

Rejoinder

B. S. Everitt

The diversity of comments made by the eight discussants may help to indicate some of my problems in preparing the original paper. Which topics to include and which to exclude? How much historical detail would be appropriate? Should I describe a number of applications in detail? Fortunately each of the contributions has helped to fill in the gaps that I left, namely in epidemiology and genetics, and to amplify the discussion of areas to which I referred only briefly. For this I am grateful.

Most discussants have begun with some type of historical account of the background to the use of statistics in psychiatry. Of particular interest is the detailed and fascinating account given by Professor Zubin, whose early attempts to persuade eminent psychiatrists to examine their data scientifically appear to have fallen on very stony ground! (See the opening remarks of Professor Fleiss' contribution.) As Professor Mezzich and Dr. Woo Ahn rightly point out a study of historical perspectives can be helpful in both understanding the current role of statistics in psychiatry and in appraising its future direction.

A question raised by Professor S. Greenhouse is whether a special article on statistics in psychiatry is justified, and he clearly finds little in my paper that identifies statistics in psychiatric research as different from the statistics applied in other areas. Of course, it would be a little surprising if he did; statistical science and its methods are quintessentially itinerant. The *t* test is not the sole preserve of the psychologist; archaeologists as well as psychiatrists have been known to employ the techniques of cluster analysis and geologists have explored the mysteries of factor analysis. What is unique for the statistician and his science in psychiatric research is the challenge of and the possibility of making major contributions to a discipline which is young, whose theories are still largely in the process of being formulated, which clearly requires an interdisciplinary approach with contributions from psychiatrist, psychologist, sociologist, geneticist, biochemist, etc. (a point echoed by the opening sentence of Professor Guthrie's contribution), and where the solving of problems may, in the long term, assist in the prevention and alleviation of much human misery and suffering.

Several of the contributions contain comments

about the two applications of Cox's regression described in my paper. Some are enthusiastic (J. Greenhouse and Turnbull), some critical (S. Greenhouse) and some ambivalent (Verducci). Hopefully such disagreement may be reassuring to any psychiatrist who comes across the paper; statisticians may often adopt a "holier than thou" attitude to the application of statistical methods by nonstatisticians, but it is not unknown for statisticians to be critical of analyses carried out by each other. In the case of the bromocriptine example in my paper, I remain convinced that the approach using Cox's regression is more satisfactory; of the analysis of length of stay data, I am now less convinced.

Professor Fleiss is worried about the comments made in my paper concerning the desirability of giving less emphasis to formal significance tests and more to informal exploratory techniques of the type advocated by Tukey and others. The implication of his argument, that it is not possible to produce an analysis of data which is scientifically respectable, which is not "junk," unless it is liberally scattered with *p* values is not one I would accept. The examples given in Chambers et al. (1983) convince me otherwise. Of course, I am not advocating the situation where significance tests are relegated to being performed by consenting statisticians in private, but I would like to see the dismayed expression, the slumped shoulders, and the anguish on the face of the research worker whose results have a *p* value of "only" 0.06, become a thing of the past.

I was interested by Professor J. Greenhouse's alternative class of survival models and by his account of research into biological markers of depression, amused by Professor Verducci's anecdote on the plight of the psychiatric statistician, and appreciative of the comments made by all the contributors on the importance of the teaching of statistics to psychiatrists (and of course, psychiatry to statisticians). To attempt to respond in detail to all the points made would make this reply of a length unlikely to be appreciated by the editor. Consequently, I will end by taking the opportunity to thank Dr. DeGroot for his generous assistance in preparing the final version of my paper, and each contributor for taking the time and the trouble to produce their detailed and pertinent remarks.