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SCIENCE AND TELEPATHY 301

IN his presidential address to Section D (Zoology) of the British Association at Newcastle recently, Prof. A. C. Hardy put forward the tentative suggestion that one factor in moulding patterns of behaviour among the members of a given species might be something akin to what is usually called telepathy, a phenomenon which he considered had now been established and which was clearly a revolutionary discovery from whatever point of view it might be regarded. Although, perhaps, a little apologetic in advancing this idea, Prof. Hardy did not conceal his belief that few could reject the evidence for telepathy were they to examine it with unbiased minds and without undue prejudice.

It is interesting to recall that the same problem was met by Freud when, in 1922, he was driven to suspect that elements suggesting telepathy were beginning to intrude in dream analysis. Some ten years later, when the evidence for this intrusion seemed better authenticated, he pointed out that it was futile to conceal the fact that any consideration of telepathy was rendered particularly hard on account of the intellectual, psychological and historical factors involved. Prejudices, although often useful, could sometimes be harmful and obstructive, and although a good deal of excuse could be found for those who nourished them in the case of occult phenomena, it was possible that, under what Freud rightly termed the veil of fraud and phantasy, there lay a hard core of facts, hitherto mostly unrecognized and, even when suspected as existent, not even dimly understood. The study of such matters has, as he rightly pointed out, become a highly specialized and difficult pursuit which the ordinary scientific man cannot hope to follow while at the same time pursuing his own interests and investigations.

Although inquiries into cases of alleged telepathic phenomena have been going on for many years, the majority of the cases reported have been of the spontaneous variety which, impressive at first sight, have been found to be extremely difficult to appraise at their true evidential value. So early as 1885, the Society for Psychical Research had foreseen the gradual emergence of a statistical technique for dealing with the material on a better experimental basis; and recent years have, as Prof. Hardy indicated, shown a marked improvement in devising fresh tests and controls under the direction of such workers as R. A. Fisher, W. L. Stevens, Whately Carington and S. G. Soal in Great Britain, and J. B. Rhine and his co-workers in the United States.

As might have been expected in so complex and exasperating a subject, progress has been uneven, and some of the published results open to grave doubts. But an enormous amount of patient work has been done; it is noteworthy that many of the earlier criticisms have had to be abandoned, and in some cases those critics who hoped to discover easily detected flaws in the technique have found that their objections had already been foreseen and countered by the investigators. Indeed, another zoologist, Prof. Evelyn Hutchinson of Yale, after examining the

conditions of the well-known Soal-Goldney experiment (*Proc. Soc. Psych. Research*, Dec. 1943), pointed out in the *American Scientist* of April 1948 that one moral to be derived from that piece of research was that many workers in ordinary science lived in glass houses and should not, therefore, throw stones.

As a result of the recent work on telepathy mentioned by Prof. Hardy, public interest in the subject has been re-awakened. This, unfortunately, has led to a wave of popular credulity which has become somewhat disturbing to workers in psychical research, since it has affected persons of education and even scientific standing in their own particular fields. This attitude on the part of the public has been partly due to the highly publicized 'telepathic' performances of two radio entertainers from Australia, who have done for British radio what Dunninger and his co-performers have been doing for some time in the United States. Moreover, the producer of the show was allowed to publish some paragraphs in the *Radio Times* in which he categorically stated that there had not been any 'faking', an individual opinion to which he was clearly entitled, but which some might consider to be gravely misleading to the general public, as the honorary secretary of the Occult Committee of the Magic Circle pointed out with great cogency in a subsequent issue. Amid the acute controversy that followed, the entertainers themselves quite properly left the decision to the judges. They made no claims, and indeed could scarcely have done so with impunity, so stern is the professional disapproval of any performers who invoke a 'supernormal' element in their mystery acts. However, in spite of the repeated assurances of both psychical researchers and magicians regarding the entirely normal and natural means by which these stage and radio 'telepathic' effects are achieved, many have apparently continued to believe that telepathy can be demonstrated to order by certain gifted persons, and used for the purposes of entertainment.

