THE MIRROR TRACING TEST AS A DIAGNOSTIC AID FOR EMOTIONAL INSTABILITY

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Tracing a star in mirror vision has, according to Whipple (1915), been in use in psychological laboratories for studies on learning and muscular movement for half a century. The use of this technique in studying the efficiency of motor performance as an indicator of personal stability was apparently first reported by Weidensall (1916). She found the average times in seconds taken on first trials (size of star not stated) to be: Bedford Reformatory inmates, 473.1; college maids, 133.6; and college students (women), 82.6. Error scores, i.e. quality of performance for the same groups were 204.6, 58.1, and 46.8 respectively. While the data are not presented as completely as one would like the author’s confidence in the test is expressed thus: “this test isolates better than any we have tried at Bedford those who are incapable of sustained effort.”

Holsopple (1932) divided male reformatory inmates by the quality of their star tracings into the poorest and best groups of 40 from a total population of 200 and compared certain items of their histories. Men in the poor performance group had had 105 arrests before conviction, while those in the good group had only 74; the poorest group had 52 reports for infractions of institution rules, while the best had only 37. Without presenting detailed evidence Holsopple claims definite value in this test for indicating instability and says, “those recidivists who seem to be rather the victims of an overwhelming unfavorable environment than to have deep-seated personal disabilities show a minimum of difficulties in their mirror drawing.” Bois (1937), using a score combining time and errors found with 67 subjects that the distribution gave a J-shaped curve, with 62 subjects having scores between 50 and 500 points and 5 subjects scoring between 600 and 950 points. Each of these five subjects were found to be “particularly feeble in emotional control.”

1 Opinions expressed herein are those of the writer only and are not to be construed as official or reflecting the views of the Navy Department or the Naval service at large.
The essential agreement among these three studies, and the lack of contrary evidence would seem to justify further experimental exploration of the method.

**METHOD**

**Apparatus.** While the essentials of the mirror tracing apparatus are simple there has not been uniformity in the details among different investigators. Therefore, in the interests of standardization the apparatus used in this research is described. A mirror is mounted across one end of base board of 3 ply-wood, 16 x 12 1/5 inches. In front of this at about 7.5 inches is a frame of 1 x 0.75 inch wood to which are fastened angular blocks on either side to support a board screen. The frame is open at the base so that the records sheets can be fastened to the base board. These dimensions should be considered approximate, although they have been determined by experiment to be satisfactory.

The record blanks have a mimeographed six-pointed star with necessary blanks for identification and record. The star is inscribed in a circle with a 2.75 inch radius. It is placed on the sheet with one of the longest axes at an 18° angle from the vertical. In placing the sheet in the baseboard it is fastened with the lower edge even with the edge of the baseboard toward the subject. The starting point, which is toward the subject is marked with a short cross line and an arrow indicating the direction of initial movement.

**Directions.** With the sheet properly fastened the subject was allowed to place his pencil on the cross mark in direct vision. He was then told to look only in the mirror and the following directions were given: "Trace the outline of the star going in the direction of the arrow. Work as rapidly as you can but try to keep on the line. Keep your pencil on the paper all the time."

**Scoring: Time.** The time of performance was taken with a stop watch, from the first movement of the pencil until return to the cross line. Time was recorded only to the nearest quarter minute. The time for subjects who refused to complete the performance was taken at 20 minutes. In this experiment no time limit was imposed, but the data indicated that a limit of 10 or even 5 minutes may be suitable in practice.

**Scoring: Quality.** There is wide variation in the quality of performance with a continuous degree of gradation. Several methods