**Cognitive Psychology 230Bm -- Laboratory Practical Students' Guide**

**Practical 1: The Duration of the Icon**

This practical demonstrates how visual information no longer present in the environment is stored briefly in the visual sensory register (iconic memory). George Sperling (1960) was interested in how much information was maintained by the sensory register and how long it lasted. Prior to Sperling's interest, very early research on reading had shown that only about four or five letters could be recalled from a single brief glance while reading (Erdman & Dodge, 1898). Thus, up until the time of Sperling it was assumed that the "size of the icon" or content of the sensory register was limited to four or five items. Sperling questioned this assumption and hypothesized that all of the visual information might be present in the sensory register but decayed (or was erased) before a person was able to report all of the contents. He based his hypothesis on his experience that even when he saw a very short "flash" of a visual scene (like a lightning flash on a dark night) he had a sense of a very rich visual memory that began to disappear as he tried to identify the various items in the scene. Sperling then designed an ingenious experiment to test his hypothesis. He would present a very brief "flash" of information (lasting only 50 msec) and then ask people to try to report as much information as they could remember from it – a "full report" condition. In another condition, he would follow the flash of information with a cue telling the participants which part of the scene to report – a "partial report" condition. If people could successfully report the different parts of the scene when given a cue then all of the information must be available in the sensory register. Sperling also investigated the duration of the sensory register by varying the delay between the flash and the cue, if the cue was delayed too long the information would already have decayed and the participants wouldn't be able to report many of the items in the scene.

You are about to try Sperling's demonstration. You will see a fixation point on the computer screen (a plus sign) followed by a brief flash of information (three rows of four letters each, presented for 50 msec). Your task is to try to report all of the letters flashed on the screen (in any order you can). One block of 30 trials will be the full report condition, you should try to report as many of the 12 letters as you can. In the partial report condition the flash of information will be followed by a tone as a cue for what part of the flash to report; if you hear a high tone, report the top row of letters, for a mid tone report the middle row; a low tone, the bottom row. These tones will occur either immediately after the flash (0 sec delay), 150 msec after the flash, or 500 msec after the flash (there will be 30 trials at each delay). Before the demonstration begins you will be given 10 practice trials on both types of trials (partial report and full report). You should write down your results on the sheet provided and bring it to the next week's practical for comparison with the rest of your group's data.

**Additional Reading** (optional)**:**

Sperling, G. (1960). The information available in brief visual presentations. *Psychological Monographs*, *74*(11).

Erdman, B. & Dodge, R. (1898). Psychological studies on reading. Cited in R. Woodworth & H. Schlossberg *Experimental Psychology*. New York: Holt, 1958.

**Some questions for you to consider:**

What was the experimental hypothesis? What was the dependent variable (measured)? What was the independent variable (manipulated)? Did your results support Sperling's hypothesis? What strategies did you use to do the task? What kinds of things in your everyday life use the sensory register?

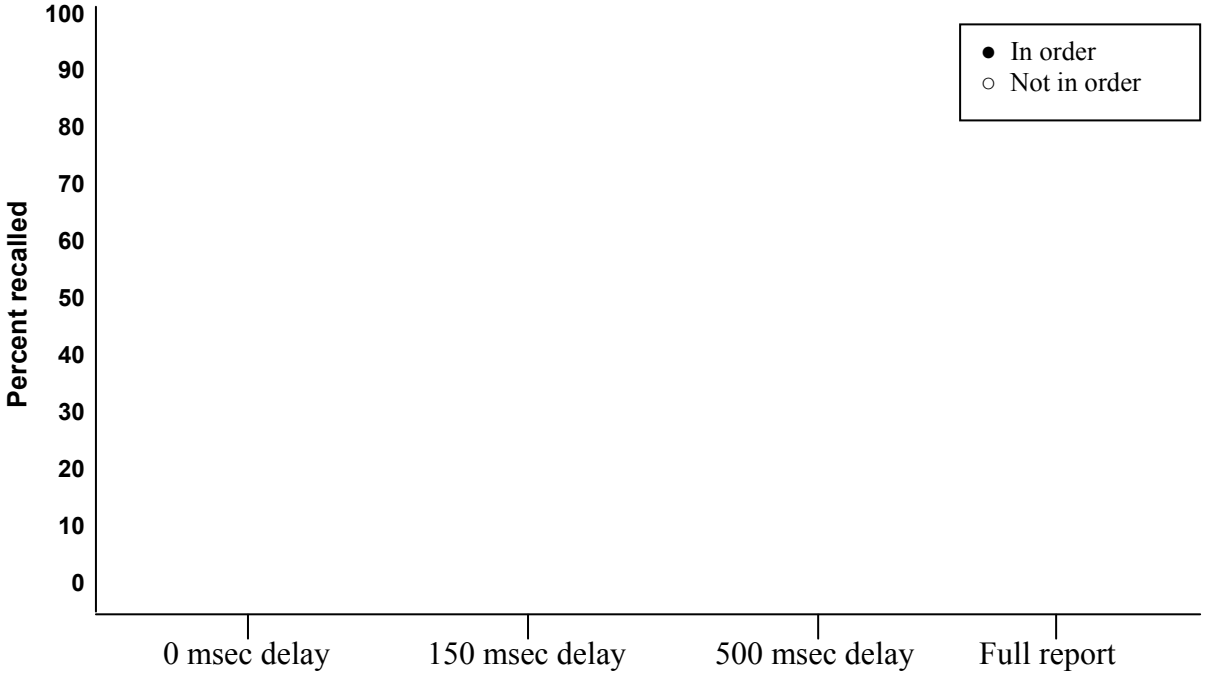
**Prepared by Samuel G. Charlton, Waikato University, 2001**

# Data Sheet

## Your data

Percent of letters recalled:

| | 0 msec delay | 150 msec delay | 500 msec delay | Full report |
|---|---|---|---|---|
| In order | | | | |
| Out of order | | | | |




## Group data

Percent of letters recalled:

| | 0 msec delay | 150 msec delay | 500 msec delay | Full report |
|---|---|---|---|---|
| In order | | | | |
| Out of order | | | | |