## **Book Reviews**

## **Psychological Research on a Profound Issue**

Moral Development. Current Theory and Research. Papers from a symposium, Chicago, Dec. 1973. DAVID J. DEPALMA and JEANNE M. FOLEY, Eds. Erlbaum, Hillsdale, N.J., 1975 (distributor, Halsted [Wiley], New York). viii, 206 pp. \$12.95. Child Psychology.

Several of the contributors to this collection refer somberly to My Lai, Watergate, and other aspects of the Great American Morality Problem. They seem to be hinting that the investigation of their common topic-moral development-will ultimately help us avoid or correct these and other lapses from decent behavior. Perhaps so, ultimately; though probably not in the lifetime of anyone reading this review. To the contrary, this volume reminds us forcefully of the underdevelopment of psychology as a science, of its difficulties when confronting any truly complicated realm of behavior. So the reader will not learn from this book how to prevent a Watergate, or how to raise a virtuous child, or even how to improve his own character; but he may learn quite a bit about the intellectual and empirical habits of social and development psychologists when they grapple with great issues.

We have here the product of a conference held in 1973. Nine active students of the topic are represented by eight papers, and in most cases these reflect current work. There are also an introduction, an afterword, and two commentaries, both surprisingly critical in tone, not the usual easy flattery. Any reader of symposium collections knows how miserable these assemblages often are-second-rate work, vapid discussions, and so on. Hence it is pleasant to report that this is an unusually well-chosen and well-edited group of papers. The range of work now being done is adequately sampled and the contributions themselves are generally competent and beyond.

One thing the book does lack is a critical-historical introduction that would orient a general reader—such as a reader of this journal—to those issues and conflicts which currently agitate the specialists, and why. Most of the contributors have quite naturally assumed some general familiarity with the topic; perhaps, then, some historical comments may be of help. As recently as a decade ago, the systematic study of the moral life was essentially moribund. The somewhat simple-minded empiricism of an earlier day had been found wanting; the powerful Freudian theory resisted translation into terms acceptable to research psychology; and Piaget's classic analysis of the growth of the moral ideas in children seemed very much a monument belonging to the past. The long period of stagnation came to an end in the middle to late 1960's, which saw the beginnings of the current revival. No doubt something was in the air; I suspect it was that the strain of moralism endemic to American life had once again become inflamed, producing a widespread yearning for a psychology of moral goodness.

Two rather different types of research have dominated this revival, and both are well represented in this collection. The papers by Ervin Staub and by James Bryan exemplify the use of the social-psychological experiment, the former involving a linked series of studies on what induces "prosocial" (that is, helpful, altruistic) behavior in children, the latter studies on children's responses to hypocritical behavior. Bryan's elegantly written paper may stand as an example of the strengths and limitations of this approach. The basic design is simple enough-children are exposed to a "model" who either does or does not preach charity to them and who later does or does not practice what he preaches-but there are multiple modifications of this design. Bryan's studies (like Staub's) are a model of both ingenuity and assiduity. Fifteen hundred (1500!) youngsters have been run through a dazzling array of variations, all to an end which is at the same time counterintuitive, intriguing, and disappointing: that children are not much influenced by the model's "hypocrisy," or lack of it. Bryan discusses this curious outcome with a sort of unruffled amiability that one finds winning. Yet the larger questions remain: To what degree can we generalize from the necessary artificialities of the experiment to the murk and tumult of real life? Is the extraordinary cost of such research in time and energy worth the empirical yield?

The second dominant influence, and by far the more important, is the "cognitivedevelopmental" approach, here represented by no fewer than four of the eight contributions. Its founding father is Lawrence Kohlberg, who has extended Piaget's pioneering work. Kohlberg posits an invariant sequence of developmental stages through which the child typically passes; at each succeeding level the child's understanding of moral issues is a function of an increasing cognitive maturity. Kohlberg has developed a six-stage sequence ranging from a primitive "might is right" orientation at the bottom to a "universal respect for life" outlook at the peak of moral attainment.

The appeal of Kohlberg's system is understandable. It holds that there is indeed a "higher morality" and that the potential for achieving it is to be found in the innate though rarely realized capacities of men. Kohlberg's ideas and methods have recruited a group of able students, several of whom contribute to this book. Two of the papers, by Turiel and by Selman and Damon, offer stage theories of the growth of social concepts and of the idea of justice, respectively. Keasey reviews data bearing on the relationship between cognitive growth in general and moral ideas in particular. Rest proposes an easily scored objective test of moral judgment based on Kohlberg's method. Taken as a group, this set of articles will probably be of less general interest than others; some of them seem to represent work in progress rather than completed studies, and they seem to share a somewhat parochial, shoptalk quality.

The absence of a critical introduction is felt most strongly in connection with the Kohlberg school, for the nonspecialist reader will not be able to discern that we are in the midst of some rather fierce controversy about the merits of its approach. The last few years have seen the appearance of several types of objections, some so fundamental as to put the entire approach into question. One set of objections is essentially technical; we hear complaints about the reliability and validity of the measures, about the invariance claimed for the stages, and about whether some central findings are replicable. Another set questions whether a cognitive orientation is adequate for the full understanding of moral action; in this volume we begin to SCIENCE, VOL. 190 see some agreement to the contrary. A third is philosophical; the putative universalism of the Kohlberg system, it is argued, conceals an essentially ethnocentric bias, wherein the pinnacle of moral perfection amounts to little more than upper-middleclass American high-mindedness. However these arguments are ultimately resolved and I suspect the resolution will go against the Kohlberg school—they involve issues so profound that the failure to treat them systematically gives the reader a misleadingly optimistic view of the state of progress in the field.

