REVIEW OF

Child Development Research

VOLUME ONE

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and
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Editors

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Advisory Committee

Preface

To FACILITATE the effective use of child development theory and research by the practicing professions, Russell Sage Foundation has provided funds to the Society for Research in Child Development for periodic publications that will collate and interpret current research in child development. The present volume is the first in this series. Its major purpose is to disseminate the advances in scientific knowledge about children among practitioners in such areas as pediatrics, social work, clinical psychology, nursery and elementary school education, and child psychiatry. Another purpose is to help the practitioner increase his understanding of the scientific study of child development, so that he can evaluate more readily the implications of the research literature for his own work. It is anticipated that these reviews will be useful to administrators and to faculty members in professional schools, as well as to service personnel engaged in work with children and families. The present and ensuing volumes also should be of value to researchers, students, and faculty members in nonapplied areas.

Personnel and procedures. To help assure that these reviews would report useful material for practitioners and provide the coverage deemed necessary, an Advisory Committee, consisting of persons who are experienced researchers and who also have a definite commitment and involvement in the applied professional areas, was appointed. The members of the Advisory Committee are: Nancy Bayley, Orville G. Brim, Jr., Leon Eisenberg, Robert J. Haggerty, Ronald Lippitt, William E. Martin, Julius B. Richmond, Seymour B. Sarason, Pauline Sears, Irving E. Sigel, and Leon J. Yarrow. This Committee aided the editors through all stages in the preparation of the volume: working out the overall approach; suggesting topics, authors, and editorial consultants; and reading some of the chapter drafts.

To prepare the reviews, authors were selected who are engaged in research on the topic and are thoroughly familiar with the theoretical and research literature—published and unpublished—as well as the more subtle methodological issues, problems, and nuances involved. In most cases the authors also have some familiarity with the problems and interests of the relevant professions but being primarily researchers, their knowledge of such matters is inevitably limited. To compensate for this and help assure the relevance of the reviews to the widest possible range of professions, twelve editorial consultants were appointed who are actively involved in

applied professional work in child areas and who also have some familiarity with the problems of doing research and interpreting it for the practitioner. These consultants were: Aline B. Auerbach, Joseph E. Brewer, Gerald Caplan, Leonard J. Duhl, David Fanshel, Robert J. Havighurst, Alfred J. Kahn, J. Clayton Lafferty, Richard W. Olmsted, Sally Provence, Julius B. Richmond, and Ruth Updegraff. Each of these consultants read two chapters for their intelligibility and potential usefulness. They prepared reports which included suggestions for topic coverage, alternative organization of the paper, implications for practitioners of the research reported, language changes, and any other points that would help maximize the value of the paper for practitioners.

To be certain that each chapter adequately represented the research in the field, the help of twelve additional editorial consultants was enlisted. These consultants, each of whom had done significant research in one of the topic areas, were: Mary D. Ainsworth, Albert Bandura, Arthur J. Brodbeck, Roger V. Burton, Walter Emmerich, John H. Flavell, Daniel G. Freedman, J. W. Getzels, Jerry Hirsch, William Kessen, L. Joseph Stone, and Stephen B. Withey. Each reported on one chapter in his area of competence, making suggestions dealing mainly with the scientific adequacy of the paper, its coverage of the literature, and the appropriateness of conclusions drawn from the research.

Topic coverage and sequence in this volume. The choice of topics was not based on any overall framework but on practitioner-oriented criteria such as significance for a wide range of the professions, and the existence of an adequate body of research to report. The volume, then, is a sampler of significant topics in child development rather than an attempt to cover the entire field. Comprehensive coverage will come from the series of volumes rather than from any single one.

The first ten chapters in the volume deal with social and psychological aspects of child development. These are arranged in a developmental sequence insofar as possible, ranging from the early periods of socialization by adults, peers, and the mass media, to the development of higher mental processes as reflected in productive thought and moral character. Chapters on the genetic and neurophysiological underpinnings of behavior then follow. A minimum of background knowledge is required of the reader except for the chapter on neurophysiological substrates, which will interest mainly the medical practitioner and others having a prior knowledge of the nervous system.

Plans for the second volume. Plans are under way for a second volume which is scheduled to appear within two years. The second volume will include some of the general child development topics not covered here, as

well as more specific topics that have only recently come into their own as subjects for empirical investigation. The chapter topics and authors are tentatively as follows: Effects of Family Structure (John A. Clausen); Psychological Effects of Minority Group Membership (Stuart W. Cook); Trends in Adolescent Behavior (Elizabeth Douvan and Martin Gold); Language Development and Its Social Context (Susan M. Ervin); Advances in Physical Growth (Stanley M. Garn); Social Structure and Social Change in the Classroom (John C. Glidewell); Factors in Preparing and Placing Children in Occupations (John I. Kitsuse); Delinquency: Causes and Efforts at Prevention (Lloyd E. Ohlin); Development of Intergroup Attitudes (Harold M. Proshansky); Psychosomatic Medicine (Julius B. Richmond and Earle L. Lipton); Learning Processes in Mentally Retarded Children (Edward F. Zigler); Testing of Children (Murray Levine and Seymour Sarason).