It might have been supposed that the real nature of a mystery show on the Light Programme of the British Broadcasting Corporation could scarcely have been misunderstood; yet it is clear that the popular imagination, stimulated and prepared, perhaps, by the more sensational accounts in the Press of the results of serious inquiries, has not been slow to see in a radio 'turn' an example of telepathy in action. Similarly, certain psycho-analysts and psychiatrists are apt to think that they see examples of it in their consulting rooms, whereas in many cases these incidents would fail to attract even the passing interest of the psychical researcher with real experience of the subject. What is clear at the present time, however, is that a deep distinction should be drawn between the patient and laborious experiments such as those to which Prof. Hardy referred, and the clever and ingenious variety acts, in which the concept of 'telepathy' is used in the advertising 'build-up' in order to add increasing mystery to the entertainment, and to confuse those who have never taken the trouble to make themselves acquainted with the means through which the possibly genuine may be distinguished from the almost certainly spurious.

LOGIC AND SCIENCE 13/6

The Limits of Science

Outline of Logic and of the Methodology of the Exact Sciences. By the late Dr. Leon Chwistek. Translated from the Polish by Helen Charlotte Brodie and Dr. Arthur P. Coleridge. (International Library of Psychology, Philosophy and Scientific Method.) Pp. lvii + 347. London: Kegan Paul and Co., Ltd., 1948.) 30s. net.

IT WAS probably the discovery of non-Euclidean geometry that awakened the desire to abandon intuition as the basis of science and to confine consideration to the manipulation of symbols operating according to certain defined rules. Throughout the nineteenth century steady, though slow and inconspicuous, progress in this endeavour was made; but a sharp acceleration occurred at the beginning of the twentieth century from two independent causes. First, the theory of relativity revealed the dangers lying unsuspected in such intuitions as that of a unique, universal time scale, for example; secondly, the publication of Whitehead and Russell's "Principia Mathematica" showed a vision of a logical machinery by means of which scientific discoveries might be placed on an unassailable axiomatic basis and developed without fear of contradiction. Subsequent developments have not proceeded as smoothly as might have been expected, but nevertheless the prospect opened up has attracted some of the acutest minds of our generation, and the quest has grown from a harmless eccentricity into one of the most active and important movements in modern philosophy.

The late Dr. Chwistek's book is fundamentally an attempt to formulate a set of axioms and rules of manipulation adequate for the needs of science and philosophy. It is evidently the product of a powerful mind, equipped with wide reading and the fruits of many years concentration on logical questions. Those who are engaged in a like endeavour cannot afford to ignore this attempt to solve their problems.

Unfortunately, however, among Dr. Chwistek's gifts that of being intelligible was not included. The connexion between one sentence and the next is sometimes impossible to discover and at others is ultimately found to proceed from a quite minor connotation of the former. Reading the book is like reading a modern introspective novel, with the added annoyance that one really wants to know what Dr. Chwistek is trying to say. This is not the fault of the translators, who—especially Miss Brodie—have made heroic efforts on the reader's behalf. Before Chwistek's "Introduction" she has given an "Introduction" of her own of 37 pages embellished with 101 footnotes and supplemented by an "Appendix" of 31 pages. There is a "Preface" to this "Introduction", preceded by a "Translators' Preface" and an "Author's Preface to English Edition". Further, there is a bibliography of Chwistek's works, an index of symbols and name and author indexes, making altogether 111 pages of elucidation of 292 pages of text. Alas, that such industry should avail so little! The basis of Chwistek's system is the idea of "sound reason", but "unfortunately", says Dr. Brodie, "it is difficult to discover exactly what Chwistek means by sound reason". It has to be supplemented by "logic", but "he uses the term 'logic' in two distinct senses which he himself does not carefully differentiate". And so we proceed. The work itself only