Many hopes, anxieties, and perplexities, "dreams and nightmares," as our editors call them, shine through the 100 selected items, and education is seen from many viewpoints — as a means of ensuring national supremacy in trade, as a weapon against crime and drunkenness, as a means of social mobility, as a cure for social tensions, as a God-given right to each individual, and as a means of preserving the heritage of the past. The readings very effectively illustrate the great hope of 19th century liberals that democracy could be an ally of culture and the great fear of conservatives that it would be hostile. Nor was it a simple conflict between liberal and conservative, for many liberals shared the fear, even as they hoped, and conservatives hoped, even as they feared. "The difficulty of democracy," wrote Matthew Arnold, "is how to find and keep high ideals. The individuals who compose it are, the bulk of them, persons who need to follow an ideal, not to set one . . . Our society is likely to become more democratic; who or what will give a high tone to the nation then!" In their introductory comment on the educational disputation and educational progress of the 19th century, our editors suggest that democracy may have, in fact, produced not one, but two, children in the sphere of education, each hostile to the other. The elder child was the principle of equal opportunity; in the early days, the democrat, like the hero of Hardy's novel, *Jude the Obscure*, naturally raised the cry of Job to protest against the aristocratic monopoly of education and wealth: "I have understanding as well as you; I am not inferior to you; yea, who knoweth not such things as these" (Job c. xii, v. 3). Throughout the 19th century and into the 20th, educational reformers, responding to this cry, worked to broaden the scope of educational opportunity, and to create the famous ladder up which more and more youngsters were able to climb according to their ability, but a meritocracy is, of its nature, elitist and the majority will still be losers. Moreover, in the old days when wealth and power depended on the accident of birth alone, a poor man could regard himself as simply unlucky; he did not need to regard himself as a failure. Under the meritocracy, on the other hand, those unable to climb the ladder may well feel their position to be intolerable, especially if the "meritocrat" behaves as selfishly as the autocrats of old and reveals little sense of responsibility for his fellows. Therefore, democracy, as it developed, brought forth its second child, egalitarianism, hostile not only to the elite, but to the standards of excellence by which they justify their pre-eminence. The fratricidal struggle between these two children of democracy has reached its climax only in our own day, but glimpses of it were caught by perceptive observers in the 19th century. Will the anxieties of 19th century conservatives ultimately prove to have been justified? Will democracy prove to be an enemy of culture, with the recognition of ability regarded as a sin, and the cult of the average man accepted as the only permissible orthodoxy? Cain has not slain Abel yet, but he seems to be getting the upper hand, and our editors are cautiously pessimistic about the future. Such speculations will exasperate or infuriate some progressivist readers and make others a little uncomfortable, but, while the editors' opinions may be stimulating, thought-provoking, or outrageous, according to one's viewpoint, they do not obtrude. The extracts are well balanced — as is also the bibliography at the end — and the result is an extremely valuable handbook for students of Education and English History, but how many potential readers can afford to pay $17.60 for a moderate-sized book of readings? Hopefully, a paperback edition will be rapidly forthcoming. Otherwise, one fears, the publishers must reconcile themselves to producing for the College library rather than the private bookshelf.

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Peter E. Bryant. *Perception and Understanding In Young Children: An Experimental Approach.* London: Methuen, 1974. Pp. 195. $10.95

This is a very significant work in child psychology. Its importance stems from the clarity, precision, and internal consistency of the theory it outlines linking perception and cognition in young children. The author develops his theoretical model principally from experimental evidence and the book is a good example of how careful scientific analysis is implemented. The results of research in several fields of child behaviour are subjected to careful scrutiny and evaluation. It is the author's stated intention to demonstrate the value of the experimental method in developing connections between different patterns of behaviour in children. In this, he succeeds admirably, a success which, in no small part, is due to his own impressive ability to

discover inconsistencies of logic and flaws in design, and to see implications and relations between apparently diverse observations and assumptions.

The theory which the author proposes is developed on the basis of experimental evidence relating to children's understanding of relationships and ability to make inferences. Contrary to the positions of both Piaget (e.g., Piaget, 1970) and S-R learning theory (e.g., Kendler & Kendler, 1967), it is proposed that "the child's basic tool for organizing his perceptual experiences and learning from them is deductive inference" (p. 37). The starting point for the theory is the hypothesis (confirmed rather convincingly in the research examined by Bryant) that young children perceive and remember relative aspects of their environment quite easily, but rarely and only with difficulty register absolute values or properties of objects. For example, four-year-old children learn to respond to a "correct" stimulus on the basis of its relative size far more easily than when absolute size is the criterion. The use of relative codes is also shown to extend to a variety of other judgments, such as distance, number, and orientation. Convincing evidence is presented from Bryant's own research and that of others that relative codes are primary for young children, and that they comprehend general terms such as "larger" and "smaller" and recognise such specific relationships as size ratios.

