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HANDBOOK OF INFANT DEVELOPMENT

Edited by

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Series Preface

This series of books is addressed to behavioral scientists interested in the nature of human personality. Its scope should prove pertinent to personality theorists and researchers as well as to clinicians concerned with applying an understanding of personality processes to the amelioration of emotional difficulties in living. To this end, the series provides a scholarly integration of theoretical formulations, empirical data, and practical recommendations.

Six major aspects of studying and learning about human personality can be designated: personality theory, personality structure and dynamics, personality development, personality assessment, personality change, and personality adjustment. In exploring these aspects of personality, the books in the series discuss a number of distinct but related subject areas: the nature and implications of various theories of personality; personality characteristics that account for consistencies and variations in human behavior; the emergence of personality processes in children and adolescents; the use of interviewing and testing procedures to evaluate individual differences in personality; efforts to modify personality styles through psychotherapy, counseling, behavior therapy, and other methods of influence; and patterns of abnormal personality functioning that impair individual competence.

IRVING B. WEINER

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Preface

The idea for the *Handbook of Infant Development,* which was conceived in 1975, developed from a recognized need for a comprehensive volume for teachers, researchers, and scholars that would bring together current developments in the field of infancy. In teaching infancy to graduate students over the years, my colleagues throughout the country and I have found the need for a comprehensive book that would integrate the diverse areas we cover. I have therefore developed a volume that contains both factually oriented reviews of the literature and thoughtful considerations of the major conceptual issues of the moment. The contributors to this volume have managed, through dedication and hard work, to present the most progressive perspectives on the field of infancy as it exists at the present time, and I am very grateful for their efforts.

In the *Handbook,* an attempt has been made to present a compilation of new ideas, conceptualizations, and research in the area of infancy. A broad range of subject matter is included; theoretical, methodological, conceptual, intervention, and clinical issues are considered from multiple points of view. The range, breadth, and depth of the material reflect the enormous growth that has occurred in the field of infancy over the past few years. Yet, it is recognized that in spite of the length of this book and the attempt to be comprehensive and thorough, some areas have been either omitted or not covered thoroughly—a shortcoming difficult to overcome in such a rapidly growing field. As it stands, however, I believe that the *Handbook of Infant Development* will add a great deal of information to the existing literature in the field.

The book is organized into six sections, each of which covers a different aspect of infant development. To provide an introductory perspective, Dr. Jerome Kagan presents an overview of the field of human infancy that sets the stage for the material discussed in the volume. In this chapter, he offers an historical perspective on human infancy as well as a current look at present and future directions.

Part One deals with newborn and early infant behavior. Drs. Claire Kopp and Arthur Parmelee discuss prenatal and perinatal influences which appear to play a crucial role in the behavior of the developing infant. Dr. Yvonne Brackbill in her chapter reviews the effects of obstetrical medication on newborn and infant behavior. Behavioral assessment of the newborn is discussed in an overview chapter by Drs. Patricia Self and Frances Horowitz, and assessment of the infant is discussed by Dr. Raymond Yang. These overview chapters are followed by more specific chapters reviewing work done with two widely used measures for the assessment of newborns. The first, by Drs. T. Barry Brazelton, Heidelise Als, Edward Tronick, and Barry Lester, describes the Brazelton

Neonatal Behavior Assessment Scale, and the second, by Dr. Judith Rosenblith, reviews the Graham-Rosenblith Behavioral Test for Neonates.

Part Two deals with developmental perspectives in infancy. These chapters cover important behavioral developments that take place during the first 2 years of life. The first chapter, by Dr. Dorothy Eichorn, examines physical development and maturation. The second, by Drs. Keith Berg and Kathleen Berg, covers psychophysiological development in infancy and the influence of psychophysiological factors on infant state, sensory function, and attention. The third chapter, by Drs. Arnold Sameroff and Patrick Cavanaugh, covers the vast field of learning in infancy. Drs. Leslie Cohen, Judy DeLoache, and Mark Strauss discuss the complex area of infant visual perception. The fifth chapter, by Dr. Gerald Gratch, handles the development of language and thought in infancy. Finally, Dr. Alan Sroufe covers the many parameters of socioemotional development. To provide a comprehensive and integrative view of many of the complex developmental issues, these chapters include extensive reference bibliographies, which I believe should be very useful to the reader.

