

Chapter V

Summary and Recommendation



The purpose of this study was to investigate the effect of heterogeneity and homogeneity of environment over learning.

Apparatus used in the study was two-floor barrel-shape table. The upper floor was used as a "field" for rats to solve their problem and lower floor served as the reinforcement situation (water). A ladder from upper floor to water box was constructed.

Rats, as the subjects in the study, were divided into three groups: WC, BC and BWC group. WC (white-cue) group was exposed to 12 white (homogenous) blocks set randomly in a "field" floor. BC (black-cue) group was exposed to 12 black (homogenous) blocks and BWC (black-and-white-cue) group was exposed to 6 white and 6 black (heterogenous) blocks. By these cues, rats were expected to find a way down to the alley to the water box. Before each test trial, rats were under 24 hours water deprivation.

After test trial, some of the rats had to be discarded for they did not try to solve the problem at all, they just sat indifferently and some just only "licked and groomed" themselves. So, for statistical analysis, there were 16 rats in WC group, 14 in BC group and 11 in BWC group.

The learning was defined by the difference of the mean time of the first three running trials and the last ones.

Analysis of variance was used in comparing the learning of those three groups. The null hypothesis was retained.

The result was that there was no significantly different learning among those three groups under those conditions.

The research hypothesis that heterogenous characteristic of environment yields better learning than homogenous characteristic of environment was not supported.

For further study, some critical points are recommended as follow:

1. Before experimentation, each rat should be thoroughly observed in order to know how "smart" each one is. This will facilitate the grouping and save some more time. A pretest for such observation is advisable. The criterion measure for the "smart" rats might be the speed of running, the energetic searching behavior and so on.
2. It has been observed during this study that the sound of ordinary talking and the movement of the experimenter (s) did not annoy or stop the animals' behavior. The knowledge of how the animals were reared might facilitate the handling during the experimentation. However, the preferential condition in laboratory is quietness.
3. A water box should be directly attached to the small hole with a shorter "ladder" down from that hole. This is suggested to be done to give the rats more immediate reinforcement.

4. The effect of "spatial orientation" VS "the stimuli" should be investigated to show whether Tolman's construct* is valid. Two groups of rats must be provided. One group should be run under blocks, and the other without. (The apparatus in this study can be used). The performance measure like the one used in this study is preferential. A comparison of the results by t-test technique might give satisfactory answer.

*See Background of the Study.