

9 November 1934.

Dear Whately Carington,

There is one effect of adding up the results of a number of sittings that you may or may not have considered. That is that when the number of sittings is increased random fluctuations become relatively less important in the totals or averages in comparison with the permanent differences in emotional value which these words have for different personalities. Consequently without taking any account of the number of sittings, other than by adding up their results, the tests will grow more sensitive and the values of \bar{g} , if there is anything there to detect, will grow more significant as more data are amassed.

I have been wondering if some mentally manageable model would not help you in separating the merely statistical questions from those of ulterior interpretation which probably must always be in your mind, and which may confuse you.

Suppose you compare the different words on your list to different measurements of the human body, e.g. home - head length, tiger - head breadth, and so on. People are still people and occasions are still occasions for repeated measurement. Then if for both of two subjects the head is longer than it is broad, though the difference or the ratio may not be the same, \bar{w} will steadily increase as the number of occasions is

is increased in comparison with OWP, which I take to be basic error. If the difference between the measurements was really the same in both subjects, WP would be due to error only, and so would generally keep within an insignificant ratio of OWP. Consequently, $\frac{W}{WP}$ would rise indefinitely with increased repetition. If, however, the difference was unequal in the two subjects, a stage would be reached sooner or later, in which the accuracy of the average measurements was sufficient to detect this difference between the two individuals. Then WP would work itself clear of OWP and thereafter increase proportionately to W.

I believe from the first I have attached less importance than you to $\frac{W}{WP}$, because it seemed to me that this might be significant without sufficient trials, even for quite independent subjects, just as the head length is greater than the breadth for all normal men.

All analogies have weak points. To avoid possible confusion let me confess that anthropometers would actually be more interested in the ratio $\frac{S}{L}$ than in the difference $L - B$. This is slightly arbitrary of them, but they may be right, and for their purpose the arithmetic would have to be adjusted so as not to test merely variations in $L - B$, which would, of course, show some real variations if all heads were the same shape.

What I believe is fundamental in your material is $\frac{WP}{OWP}$ corresponding to differences between different people in the shapes of their bodies or the configurations of their minds.

Yours sincerely,