

Effects of Distance and Angle of View on the Number of Reversals of a Fluctuating Figure

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ABSTRACT

It has long been suspected that the number of reversals per unit time of the Wheatstone-Necker Cube tapped some personality factor. William McDougall believed it measured introversion-extroversion. J. McV. Hunt and J. P. Guilford separated two psychotic groups with this measure and thought it measured "rigidity". Since then the cube has appeared in personality studies of the rigidity factor.

The experiment reported here is concerned with an attempt to standardize the cube. It is an attempt to get the conditions which produce maximum reversals. Specifically the number of reversals of the cube were investigated as a function of distance and angle of view.

Ten men and ten women between eighteen and twenty-four years of age, social science students at the University of Oklahoma, participated in this experiment. They were required to count the number of reversals of the cube in thirty-second intervals, under instructions to let the cube reverse of its own accord, then to keep it from reversing, from each of fifteen positions in a homogeneously lighted room. The fifteen positions were: 30, 60, 90, 120, and 150 degrees of an arc from the subjects' right, at distances of six, twelve, and eighteen feet. The lowest plane of the cube protruded to the subjects' right, that is towards the thirty and sixty degree positions.

The data were analyzed by a split design, analysis of variance technique yielding separate error terms for the correlated and uncorrelated variables. While the sex variable was not significant, distance, angle and trial, where trial is compounded with the "free" and "hold" conditions were all significant beyond the one one-hundredth per cent level. An unexpected finding was the significance of the sex and trial interaction. Inspection of a graph of these results appears to indicate that female subjects have a smaller range of change from the "free" to "hold" condition than do males. Perhaps we are tapping a personality factor which the clinicians have spoken of as "control".