

27 March 1934.

Professor G.H. Thomson,
Department of Education,
Meray House,
Edinburgh.

Dear Professor Thomson,

Many thanks for your information about Otis test. If for children of the same age the reliability goes down to 0.92, that at once accounts for rather more than half of what Hogben ascribes to environmental effects acting before birth and in infancy. In fact, it was grossly negligent of him to apply the question of reliability and to take no duplicate tests himself.

I see that the average of $\frac{1}{2}(n-1)$ correlations between n variates can have all positive values up to one, but cannot be more negative than $-\frac{1}{n-1}$ and this, I think, is due to the fact that positive correlations have a way of being positively correlated with each other, while negative correlations have a tendency to be negatively correlated, which makes their average much less variable, but I do not think it implies that any particular correlation chosen at random is more likely to be positive than negative; for suppose the choosing at random took place in two stages, the

one, the choice of what to measure and the other that the choice whether to count the measurement positive or negative. If equal probabilities are given to this latter choice any particular correlation has an equal probability of being positive or negative, but yet, the aggregate of the whole set will have its average limited in the same way as before.

Yours sincerely,