Acknowledgments. We wish to express our appreciation to the authors, members of the Advisory Committee, and the editorial consultants. The authors were assigned a very difficult task: that of integrating and interpreting the research, organizing it along lines of interest to the practitioner, and communicating it in nontechnical language. An extraordinary amount of effort and thought went into the preparation of their original manuscripts. Yet they were fully cooperative when revisions were requested—and these were usually substantial because of the special purposes of the volume.

The members of the Advisory Committee provided invaluable support and assistance. Meetings with the Committee were stimulating and arduous sessions, and between meetings there was a steady flow of communications between us and the individual members.

The editorial consultants examined the manuscripts with considerable care and their criticisms and suggestions were specific and detailed. As a result, their reports were very helpful to us in formulating guidelines to the authors for revision.

We also wish to thank Margaret R. Dunne, editor for Russell Sage Foundation, Earl K. Brigham, and Joan W. Barth for the editorial aid they provided. Jeanne Taylor, Elsie Kramer, Margaret Julian, Karen Baker, and Athalia Gentry assisted with typing, proofreading, and other clerical work.

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Introduction

PRACTITIONERS in the several professions that provide services to children have a constant need for knowledge in a wide variety of areas. Yet those whose time is fully taken up in such services find it almost impossible to keep up with the large volume of theory and research in child development coming from the various disciplines. The major purpose of this volume is to bring together the relevant research data from the many sources in a form that will be useful to the professional persons who work with children.

In preparing the volume, an attempt has been made to overcome some of the more flagrant hindrances to effective communication and utilization of research findings. The research literature too often gives the appearance of a confusing array of discrete studies which do not add up to anything useful. Individual research reports tend to be delimited by the few variables that can be accommodated within the design, by special characteristics of the sample, and by other factors that prevent a fully adequate portrayal of the complexities of the phenomenon under investigation. Often the problem is further compounded by the use of concepts which, though similar, are enough different to make each study appear to stand alone.

A more basic problem for the practitioner is that most research topics are determined largely by the concerns of a particular scientific discipline. Rather than being addressed to a solution of practical problems, they follow the logic of the guiding theories and the dictates of the research designs. From the standpoint of long-range progress this is as it should be. The researcher should be free to pursue the data wherever they may lead, unhampered by premature pressures toward practical application. But the theoretical and conceptual focus of such research can obscure the relevance for practice even when it exists, because of the difference between the concepts and terminology of the researcher and the practitioner. The practitioner may at times have difficulty even finding the studies that pertain to his work, because they are titled and indexed in ways that give little or no hint of their relevance.

To be useful, the research must be pulled together and interpreted. This volume therefore tries to provide integrative reports of the pertinent studies and advances in a particular area. Most of the chapters include a brief historical overview, to provide the reader with both a sense of continuity and the background for a fuller understanding of current and future

research. For similar reasons, methodological issues that may impose limitations on the interpretation of the research findings are discussed. The chapters are not complete reviews or abstracts, however; rather, they are selective and interpretive in nature. The attempt is made to evaluate the significant research, and to point up the convergent and divergent findings which emerge from different research designs and populations.

Applied implications are pointed out for those studies which have obvious utility, but such studies are in the minority. The primary task of the editors and chapter authors has been to organize the relevant research around topics that articulate more with practitioner interests than with the more abstract theoretical or methodological issues which most concerned the investigators who originally reported the studies. In some cases this has called for emphasis upon questions and issues directly relevant to practice. But in most cases the data have been organized around more genotypic concepts that might suggest new ways of thinking about the problem. It is felt that this approach—in contrast to a more direct attempt to answer the practitioner's questions—preserves the integrity of the research, while using to best effect the competence of the authors, which is primarily in research. At the same time it should give perspective to the practitioner's own clinical insights, facilitating his translation of the research to the specific purposes of a particular case.

The aim of the volume will be fulfilled if the reports are found to be maximally useful to the practitioner without straying too far from the actual research findings. Herein lies a dilemma which plagues researcher and practitioner alike. Scientists are often very reluctant to stretch interpretations of their data to make practical applications. Professionals working in applied areas, on the other hand, are in great need of facts that can reduce the guesswork in their decisions. The research workers hesitate to draw action conclusions because the data from any single study, and even groups of studies, are probabilistic and limited by the particulars of the research design. These limitations in method are compounded by the lack of knowledge about the details of the particular case and the fact that any real-life behavior or event exists only in a complex context. Consequently, in every chapter of this volume—whether the variable is a gene, an aspect of parent behavior, or a social event—the point is made that the effects take place only in interaction with any number of other variables.