Part Three deals with the area of parent-infant and infant-infant relationships. Parent-infant interaction is divided into two chapters. The first, by Dr. Joy Osofsky and Ms. Karen Connors, considers mother-infant interaction, and the second, by Dr. Ross Parke, deals with father-infant interaction. Infant-infant interaction, a very new and exciting perspective on early infant development, is presented in a chapter by Drs. Edward Mueller and Deborah Vandell. Finally, Dr. Gene Sackett discusses some of the complex methodological and data analysis issues in interactional research in his chapter on analysis of behavioral interaction research.

Part Four deals with the general issue of continuity and change and the relationship of early and later behavior. There has been considerable controversy in this area in the past few years; some researchers who have done longitudinal work and have carefully considered these issues feel that investigators may not always conceptualize the right questions. Drs. Michael Lewis and Mark Starr examine the general issue of developmental continuity. Dr. Leila Beckwith presents material on the prediction of emotional and social behavior over time. Dr. Robert McCall discusses the development of intellectual functioning in infancy and the question of predictability of later I.Q. Finally, Dr. Stephen Porges considers developmental and methodological issues that are of concern in designing infancy research dealing with continuity and change.

Part Five, presenting a broad perspective on research, theory, and possible applications of work in the area of infancy, deals with some clinical issues. applications, and interventions. Dr. Anneliese Korner provides a thoughtful overview of conceptual issues that are important for understanding infancy. Drs. John Kennell, Diana Voos, and Marshall Klaus report on their interesting and important research and conceptual thinking on parent-infant bonding. Drs. Albert Solnit and Sally Provence consider vulnerability and risk in early childhood. Drs. Henry Rosett and Louis Sander deal with available data concerning the effects of maternal drinking on newborn behavior. Dr. Dorothy Huntington discusses supportive programs for infants and parents. Finally, Dr. E. Kuno Beller reviews early intervention programs. All the chapters in this section present research, conceptual, and theoretical issues and deal with application and implications for early infant development.

The concluding chapter, by Dr. Leon Yarrow, considers historical perspectives and future directions for the study of infant development. He also discusses some interesting

ideas about the present standing and the future of the field from the perspectives of research, application, and intervention.

The *Handbook of Infant Development* considers crucial issues in the area of infancy today. The various perspectives presented in the book provide a new and different look at the field. I believe that many teachers and researchers will find it an important and useful resource.

JOY D. OSOFSKY

Topeka, Kansas
April 1978

Acknowledgments

When I originally planned this volume, I was teaching at Temple University, and I would like to thank the members of the Department of Psychology for their encouragement and support. Dr. Willis Overton, Chairman of the Developmental Division and both colleague and friend, was particularly helpful and supportive during the early stages of this volume. My colleagues in the Department of Clinical Psychology at The Menninger Foundation have offered continuing support. I particularly want to thank Dr. Sydney Smith, former Director of Clinical Psychology, and Dr. Martin Leichtman, Director of Psychology at the Children's Division of The Menninger Foundation, for their help. My editors at Wiley-Interscience, Mr. Walter Maytham and Mr. Peter Peirce, have worked closely with me to help make the idea of this volume a reality, and I appreciate their efforts. I also appreciate the efforts of the production department, especially Priscilla Taguer, who have helped a great deal during the final stages of preparation of the book.

I want to express sincere thanks to the contributors to this volume. Without their efforts and excellent chapters, the *Handbook* could not have become a reality.

Finally, I want to give special thanks to my family. My husband, Dr. Howard Osofsky, has always been confident that my projects would be successfully completed and has been by my side throughout. Hari, my daughter, has helped me both to see and to understand firsthand the area of infant and child development and to become a more sensitive observer. Finally, my infant son, Justin, born at about the same time as the book went to press, is enabling me to reexperience some of the fascinating discoveries of infancy.

J.D.O.

