

SCIENCE

VOL. LIX

MARCH 21, 1924

No. 1525

PROBLEMS OF HUMAN VARIABILITY¹

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SCIENCE: A Weekly Journal devoted to the Advancement of Science, edited by J. McKeen Cattell and published every Friday by

THE SCIENCE PRESS

Lancaster, Pa.

Garrison, N. Y.

New York City: Grand Central Terminal.

Annual Subscription, \$6.00. Single Copies, 15 Cts.

SCIENCE is the official organ of the American Association for the Advancement of Science. Information regarding membership in the association may be secured from the office of the permanent secretary, in the Smithsonian Institution Building, Washington, D. C.

Entered as second-class matter July 18, 1923, at the Post Office at Lancaster, Pa., under the Act of March 3, 1879.

WHEN I was first introduced to the literature of experimental psychology, there was one characteristic, frequently recurring phase of the numerical expression of experimental results that commonly aroused a mild resentment. Along with central values, which were then almost universally expressed in terms of the average, there was usually a smaller numeral which bore the curious legend of "mean variation." As a student I had a suspicion that the legend had some connotation of disapproval and regret. In later laboratory experience, of course, that early resentment gave way to a complacent tolerance. The mean variation came to be a legitimate part of the game. But I never outgrew the suspicion of disapproval and regret. As the years have passed, this suspicion has grown into a conviction that contentment in the mass expression of human variations is not good science.

As my scientific interest developed into experimental investigations of my own, variability loomed more insistently and menacingly as a great barrier to real science. Notwithstanding all practicable care to preserve the constancy of stimuli, and notwithstanding the increasing reliability of recording techniques, the experimental shadow was never lost. It was only slightly reduced. Every effort to state the effects of experimental investigation in exact terms sooner or later encounters the same anomalous limitation. If, peradventure, in consequence of a great number of measurements and their statistical treatment, a point is reached where further data have relatively little effect on the central value, the fact of variability still remains to invalidate the application of that abstract central value to the next actual facts of experience. Apparently variability is quite as real as the central value. Notwithstanding our accumulated fund of painstaking measurements, there are conspicuously few dependable constants in psychology. For a science that seeks to express itself in terms of invariants the facts of mental life are woefully unaccommodating.

Two scientific experiences strengthened my conviction that variations in psychology must be taken seriously. The first was technical. In the study of fatigue, as well as in the study of the neuro-muscular effects of alcohol, the most conspicuous feature of the

¹ Address of the vice-president and chairman of Section I—Psychology, American Association for the Advancement of Science, Cincinnati, December, 1923.

Science

59 (1525)

Science **59** (1525), x-284.

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