For example, in the chapter on parental discipline, Wesley Becker tells of several studies showing that punitive discipline by parents produces aggressive children. But he must then modify his conclusions by pointing out that boys and girls may respond differently; that the punitiveness of both parents has to be considered; that the child's aggressiveness is not

expressed in all situations; and that there is some evidence that punitiveness in the early years may lead to the *inhibition* of aggression when the child is older. In addition, he points out that the association between parental punitiveness and child aggression may not be directly causal. That is, punitive parents are often hostile or less warm, and perhaps these are the crucial variables. Furthermore, the child's aggression could result from the frustration experience, from modeling an aggressive parent, or possibly because punitive parents actively encourage aggression in their children.

The present volume, then, is not a cookbook for the practitioner. It is an attempt to communicate the results of research in child development with a minimum of technical language, while paying due regard to the limitations of existing research procedures and without stripping the findings of their necessary qualifications. This does not mean that the authors avoid generalizing from the research. On the contrary, generalizations from data, principles, suggestive theoretical notions about underlying processes, and expositions of major theoretical positions make up a very important part of this volume. But these are not prematurely forced into prescriptions for administrative or clinical decisions in child care.

There are some studies, of course, that readily lend themselves to specific suggestions for practice. Examples are the following: (a) studies which show the effectiveness of diagnostic, therapeutic, educational, or child care procedures, and how the effectiveness varies with different kinds of children; (b) studies which add to the practitioner's repertoire of techniques and methods; (c) studies which provide leads to new kinds of data that should be obtained by the practitioner before selecting a course of action; and (d) studies which point up those aspects of the child that are relatively given and unchangeable, and those that are most subject to modification.

Studies having such obvious utility are included in the reviews wherever possible. Much of the research on early separation of children from parents, for example, has grown out of the interest of social workers, pediatricians, and child psychiatrists who were directly concerned with action implications. The chapter by Leon Yarrow on the effects of separation can therefore deal with such very practical issues as defining the dangers of early separation, specifying the ages of the children for whom separation is most perilous, and delineating more precisely the conditions relevant to these adverse effects. Furthermore, Yarrow reports studies which have actually evaluated the effectiveness of various procedures designed to ameliorate these effects. Similarly, part of the research on productive thinking has been stimulated by the concerns of educators. James Gallagher in his chapter on this topic is thus able to report research on techniques for stimulating productive thinking in children. Gallagher also suggests clues

for the recognition of productive thinking abilities, and points out aspects of the child's social and educational setting that could inhibit the development of these abilities.

In the main, however, the reviews are seen as being useful in less direct ways. For example, they may make more explicit some of the assumptions that guide professional practice and report the data bearing on their validity, thus enabling the practitioner to examine them more objectively. In some cases the findings reported may buttress the assumptions. Examples are those findings which indicate that the child who spends an excessive amount of time watching television may have emotional problems; that the absence of the parent of the same sex may have harmful effects on the child's ability to adopt his expected adult role; that learning is promoted by teaching techniques which build upon the child's existing needs and interests.

Findings that run counter to prevailing views are perhaps more valuable to the practitioner, even though they tend to diminish certainty rather than increase it. An example is the often accepted belief that maternal employment has negative effects on the child—a belief not supported by current research. The research suggests that other factors must be taken into account before one can determine the effects of maternal employment, such as the mother's attitude toward employment and the age of the child. Two other examples might be mentioned. Jerome Kagan presents evidence that, despite the changing norms for male and female behavior in our society, young children still have traditional views about what is appropriate sex-role behavior. Bettye Caldwell presents evidence that contradicts the presumed advantages of late weaning; that is, prolonged sucking makes weaning more difficult rather than less, and increases the likelihood of nonnutritive sucking. Practitioners may also find it useful to know that certain assumptions and beliefs have not yet been subject to empirical test or that the data are inconclusive—as is the case of breast-feeding versus bottle-feeding.

Identifying group differences is another important contribution of research. The idea of being "culture-bound" or "class-bound" is not new. Educated persons have for some time been aware that attitudes, behavior standards, and behavior are different for different cultures and for different subgroups within a complex culture like our own. Yet the practitioner's perspective may be limited and some of his decisions influenced by subtle biases, because the children with whom he deals represent a narrow range of the population. Studies using diverse populations can help to broaden this perspective. As an illustration, consider a group worker accustomed to planning activity programs for middle-class girls whose new assignment

includes work with lower-income groups. A knowledge of the more traditional feminine interests of lower-class girls, as reported by Jerome Kagan, might prove to be very useful in working with the new groups.