Relative codes are limited, insofar as their adequacy is restricted to the direct comparison of objects presented simultaneously. Since the development of absolute codes does not apparently occur until later childhood and sometimes not at all, Bryant argues that "the young child's perception and memory of individual objects will be heavily influenced by the relations to their surrounding frames of reference" (pp. 15-16). In fact, the child's difficulty in recalling absolute properties forces him to combine separate relative judgments to produce deductive inferences. Such inferences are shown to derive from rules based upon perceptual features of the field or relations between the objects themselves. It is further demonstrated that the child goes on to connect two successive experiences through deductive inference in terms of the external frame of reference. Psychologists have, for the most part, tended to consider framework effects in terms of the errors they induce (as, for example, tests of perceptual field-independence); however, the author points out that, while perceptual cues may be misleading in certain circumstances, they act positively as a mediating link through which successive experiences can be connected. It is commonly argued, for example, that a child's failure in Piagetian invariance tasks indicates an inability to understand the principle of conservation. However, an alternative and probably more logically justifiable interpretation is that the child's performance is a function of conflicting rules which depend upon perceptual features of the environment. The detailed rationale presented by Bryant cannot be examined in the space available here; however, the implications of his thesis for Piagetian theory, which are substantial, can be briefly discussed.

A fundamental premise, supported by experimental evidence (e.g., Bryant & Trabasso, 1971), is that children aged four and younger are capable of making genuine transitive inferences. This, of course, is quite contrary to Piaget's contention that such thought processes do not develop before the concrete operational stage, usually about age seven or eight. Successful performance on Piagetian conservation tasks quite clearly requires a transitive deductive inference; however, Bryant disagrees with Piaget that *failure* necessitates the conclusion that the child is incapable of such inferences and does not understand invariance. He argues persuasively, and with experimental evidence, that design weaknesses with the conservation experiment permit several explanations of the "non-conservation" response. The interpretation suggested by his theory and empirically supported is that the child is confronted with a conflict between rules based on perceptual features of the framework. The transformation of the displays results in the application of a separate rule to each and consequent differing judgments. However, the child has no way of resolving the dilemma. A series of experiments in which misleading cues were eliminated led Bryant to conclude that children as young as three "must be able to understand that the perceptual transformation has not actually altered the (quantity) involved" (p. 138).

These conclusions and the rationale underlying them present basic difficulties for Piagetian theory, although, as Bryant notes, Piaget has recently proposed that the child may have an innate understanding of invariance which is overcome by perceptual factors in the conservation experiment (Piaget, 1968). A possible shortcoming of the book may be its failure to deal with Piagetian developmental stages, egocentrism, and logical thought in middle childhood.

However, the author's purpose is to delineate a new theory rather than dispute an existing one, and a notable feature of his writing is a laudable attempt not to speculate about human behaviour in the absence of empirical evidence.

Speculations are for the reader to make. Perhaps they will concern areas where correlation and observational research have predominated and, hopefully, they may stimulate further experimental study. If Bryant's theory is substantially correct, it remains to be shown when and how children develop absolute codes; questions are raised about individual differences, the role of relative codes in cross-modal transfer tasks, and the contribution of learning and language in children's perceptual and cognitive behaviour. Bryant's model promises to provide a common conceptual framework for research in perception and such related areas as psychological differentiation and cognitive style (e.g., Witkin *et al.*, 1962).

The educational implications of Bryant's theory are only briefly considered in the book. They deserve more attention and are particulary significant in fields such as reading and mathematics, where perceptual cues and relative codes play important roles in determining children's abilities. Educators who have advocated methods based upon Piagetian or behaviourist assumptions may be persuaded to reconsider their approaches in the light of Bryant's theory and research.

The book is not a literature review, but professors may be likely to make it required reading for graduate courses in child development. It is, certainly, the sort of reading that must be highly recommended for psychologists and educators desiring a better understanding of thinking in young children. The theory it presents is a new and impelling one and the author's advocacy of a renewed consideration of experimental methods is refreshing. Certainly, it is made more powerful by the fact that the connections between different types of behaviour which are integral to the theory could only have been established through experiments.

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