

PREFACE TO THE SECOND EDITION

IN the circumstances that have prevailed in the world since the appearance of this book, it is a welcome indication of increased interest in the principles of scientific method that a second edition has been required. I have taken the opportunity to add some arguments that go far towards establishing the consistency of the product rule and therefore of the principle of inverse probability. A theory of invariance has been developed and applied to problems of estimation and significance, thus establishing the possibility of a consistent rule for stating prior probabilities over large parts of the subject. I am not satisfied that it is the only such rule or even the best one, but I think that enough progress has been made to indicate that the attempt is worth pursuing.

I have not attempted to answer explicitly the criticisms made by reviewers, because on examination I found that they were all dealt with in the book already. What does strike me as remarkable is that no mention was made of the fact that the book contained useful methods of treatment of several problems of practical importance. I have still not gathered what distinction those statisticians who do not accept the epistemological approach draw between estimation problems and significance tests, or whether they are saying anything about a hypothesis when they reject it. So far as I can judge from their pronouncements, they provide themselves with no reason against continuing to make predictions from it.

Several recent writers, especially in the United States, have described me as a follower of the late Lord Keynes. Without wishing to disparage Keynes, I must point out that the first two papers by Wrinch and me in the *Philosophical Magazine* of 1919 and 1921 preceded the publication of Keynes's book. What resemblance there is between the present theory and that of Keynes is due to the fact that Broad, Keynes, and my collaborator all attended the lectures of W. E. Johnson. Keynes's distinctive contribution was the assumption that probabilities are only partially ordered; this contradicts my Axiom 1. I gave reasons for not accepting it in *Scientific Inference*. Keynes himself withdrew it in his biographical essay on F. P. Ramsey.

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