Experimental social psychology and Piagetian structuralism have between them divided the study of morality during the last decade. Their limitations are now more evident, and one senses that more pluralistic methods and outlooks may soon hold sway. The two essays I found most interesting are by Martin Hoffman and Robert Hogan, and in both cases the authors draw their data and ideas from diverse sources. Hoffman offers a wide-ranging account of the early development of altruism, giving particular attention to the importance of empathy (an emphasis shared by several other contributors). Hogan attempts to place moral development within the larger framework of personality theory. His essay is marked by extraordinary catholicity of reference, not merely from within psychology but from sociology and philosophy as well. The very excellence of these papers reminds us, paradoxically enough, of the essential thinness of secure learning in this field. We see two strong minds struggling toward some synthesis of knowledge, when the findings that would support the effort are often unavailable. Many of the known answers are partial or in doubt, and what is worse, most of the important questions have not yet been asked.

Reading this volume carefully, particularly the detailed and searching commentaries by Jessor and DePalma that conclude the book, one is poignantly aware that all the energy and commotion of the last decade have not yet advanced our knowledge substantially. One is led to wonder why it is that so many psychologists feel themselves entitled to instruct legislators and educators and the world at large about the proper cultivation of "morality." One wants to advise them to return to the works of Reinhold Niebuhr, who understood so well why psychology cannot do the work of morality, and why it is one form of the sin of pride for psychologists to believe otherwise.

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## The Utilization of an Animal

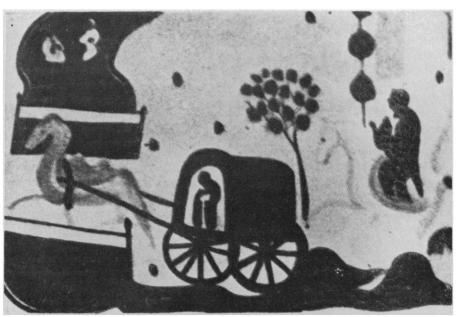
The Camel and the Wheel. RICHARD W. BULLIET. Harvard University Press, Cambridge, Mass., 1975. xvi, 328 pp., illus. \$16.

Richard Bulliet's *The Camel and the Wheel* excites and delights as it untangles the record of that grotesque—at least to the unappreciative Western eye—but important beast. Bulliet uses every historical tool and draws on a variety of other fields, including archeology, technology, anthropology, art, biology, and philology, as he traces the history of the camel from its earliest known origins to the present.

Bulliet writes with a felicitous style and exhibits mastery of his subject and sources, and the questions he poses are provocative. He starts with the central fact that the camel replaced the wheel in the Middle East and North Africa beginning about the 4th century. Was this retrogressive? The chief contributing factors relate to technology, economics, and even public policy; for Roman fiscal law favored the camel in the eastern Mediterranean and the camel, in comparison with wheeled vehicles, carried more for less, faster, and without the expense of roads. These factors contributed to a decline both in maintenance of roads and in harness and wagon manufacture, which compounded the advantages of the camel as a pack animal.

The author next raises the question why the change occurred when it did. To answer it he takes up the subject of the origins and domestication of the camel and concludes with a discussion of the significant technological development of the North Arabian saddle and its military and commercial ramifications. This saddle resulted in a shift of power to the camel breeders par excellence, the Arabs, and their integration with urban society. Along the way Bulliet subjects the whole range of physiological, environmental, and cultural factors in domestication and utilization to analysis: What is the relationship of the one-humped dromedary to the twohumped Bactrian? Where did domestication begin and how did the use of the camel spread? What is the significance of differences in camel husbandry in South Arabia, North Africa, or in Iran, where the one-humped meets the two?

Bulliet places the most probable site of camel domestication in South Arabia and the most probable time a number of centuries earlier than the widely accepted 11th century B.C. appearance of the camel in North Arabia and Syria. His hypotheses are based on evidence derived from early figures, drawings, and impressions, historical literature beginning with Genesis, lin-



Chinese cave painting, showing a two-humped camel harnessed to a covered cart by what appears to be an arch over the neck. "At the present day the use of one-humped camels to pull carts and wagons is quite restricted.... As for the two-humped camel ..., it has traditionally been used on at least a small scale to pull carts or wagons throughout its geographical range from the Crimea to Peking.... This type of utilization goes back to the earliest known period of two-humped camel domestication in the third millenium [sic] B.C.... Were the camels harnessed [then] in the same manner as they are harnessed today, or has the technique of harnessing changed? [This is] a question of major importance [because of] the likelihood that what barred the one-humped camel from entering the transport economy of the ancient world as a draft animal was the state of harnessing technology." [Reproduced in *The Camel and the Wheel* from Needham and Wang, *Science and Civilisation in China*, vol. 4, part 2 (Cambridge University Press, 1965)]