Book Reviews

Interactive Behaviors

Altruism and Aggression. Biological and Social Origins. CAROLYN ZAHN-WAXLER, E. MARK CUMMINGS, and RONALD IANNOTTI, Eds. Cambridge University Press, New York, 1986. xiv, 337 pp., illus. $39.50. Cambridge Studies in Social and Emotional Development. Based on a conference, Bethesda, MD, April 1982.

This book explores connections between altruistic and aggressive behaviors from the perspective of developmental psychology. Research on aggression first flourished among developmental psychologists during the 1950s and 1960s, when psychoanalytic and behavioristic approaches were prevalent. Consequently, both the endogenous, biologically based processes discussed by psychoanalytic theorists and concepts such as modeling and reinforcement are emphasized in much of this research. In contrast, the psychological study of altruism and other prosocial behaviors increased dramatically in the 1970s and was shaped in part by the cognitive-developmental and social-cognitive stage theorists who were influential at that time. Thus, as the editors of this volume state in their introduction, the topics of altruism and aggression "have ridden the crests of different Zeitgeists" (p. 6).

Perhaps this is why the study of aggression and the study of altruism have been relatively separate scientific endeavors, and why the theoretical frameworks for the two domains have differed considerably. However, exciting changes and new syntheses are occurring within both areas of study and are what this volume is about.

Altruism and Aggression is, to my knowledge, one of only two scholarly volumes in which the explicit goal has been to integrate and compare perspectives concerning the development of aggression and prosocial behavior (the other being *The Development of Antisocial and Prosocial Behaviors*, edited by Olweus, Block, and Radke-Yarrow [Academic Press, 1986]). By focusing on both topics, the contributors to this book highlight similarities and differences in the theoretical and methodological approaches to the two domains of study, propose conceptual links and overlaps, and illustrate new approaches emerging in the study of aggression and altruism.

For example, the contributors discuss a variety of ways in which biological factors might influence the development and expression of prosocial as well as aggressive behaviors. Until recently, the role of biology in altruism was virtually ignored by all except sociobiologists. However, sociobiologists have had relatively little impact on developmental or social psychologists' thinking, perhaps because they originally did not focus on individual or cultural differences in altruism. Nonetheless, recent empirical findings from twin studies (for example, Rushton *et al.*, *J. Pers. Soc. Psychol.* **50**, 1192 [1986]) are consistent with the view that biological factors account for a considerable amount of the variance in prosocial behavior, aggression, and empathic responding.

One particularly intriguing, albeit speculative, example of the possible role of psychobiological mechanisms in altruistic as well as aggressive behavior is provided by Panksepp. He suggests that mechanisms underlying helping and aggressive behaviors are related and that both types of behavior could be critically linked to opioid activity in the brain. He cites literature suggesting that brain opioids promote social comfort, bonding, and play and may evoke feelings of trust and peacefulness, whereas opioid withdrawal is associated with distress, irritability, and aggressiveness. The possibility of the resonance of neural circuits between bonded individuals, resulting in helping behavior, also is considered. If Panksepp is correct, his and others' work on opioids has profound implications for understanding both similarities and differences in individuals' social functioning.

Another particularly interesting issue discussed by several contributors (especially Cummings and his colleagues) is the emergence of altruistic and aggressive tendencies in the first years of life. The early manifestation of altruistic behavior observed by researchers in recent years is inconsistent with previous assertions by cognitive-developmental theorists that young children are incapable of understanding others' feelings, and suggests that humans have a biologically based predisposition to attend to and respond to others' emotional states (as well as to aggress). What is especially surprising is that individual differences in style of responding to others' distress (for example, responding with intense emotion, cold avoidance of the distressed other, or combative defense of others) are evident by the age of one to two years and are relatively stable into the early school years. This finding suggests that temperamental factors (perhaps biologically based) mediate a considerable amount of prosocial and aggressive responding in the early years. It is also quite possible that these findings reflect significant and enduring (or continuing) effects of environmental factors on social interaction.

In fact, environmental factors seem to influence prosocial and aggressive responding in important ways. For example, Cummings and his colleagues found a positive correlation between supportive, empathic maternal behavior and one- to two-year-olds' prosocial and reparative behaviors. Moreover, among school-aged children, training in perspective taking and empathic responding promotes altruistic behaviors (Feshbach and Feshbach). It appears that sympathetic responding and socio-cognitive skills may play an important role in the development of prosocial and aggressive behavior (Dodge) and that socialization experiences affect these domains of functioning. Indeed, it is likely that emotional responses such as empathy and sympathetic concern, which reflect cognitive as well as emotional capabilities, can provide a focal point for the integration of biological, socio-cognitive, and social psychological approaches to the investigation of altruism and aggression.

Other topics raised by the editors and contributors include definitional issues (which affect the operationalization of constructs as well as perspectives on basic theoretical issues), the complex relations between altruism and aggression, and the developmental course of altruistic and aggressive behavior. In addition, the contributors delineate deficits in the existing literature and avenues for future work. Although it is clear from their discussions that much remains to be learned about the development of prosocial and aggressive tendencies, the contributors provide the reader with diverse and provocative perspectives and an overview of extant research. Indeed, this volume is likely to be of considerable interest both to researchers working in relevant areas and to scientists and students from other disciplines who wish to acquire an overview of current research on the development of prosocial and antisocial behaviors.

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Chinese Botany

Science and Civilisation in China. Vol. 6, Biology and Biological Technology. Part 1, Botany. JOSEPH NEEDHAM with the collaboration of Lu Gwei-Djen and Huang Hsing-Tsung. Cambridge University Press, New York, 1986. xxxii, 718 pp., illus. $95.

The aim of the stupendous series to which this volume belongs is to document the early and continuous development of scientific discovery in China up to the arrival of the Baconian revolution from the West in the early 19th century; to provide narrative