

10 February 1943

Dear Mr. Lyle,

I am enclosing a copy of my reply to your letter of January 7, which evidently never reached you; I am sorry you were troubled by having to write again. However, I am glad to have your reaction to Mather's book. During the few years he was with me at the Galton Laboratory I thought that he made quite marvellous progress, taking up point after point in turn as he saw its practical use in genetical and associated experimental work. He was extremely keen, as his book shows, to see the advantage of new developments; but, of course, having the great virtue of wanting to use the methods as an aid to active thought about what he was interested in, he was not likely all at once to take a balanced view of the applicability of statistical methods in other fields.

No, I really attach very great importance to Fiducial Probability and Fiducial Limits chosen as having definite probability in this sense. It seems to me to go very far to resolve the enigma as to how minds as rational as Laplace or de Morgan could have accepted the earlier doctrine of Inverse Probability. There really was something there, though they formulated it wrongly. However, as I emphasised one time ~~in the discussion following a paper given by Neyman to the Statistical Society~~, I have deliberately advocated caution in its use, partly

because Neyman and Pearson were obviously making quite erroneous applications of it under the variant name of *Confidence-Intervals*, partly because I had already found that, owing to early indoctrination with the notion of Inverse Probability, many of those who were using Fiducial probability were thinking of it quasi Inverse.

In fact the psychological entanglement is likely to be profound until it is more widely realised than it seems to be that a statement of probability is always as much a statement about a population as it is about a class of individuals: and that, while we choose at our own discretion what population it is of which we regard the class of individuals as part, yet we cannot shortly, and in brief we never try to, specify what population it is that we have chosen. I am quite sure, however, that in specifying tolerances needed for co-operation, including bargaining between institutions, Fiducial Limits provide what is wanted.

Yours sincerely,

P.S. In case you would like to see my remarks on Neyman's paper, I enclose an offprint (pages 614-619) which however I should be glad to have back.