

BOOKS

W. B. Dockrell (Ed.) *On Intelligence: Contemporary Theories and Educational Implications: A Symposium*. Toronto: The Ontario Institute for Studies in Education, 1970, 267 pp.

On Intelligence, edited by W. B. Dockrell, is the result of a symposium held in 1969 at the Ontario Institute for Studies in Education to consider the problems related to the concept of intelligence. Dockrell points out that, though the concept itself has been consistently attacked, more than half of current published studies in education still use IQ as either a control or experimental variable. Even the simplest model of learning must account for the interaction among previous learning, motivation, and measured ability. These factors alone leave little doubt that the concept of intelligence is worth studying, both for its own sake and as it provides clues for further research and planning for instruction.

It is appropriate that the history of the intelligence movement is presented by Cyril Burt. Though somewhat defensive, Burt, who traces his position through Galton to Herbert Spencer, raises the basic issues to which the symposium addressed itself: the use of factor analytic methods to test hypotheses derived from non-statistical models, the motivational as opposed to the general intelligence components of tests, and the nature-nature controversy. He claims overwhelming evidence in support of Galton's contention regarding the importance of genetic factors in the determination of "general, innate ability". The reader will enjoy the friendly but barbed comments made toward opponents such as P. E. Vernon, who appears to have "misunderstood" him in a variety of ways. At the same time, he is optimistic that the concept of intelligence can be given a unified meaning which will make it possible for psychologists to agree that they are talking about ability *per se* and not merely about different interpretations of the term.

In a paper which is not quite so optimistic, and which could well be studied by sociologists, counselling psychologists, and others concerned with the interaction between intelligence and cultural differences, P. E. Vernon reviews current theories of intelligence and the findings of his own cross-cultural studies. He faces squarely the possibility that the current use of tests for decision-making purposes is questionable because such decisions are usually based on scores obtained from I.Q. tests which picture the mind as uni-factorial. While the practitioner must use such results in the absence of more detailed information, he questions their usefulness for the theoretical psychologist. The reader will also find a concise statement about the factor analytic process in the study of intelligence and critical comments about the work of Guilford and Jensen.

P. R. Merrifield, who participated, until 1963, in the Aptitudes Project directed by J. P. Guilford, discusses Guilford's Structure-of-Intellect Model. This first part of the paper is a somewhat rambling defence of Guilford's attempt to classify experiences and explanations. Such a defense may be necessary in view of the criticisms of McNemar, whose statistical allegiance constrained him to describe the Guilford model as "scatter-brained" because it did not adhere to stable, general factors, and Eysenck, who would have preferred to lose precision in favor of parsimony. Unfortunately, Merrifield does not increase our confidence in the model, for, though he demonstrates how the model can be useful in the analysis of test content, nevertheless falls into the trap of assuming that the teacher who is aware of specific deficiencies will be able to correct them. The possibility that the interaction between specific abilities and the myriad of variables confronted in a classroom will confound the work of the practitioner does not seem to have influenced Guilford's followers a great deal.

If the concept of intelligence is still alive, it is equally true that the area of test construction is alive and flourishing. Two papers are devoted to a description of current test construction projects. F. W. Warburton — to whom this volume is dedicated — describes the ambitious project of developing the British Intelligence Scale. This paper is a good example of the complexity involved in a modern psychometric undertaking. The scale itself is being developed via an eclectic approach which uses a Terman-Merrill item format, a Thurstonian factorial model, and a Guilford process-product response format. While testing the usual factors, it also attempts to measure Piagetian levels of development. The questions of complexity and extensivity are thoroughly discussed by the author.

Addressing himself specifically to the task of preparing a "Piagetian" test of Cognitive development, Read D. Tuddenham tries to come to grips with the problem of divorcing statistical models from psychological models in test construction. This is an interesting presentation because it indicates the way in which a differential psychologist works in an area usually occupied by normative psychologists. The nature-nurture issue is suppressed, while the intervention problem takes pre-eminence. Here psychology finds its greatest current challenge. The scope for research is limitless, but the psychologist who wishes to pursue a Piagetian position must face, sooner or later, the question of his ability to quantify and describe concepts which are vague and often, at best, somewhat mentlistic.

Glen T. Evans tries to bring together learning theory and psychometrics by suggesting the construction of intelligence tests through the use of facet theory. His major point is that what teachers need to know is where the pupil is at the moment. For example, if pupils are to be able to solve certain problems, do they have the necessary cognitive

elements and can these be transferred to the new situation? This paper is rather unconvincing, perhaps because it suggests an atomistic approach that most psychologists are not willing to tackle.

The longest paper is presented by Arthur R. Jensen. In addition to presenting his own point of view and suggesting a good many research ideas, Jensen is the only one who attempts to account for differences in empirical data. It is, of course, no surprise to psychologists that when simple monotonic relationships cannot be found between learning criteria and individual differences we turn to aptitude-treatment interactions which then become the basis for intervention. The source of such interactions, the types of mental theories most suited for such study, the matching verbal and neurological hierarchies against which to measure actual learning, and Jensen's own two-level theory of mental abilities are well covered. In fact, one might be tempted to make the criticism that Jensen is covering too much. Nevertheless, the presentation is both logical and suggestive and should be most useful as a synthesis of the nature-nurture issue.

The book concludes with a chapter in which H. J. Butcher summarizes the discussion at the conference. Some issues are clarified, but it seems that generally the speakers did not differ on significant issues. The conference appears to have ended on a note of optimism which suggests that intelligence is still a useful research variable, that it can and must be related to the practical situation, but that, though synthesis may come about as a result of clarifying differences, no single approach can yet explain all the data.

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