HANDBOOK OF
INFANT DEVELOPMENT

Contents

CHAPTER 1

Overview: Perspectives on Human Infancy[1]

Jerome Kagan

Each generation of parents holds a set of beliefs regarding the essential nature of the infant, the human qualities valued by the local community, an informal theory which stipulates the experiences and supernatural interventions that can enhance or retard the child's acquisition of those qualities, and a subjective estimate of the likelihood that the child will eventually command the valued characteristics should the family make the necessary investment of emotional and material resources. Prior to the changes in attitudes that followed the second world war, the Japanese parent regarded the infant as untamed and autonomous (Caudill and Weinstein, 1969). Since both child and adult have to be capable of entering into deeply dependent relations with others—the feeling of *amae* (Akita, 1970)—the mother's task is to draw the baby into an intimately dependent relation on her through quiet, conscientious nurturance. By contrast, the modern American mother projects dependence and helplessness on her infant. Since she realizes that relentless autonomy will be required of the adolescent, she promotes independence in her young child. Thus while the distressed Japanese infant is attended with short delay, the American baby is often allowed to cry for a few minutes, presumably to prepare him for more serious future frustrations.

The Rajput mother of northern India assumes a less active attitude than either the Japanese or American. Since the Rajput hold a fatalistic belief in control of the future by supernatural powers, and since the occupational future of the child is relatively certain—the boy will be a farmer and the girl will be a farmer's wife—there is little motivation to intrude into the infant's life. Hence for most of the first 2 years the child is a passive observer of experience (Minturn and Hitchcock, 1963).

Plato's suggestions to Athenian caretakers contain a particularly nice example of the relation between the conception of the ideal and the local theory of development. Since 4th-century Greeks regarded the harmonious coordination of mind and body as a central ideal, Plato advised mothers to keep their infants in motion and to rock them to sleep rhythmically (Jaeger, 1944). The early exposure to rhythmic experience presumably sensitized the infant, making it easier for the adolescent to master difficult motor coordinations. The unstated dynamic hypothesis that seems to lie behind the advice is probably not much different from the one held by American parents. If one asked American parents what practices they should initiate with their infant so that the adolescent would appreciate music, the modal reply would probably be, "Play good music to them." The assumption

[1]The research reported in this paper was supported in part by grants from NICHD, The Carnegie Corporation of New York, The Spencer Foundation, Office of Child Development, and the Foundation for Child Development. The paper was prepared while the author was a Belding Scholar of the Foundation for Child Development.

made by both Plato and the contemporary parent reduces to: In order to promote an affinity and preparedness for a competence in later childhood, expose the infant to some reasonable representation of the relevant experience in the hope that it will prime the infant.

Plato's home-grown theory of the origin of adolescent sulkiness or aggression was also not much different from our own. A baby who was coddled became a sulky adolescent; one that was bullied became misanthropic. Since there is no support for either statement, then or now, the fact that Plato and child advisors 2400 years later make the same assumptions says more about how the adult mind works than it does about the development of a child. It is easy, however, to surmise how adults might come to that conclusion. Parents who respond every time a baby cries tend, on the average, to have more irritable babies, at least temporarily. The contemporary association between adult practice and infant attribute has been noted by many. But that fact is not sufficient to assume that the relation noted in infancy would persist indefinitely. Such a prejudice ignores the fact that with maturity the child becomes aware of the standards of his culture and begins to relinquish habits that his family dislikes. Since sulkiness is not generally admired, the child is capable of relinquishing the habit, as he gives up his earlier dispositions to soil his clothes and spill his cereal. But since the best guess about the future is the present, if there is no other information, Plato's prophecy was reasonable (Jaeger, 1944).

