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The Personal Equation in Motor Ability

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- C. Timbre — its primary mechanism of control
 - 1. Physiological
 - a. Resonating cavities
 - b. Vocal cords
 - c. Supra-laryngeal muscles
 - d. Laryngeal muscles
 - 2. Psycho-physical
 - a. Pitch discrimination
 - b. Intensity discrimination
 - c. Timbre discrimination
- D. Volume — its mechanism of control
 - 1. Physiological
 - a. The general mechanism of voice production
 - 2. Psycho-physical
 - a. Intensity discrimination
 - b. Timbre discrimination
 - c. Extensity discrimination
- E. Time — its mechanism of control
 - 1. Physiological
 - a. The muscular mechanism of voice production
 - 2. Psycho-physical
 - a. Time discrimination

THE PERSONAL EQUATION IN MOTOR ABILITY

MARTIN L. REYMERT

In order to try out experimentally the common notion, that an individual will show a constant behaviour as to speed and accuracy in all kinds of motor performance — within his group — a series of reaction and motor tests were given to sophomores. The tests were: (1) Tapping in group (with pencil). (2) Individual tapping (on telegraph key). (3) Counting numbers orally. (4) Writing numbers. (5) Counting and writing as one combined activity. Simple bodily reactions of (6) the lips, (7) the jaws, (8) the index finger, (9) the head, (10) the elbow, (11) the thumb, (12) the foot. (13) Ergograph test.

Throughout this test series the individual behaviour was judged in terms of speed (time) and variability (mean variation). The raw-correlations (Spearman) have been pooled.

The main results:

1. There is a distinct personal equation as to speed throughout all tests — the intercorrelations here being positive, very high and very reliable (as judged by P. E.).

This result may have the bearing on motor tests for vocational selection, that one or two representative motor tests will suffice

as to the placing of an individual in a group — regarding quickness of action.

2. It is impossible to predict from one or two motor tests how a subject will rank in his group as to individual variability (constancy) in other motor tests. At least the M.V. shows up to be a fleeting factor from test to test. Either the M.V. is not a minute enough measure of individual variability or no personal equation exists in this respect. The negative outcome ought to have the greatest bearing on vocational motor testing.

A wealth of other significant general and special results, which lack of space forbids stating in full here, also were evolved from the above investigations.

It may suffice to note, as a matter of general interest, that regarding the highest rate of movement for the different bodily members, we get the following sequence:

(1) lips, (2) index finger, (3) jaws, (4) thumb (grip), (5) elbow, (6) foot, (7) head.

As to the range of different bodily reactions, we may state that the individual's variation from the average of the group is very nearly proportional to the personal range in M.V. for all parts of the body here tested except the jaws. The rate of the quickest bite, then marks out the individual most clearly in the group.

SERIAL ACTION AS A BASIC MEASURE OF MOTOR CAPACITY

C. FREDERICK HANSEN

Motor tests involving "continuous discriminative reactions" or "serial action" are being standardized by the psychologist with the end in view of reproducing, in dealing with his practical problems, the actual conditions of simple daily motor activities more closely than obtained in the traditional reaction time tests. These newer measures of motor capacity recognize the essentially fluid character of stimuli and reactions—their fundamentally continuous interplay, which is apparent not only in simple motor achievements like walking or handling tools, but also in the complex activities of the musician, the telegrapher, the typist, or the expert mechanician. In the analysis, therefore, of motor capacities for clinical, vocational, or industrial purposes, the performance of a subject in a standardized test of serial action may serve as an index of his basic motor capacity, applicable to many problems.