

three and last three observation periods would thus be indicated by a change in the distribution of scores above and below the mean. The Fisher test indicated a significant trend for the Experimental condition ($p=0.02$); the trend was not significant in the Control ($p=0.22$) supporting the above finding of a trend in the Experimental condition only.

The data on amount of time spent in front of both the mirror and the stimulus fish were analyzed, but no significant trends at either end were found in either condition. Thus, the increased preference for the center of the tank, which was found in the last three Experimental observations, did not result from consistent trends in the time spent at either end.

During the Control condition all Ss showed a bias toward the ends of the tank, making the trend toward the center in the Experimental condition more marked. Since the center portion made up two-thirds of the tank volume a mean of 10 min. out of 15 would be expected for center time if all positions were equally likely. Only one S spent this much time in the center during the entire Control condition, and the amount of time spent in each end of the tank remained approximately constant and equal, for each S.

Regardless of which end of the tank they went to initially in the Experimental condition, all fish spent more total time during seven observations in front of the mirror than in front of the fish. The ratio of total "mirror time" to "fish time" was nearly three to one. All Ss exhibited this pronounced preference for their own reflection over the sight of the real betta, although no qualitative differences in response to the two stimuli were noted.

Discussion

It seems clear that in the Experimental condition fish spent an increasing proportion of their time out of sight of the stimuli which elicited aggressive displays. This changing preference cannot be considered avoidance, since the center time in the Experimental condition was never significantly greater than in the Control condition, but the result does indicate a decreasing tendency to view stimuli which elicit aggressive displays. It appears that the reinforcing properties of such stimuli may exist for a limited time only, and that the extinction reported by Thompson may be due to this decreased tendency to approach mirrors and stimulus fish. Longer trials might show avoidance of these stimuli, but confounding with food deprivation effects or fatigue would be likely. In the later observations two fish were observed to swim rapidly away from the mirror whenever they caught sight of their reflections. Very few displays were noted during the last three observation periods, compared to initial continuous displaying by all subjects. This finding suggests that habituation of the display itself was occurring, and supports the more exact findings of Clayton. It thus appears that the tendency to approach stimuli which elicit the aggressive display, and the display itself, are subject to habituation.

References

- Thompson, T. I. Visual reinforcement in Siamese fighting fish. *Science*, 1963, 141, 55-57.
Thompson, T. I. Visual reinforcement in fighting cocks. *J. exp. Anal. Behav.*, 1964, 7, 45-49.

Note

1. F. L. Clayton, Personal communication (1965).

Errata

THOMPSON, R. F., DENNEY, DUANE, & SMITH, H. E. Cortical control of specific and nonspecific sensory projections to the cerebral cortex. *Psychon. Sci.*, 1966, 4(3), 93-94.—The second author's name should be spelled both on the cover and in the article itself as Denney (not Denny).

FRANK, R., & KENYON, J. Visual cliff behavior of mice as a function of genetic differences in eye characteristics. *Psychon. Sci.*, 1966, 4(1), 35-36.—The second author's name is Kenyon, not Kenton. Line 7 of the first paragraph after the abstract should read ". . . whether a selective breeding process . . ." not "a type of." In the paragraph following, line 6 should read ". . . effects of type of breeding," not "selective breeding."