Freedom from fear was the second ideal of the paideia of 4th-century Greece. Since adolescents were to be resistant to apprehension, Plato suggested that the baby be exposed to events that would help him conquer early fears—an ancient example of desensitization theory, which is also held by the Gusii of Kenya (LeVine and LeVine, 1963). But many 19th-century Europeans held the opposite belief. Dr. P. Chavasse, a pediatrician who wrote popular books of advice, warned parents that if adults told the young child frightening stories, he would become timid and "continue so for the remainder of his life" (Chavasse, 1869, p. 169). Chavasse's conviction that fright was physically and psychologically dangerous has a parallel in the contemporary belief of many descendants of Mayan culture living in northwest Guatemala. *Susto*—best translated as fear—can produce serious illness. Indeed, if an adult becomes unexpectedly frightened, it is believed that the heart can tear away from the thoracic cavity, rise to the throat, and choke the afflicted person. Infants are usually restricted during most of their 1st year in order to avoid chance encounter with people or objects that might provoke fear. The wary attitude toward fear held by 19th-century Europeans was a specific instance of a more general concern with any source of excessive excitement in the child. Excessive use of mind could cause an excessive amount of blood to flow to the brain, and produce an inflammation that might lead to insanity or idiocy: "How proud a mother is at having her precocious child; how little is she aware that precocity is frequently an indication of disease" (Chavasse, 1869, p. 361). Since reality is a continuous monitor of parental apprehensions, local health conditions exert a major influence on the hierarchy of parental concerns.

Among the majority of isolated subsistence farming communities in the world, the period of infancy is one in which illness and death are common and supernatural forces—the evil eye, divine powers, polluted caretakers—believed to be the efficient causes of catastrophe. Relative to American parents there is less concern with accelerating mental and motor development, for the major task of infancy is to survive it. Preoccupation with the infant's health was also characteristic of 18th and 19th-century Europe. Most professional advice focused on the health of both mother and wet nurse, especially the quality of their breast milk. The introduction of sterile water, pasteurized milk, vaccinations, and uniformly better medical care muted these worries and replaced them with apprehension

over the child's psychological growth. Modern parents assume that most of the serious problems of infancy are primarily psychological in nature and are mediated by the actions of caretakers. Hence Americans regard a rejecting attitude and failure to play with the infant with the same alarm as 18th-century English pediatricians regarded poor quality of mother's milk or unclean nipples. The facts of everyday life monitor the foci of adult concern—be it physical health, psychological retardation, excessive fearfulness, or intellectual precocity—while the history of the culture influences both the local theory used to explain distress states and the rituals to be initiated in order to prevent and alleviate symptoms and hasten the child's protected movement toward maturity.

A METAPHOR FOR INFANCY: THE DARWINIAN HERITAGE

As adults in each society hold a local theory about the nature of the young child—the Japanese assume he is autonomous, the Rajput that he is pure, the Mayan that he is vulnerable to losing his vital spirit, the American that he is helpless—so too have investigators held presuppositions about the essence of infancy. The suppositions were often influenced by a dominant scientific paradigm which had explicit implications for the human psyche and contained an implicit metaphor for infancy.

A good example from recent history is contained in the essays on the infant that followed the publication of Darwin's theory of evolution. Darwin reclassified the human infant as a member of the category "animal" by positing a continuum in evolution. Since animal behavior was regarded as instinctive, inflexible, and therefore resistant to change, a paradox was created. How was it possible for man to be varied in custom and habit—so flexible and progressive—if he were such a close relative of creatures whose behavior appeared to be excessively stereotyped and rigid. One way to resolve the dilemma was to award a special function to what seemed to be the more prolonged period of infant helplessness in humans as compared with animals. Since most 19th-century scholars assumed that all qualities of living things had a purpose, it was reasonable to ask about the purpose of man's prolonged infancy. John Fiske, among others, argued that infancy was a period of maximal plasticity—the time when adults were to teach children skills and ideas they would carry with them throughout life.

In a lecture at Harvard in 1871, Fiske noted that man's power to control his environment and to enhance progress had to be due to his educability—a potential Fiske believed animals lacked. How then to explain why man was so educable? Following popular rules of inference, Fiske looked for other major differences between man and animal; and of the many candidates he could have selected—language, the opposable thumb, upright stature, an omnivorous diet, sexual behavior throughout the year—he selected the prolongation of infancy. The logic of the argument consisted of two premises and a conclusion. Nature had to have an intended purpose for the initial 3 years of human incompetence and dependence. Since the most likely purpose was to educate the child, it must be the case that the child is maximally malleable to training during that early period. That conclusion was congruent with a deep belief in continuity of character from infancy to later childhood, it served to keep parents self conscious about their actions with their babies, and it was an argument for building good schools. It also provided an experiential explanation for individual differences in adult success—which was attractive to a democratic and egalitarian society (Fiske, 1883).

Many writers would state, with the casualness characteristic of a remark about the