

**Psychology 357: Experiments in Cognitive Science: Human Information Processing
Spring Semester, 2001**

Optional Readings and a "Listening"

Optional Readings

The first four readings listed here are available on the web, at <http://psychclassics.yorku.ca> . Antiquarians should enjoy many other items in this rich collection.

OR1 William James on the "span of apprehension". In W. James (1890) *The principles of psychology, Volume 1*, In Ch. 11: "Attention". Pp. 405-409 in the 1950 Dover edition. At <http://psychclassics.yorku.ca/James/Principles/prin11.htm>, from the start of the section on "TO HOW MANY THINGS CAN WE ATTEND AT ONCE" to mention of Professor Exner and the "minimal perceptible succession". [Relevant to iconic memory.]

OR2 William James on "primary memory". In W. James (1890) *The principles of psychology, Volume 1*, In Ch. 16: "Memory". Pp. 643-648 in the 1950 Dover edition. At <http://psychclassics.yorku.ca/James/Principles/prin16.htm>, the section on "PRIMARY MEMORY". [Relevant to iconic memory and short-term memory.]

OR3 James McKeen Cattell (1886-7) on various aspects of reaction time. See "The time taken up by the cerebral operations", Parts 2, 3, and 4, at <http://psychclassics.yorku.ca/Cattell/Time/part1-2.htm>, (II. The Reaction-Time), /part3.htm (III. The Perception Time), and /part4.htm (IV. The Will-Time). [Relevant to LABS 3, 4, and 5.] Some of you may know that the Psychology Department computer is named after Cattell, one of the pioneers in using reaction time measurements to study mental processes, and who started the psychological laboratories at Penn in 1888. See the display in the corridor opposite C-41.

OR4 George A. Miller (1956) The magical number seven, plus or minus two: Some limits on our capacity for processing information. *Psychological Review*, 63, 81-97. An influential paper that reflects the then enthusiastic application within psychology of Claude Shannon's mathematical theory of communication (*Bell System Technical Journal*, 27, 1948), otherwise known as "information theory". At <http://psychclassics.yorku.ca/Miller/> . [Relevant to the "information-processing approach" to understanding the mind, and the idea of capacity limitation.]

OR5 For a discussion of why evidence from applications of signal-detection theory argues against the modularity of sensory and decision processes, and what the reasons might be, and also for a comparison of two alternative measures of the decision process, see pp. 172-178 and 228-229 in S. Sternberg (2001) Separate modifiability, mental modules, and the use of pure and composite measures to reveal them. *Acta Psychologica*, 106, 147-206. This is the first paper listed on Sternberg's web page: <http://www.psych.upenn.edu/~saul/>. The full text is provided in a pdf file (Acrobat reader needed). Within the reader, the page numbers that start the two sections are 26 and 82.

An Optional "Listening"

OL5 Interview of Saul Sternberg by Vicki Loftquist, broadcast in 1984 as part of a series on Psychology by Minnesota Public Radio. This can provide a sense of why I am enthusiastic about the subject matter of Psychology 357. In particular, it focuses on LAB 3 on retrieval from working memory. The interview is available on the Psychology 357 Web Page, at <http://www.psych.upenn.edu/courses/psych357/> . Your browser must have a plug-in that enables you to listen to sound files (e.g., "Real Audio" or "Real Player").

