinguish between these two general theoretical views. The experiment should address the question of automatic vs. consciously controlled behavior in one of the following learning phenomena: (1) extinction and spontaneous recovery; (2) associative blocking; (3) learned helplessness; (4) behavior under fixed-ratio vs. fixed-interval schedules.

Paper #2

Researchers studying human memory have developed numerous experimental methods to help them investigate memory phenomena in carefully controlled (and therefore artificial) laboratory situations. A few psychologists, however, see this as a disadvantage. They argue that artificial tasks, such as paired associates and free recall, are likely to produce artificial results. According to this view, tasks lacking "ecological validity" are unlikely to tell us about how memory works in everyday life—for example, in educational, business, or leisure settings. Your assignment is to design an experiment that has more ecological validity than standard memory tasks, in that it mimics in important respects an everyday-memory situation, but that nevertheless includes essential experimental controls. The experiment should be designed to demonstrate one of the following memory phenomena: (1) retroactive interference; (2) proactive interference; (3) maintenance vs. elaborative rehearsal; (4) serial