THE PROCESS OF REMEMBERING PICTURES

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C O N T E N T S

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

Eight experiments were carried out to investigate processes involved in remembering pictorial stimuli. Because of difficulties encountered in measuring memory for this kind of material, previous investigations in the area (reviewed in Chapters One and Two) have not successfully estimated the capacity of memory for pictures or specified the nature of its encoding processes. A new recognition paradigm, the exclusion set method, was developed in order to measure the accuracy of the subject's memory for representational drawings. It was used to refute two hypotheses: (1) that memory for pictures has a phenomenally high capacity (Experiment 1), and (2) that encoding of pictures is an automatic process (Experiments 2 and 3). Another method of recognition testing was then devised to examine the constructive nature of the encoding process in more detail, in a study of memory for abstract shapes (Experiments 4 to 8).

Experiment 1 tested subjects' memory for pictures after delays of one, two, seven and 60 days. There was evidence that memory is limited in capacity, since subjects were not accurate on the recognition task. Memory declined after one week's delay and again after two months.

To determine whether the elaboration of subjects' encoding strategies affects memory for pictures, intentional and incidental instructions were manipulated in Experiments 2 and 3. Three instructional groups were tested in each experiment: (1) an Incidental group not told of the memory task and instead given a picture-classification orienting task, (2) a Control group given the orienting task but told about the memory requirement, and (3) an Intentional group allowed to view the pictures freely without an orienting task. In Experiment 2, no differences between any of the groups was found, suggesting that despite subjects' different encoding strategies, all had encoded the same amount of information from the pictures. In Experiment 3, the Intentional group was altered to include a practice trial for this group only.

Intentional subjects given practice recognized more pictures than Incidental or Control subjects. This showed that different encoding activities carried out during presentation of a list of pictures can be variable and under the subject's control, rather than an automatic registration of information into memory.

Since encoding did appear to be a function of the subject's encoding activities, it was hypothesized that recognition would be affected by the amount of time subjects were given to process each picture. In particular, it was predicted that temporal variables would affect subjects' tendency to encode only parts of a stimulus without adequately encoding their combinations. The presence of inter-picture confusions in previous studies suggested that a "fragmented memory effect" is a common outcome of subjects' inadequate encoding activities. Experiment 4 found no effect of longer presentation time or ISI on recognition of shapes, but the fragmented memory effect was demonstrated empirically. The methodology of this experiment was improved and it was found that five seconds of presentation time led to more accurate recognition than two seconds (Experiment 5), though increasing the ISI from 1.5 to seven seconds had no effect (Experiment 6), and that subjects given two seconds of either presentation time or ISI performed more accurately than subjects 0.5 seconds (Experiment 7). Presentation time was found to be more beneficial than ISI, given the same total time. Thus, memory for whole shapes improved with longer presentation times and also with longer ISI's of short duration. A final experiment (Experiment 8) was carried out to see whether the fragmented memory effect could be altered, during fast presentation of pictures, with different perceptual strategies. Strategies altered the attention to different parts of the shapes but did not affect fragmented memory. The encoding process was discussed as a sequence of acts of attention to parts of pictures followed by an integration which is not always successful.