

unimpressed, for it seems to depart from the operational standards of the rest of the book. How, for example, can you choose an integer at random? Such a choice is at the root of the axiomatic difficulties.

The third section is devoted to induction and statistics, not in a narrow, technical sense but in the widest meanings of these terms. Adherents of the subjectivistic view of probability have been slow (and perhaps a little surprised?) to appreciate the catastrophic effect their ideas have on the practical problems of science. All scientists who are interested in the methodology of science could read parts of this section with profit.

The translation has not been well done and de Finetti's meaning is not always transparent. But this is an important book and should not be passed over on that account.

D. V. LINDLEY

## Freudian Controversy

*Fact and Fantasy in Freudian Theory.* By Paul Kline. Pp. x+406. (Methuen: London, January 1972.) £5.

THE controversy about the place of Freud's thoughts in general psychology shows no sign of abating. It is largely maintained not by psychoanalysts, who unfortunately and in contrast to Freud show now all too little interest in general psychology, but by efforts at refutation and more or less bad tempered attacks from academic psychologists. In this situation Paul Kline's book is particularly welcome because it breaks away from this traditional pattern. Kline is an academic psychologist with high standards of scholarship, competence in research methodology and fully conversant with Freud's work—in itself a rare combination. Each chapter of his book is devoted to a study of the "objective scientific evidence" relevant to one of the basic postulates in psychoanalytic theory. Kline begins with a concise definition of the postulate, citing chapter and verse from Freud which enhances the book's value as a reference work; he then discusses the general methodological problems of research in that area and presents in schematic detail the empirical work with his own critique of its methodological adequacy. While Kline cites well over 600 references, he acknowledges that this is not comprehensive, and it would be churlish to cite omissions. He finds experimental support for some major Freudian concepts, such as repression, and certain personality constellations even though their aetiology in childhood remains unconfirmed.

Many experimenters have demonstrated remarkable ingenuity in devising

testable hypotheses from psychoanalytic theory and designing situations in which they could be investigated. There is, for example, the well known work of Hall who submitted the manifest dream content of men and women to statistical analysis which lent strong support to the idea of an Oedipal complex and castration anxiety even though he had of course no access to what Freud regarded as essential, namely the latent dream content. This work certainly refutes the notion that dreams are the result of randomly firing nerve cells. The situation is less satisfactory with regard to another central part of the theory—some defence mechanisms. Kline rightly emphasizes that the methodological difficulties here are nearly insurmountable. Take, for example, projection, a concept for which there is a very large amount of clinical evidence and which has such widespread face validity that it has become accepted outside the technical jargon of the theory. Notwithstanding some efforts the experimental evidence for the mechanism is just not good enough. The crux of the difficulty is of course the experimental approach to the concept of the unconscious. The thief who cries "Stop, thief" is projecting as a deliberate purposeful disguise but not in the sense of the Freudian defence mechanism which requires that the motivation for projection be inaccessible to consciousness. One can take it from Kline that this discrimination is beyond the power of current research methods. Whether the unconscious should therefore be eliminated from psychology as a science, much as the one-time useful fiction of phlogiston was dropped, or whether it should, as Foucault seems to suggest, be regarded as the necessary identification of a border-line beyond which science cannot proceed, or whether clinical evidence should finally achieve scientific status within a framework of research which is concerned with meaning rather than mechanisms, is a question that Kline does not raise. In his careful and cautious fashion he lets the matter rest with stating that projection has not been experimentally established.

Where Freudian propositions are experimentally supported, Kline, in an effort at reconciliation with academic psychology, examines relevant predictions from theories of learning and concludes "that in most cases the Freudian phenomena could be fitted into a model derived from theories of learning but that these theories on their own could not have predicted the clinical observations. . . . So, far from regarding learning theory models and psychoanalytic theory as opposed, we consider them to be closely related—the Freudian theory supplying the details of the learning procedures". Much as one would like a

rapprochement, this suggestion may throw out the baby with the bathwater.

Notwithstanding the excellence of Kline's search for evidence, the value of many of his careful and critical comments and the usefulness of his book for reference purposes, one is left with a feeling that some of the major challenges which psychoanalysis presents to academic psychology have been avoided rather than elucidated.

MARIE JAHODA

## Solar System Guide

*The Solar System.* By Z. Kopal. Pp. 152+14 plates. (Oxford University: Oxford, London and New York, January 1973.) £2.25 cloth; £1 paper.

OUR knowledge of the solar system has advanced by leaps and bounds during the last decade. For example, twelve men have walked on the surface of the Moon and spacecraft have photographed in detail the craters, volcanoes, mountains and valleys of Mars. In the next decade many more ambitious projects are planned. Spacecraft will start out on their journeys to Jupiter and Saturn, others will be soft landing on Mars to search the surface for traces of life. By 1975 the Skylab should be set up and man will at last be able to cast off the atmospheric cloak that continuously hampers ground based observations.

All these past achievements have been fully covered by the news media and in consequence a great deal of interest and enthusiasm has been engendered among the nonscientific members of the public. Now in all new fields a guide is needed if we are to get the maximum benefit from our travels. This is exactly what this book sets out to be—a guide to the solar system. In the introduction it states that its aim is to summarize for the nontechnical reader the principal features of our present knowledge of the astronomy, physics and chemistry of the solar system.

It succeeds admirably. Zdeněk Kopal must be congratulated on writing an excellent book, a book which was a joy to read and which takes us on a fascinating tour of our neighbouring planets. It breaks away from the old fashioned approach of treating every planet as a separate entity and instead stresses the important similarities and differences between the members of the solar system. Comparisons are even made between our solar system and the possible planetary companions of nearby stars. It is also up to date, containing details of the latest Apollo, Mariner and Venera results.

I would like to congratulate Professor Kopal on a job well done and to wish his book the great success that it deserves.

DAVID W. HUGHES