A more recent variation on this same theme is the discovery that *relationships* that hold for one group may be quite different for another. For example, researchers who have analyzed their data for boys and girls separately have discovered that the same experience may have a very different effect on the two sexes. Wesley Becker reports a study which shows that leadership in boys is facilitated by having parents who are indulgent and warm and who also use principled discipline; yet these same factors were found to discourage leadership and foster dependency in girls. Eleanor Maccoby reports a study on the effects of television in Japan, in which boys showed intellectual decrements and girls showed intellectual increments.

The chapters in this volume indicate other kinds of qualifications which determine whether certain events or situations will be significant. For example, the chapter on mass media indicates that the effects of television depend on the individual child's temperament, his intelligence, needs, beliefs and values, and the opportunities that occur in real life to put into practice what he has learned from the programs he watches.

In recent years, investigators have tended to reexamine broad concepts in order to provide increased specification of the aspects of the general event that produce a particular effect. An outstanding example of this will be found in the chapter by Leon Yarrow, in which the broad concept of "separation from parents" is analyzed into subtypes and then examined further to determine with increased precision just which are the "dangerous" aspects of separation experiences. Through such specification and identification of the process by which a given effect takes place, effective clinical and social action can be facilitated.

Conceptualization in general may be one of the major values of these reviews to the practitioner. In many of the chapters, the author's organization of the materials, or the category systems and theoretical concepts reported, should facilitate the development of schemes and points of reference for organizing and conceptualizing the practitioner's experience. In turn, such schemes should help to make the research findings more meaningful to the practitioner, heightening his awareness to certain important variables in his work that might otherwise be missed. For example, in discussing the influence processes in the child's peer group, John Campbell points out that some of the effects stem from situational factors and he organizes the relevant data around five of these factors: the physical setting, the activity, the clarity of the task, the reward structure, and the

social structure. Apart from the actual research reported, organizing the findings so as to highlight the role of these variables can aid a group worker in the systematic analysis of some of the problems he may face. As another example, Joan Swift discusses several category systems for describing the behavior of nursery school teachers. These should help a teacher in assessing and improving her techniques, as well as making her more fully conscious of certain important aspects of her behavior.

In some instances these reviews can contribute by helping reduce the complexities of a class of events or stimuli to a smaller number of concepts. An example is the chapter on discipline which points out how the many aspects of parent practices might be reduced empirically to three bi-polar dimensions. These dimensions could then serve as orienting guidelines to many significant aspects of parent behavior, with due precautions against prematurely ignoring other pertinent factors.

Child development research has traditionally contributed normative standards and frames of reference that can help sensitize the practitioner to the range and variety of child behaviors at different age levels and in different settings. These standards also provide objective baselines for evaluating the child's performance as well as anticipating his potentialities. For example, understanding the child's cognitive potential should be useful in judging school readiness and in planning school curricula. As pointed out by Irving Sigel in the chapter on concept attainment, it might also help in judging the level on which to communicate to the child. Thus an adult might take a more appropriate approach to discipline if informed about the ages at which the child has the time perspective that permits him to defer gratification, the ability to generalize parental teachings beyond the immediate situation, and the ability to distinguish between being punished for his actions and being personally rejected by the parent.

It is true that individual studies often may not be safely used as a basis for drawing conclusions for practice. Yet they may, rather dramatically at times, suggest some new direction for the practitioner's consideration. When such is the case, they are frequently experimental studies. This volume presents several illustrations. Some of them are the findings that children tend to be more aggressive in the presence of permissive adults than when alone; that children tend to imitate the behavior of adults with whom they have a warm relationship, but will imitate aggressive behavior regardless of the relationship; that children can solve problems based on advanced mathematical concepts long before they can organize and articulate them as principles; that when the preschooler who leads his group joins another group, the "traditions" of that group are imposed on him and he may no longer function as leader.

Perhaps the most significant contribution this volume can make is to give the practitioner an opportunity to get a broad view of up-to-date material in many different areas. Though no one can hope to keep up with all of the relevant research, some familiarity with even the less germane areas has its value for good professional practice. Anyone concerned with improving the child's performance by some form of environmental manipulation, for example, should benefit from the chapter by Gerald McClearn, in which he pulls together the basic principles of behavior genetics and some of the recent advances in that field. Pediatricians, who are so often expected to be social workers and psychotherapists as well as physicians, should find much that is useful in the reviews on such topics as early separation, infant practices, and parental discipline.

In sum, this volume presents interpretive and selective reviews of child development research, oriented toward the interests of professionals working in the applied areas. In some places practical implications are discussed or studies are taken up which have obvious utility. More often the chapters will serve less direct functions, such as the assessment of the validity of certain operating assumptions, identification of group differences, and indication of the conditions mediating certain observed effects. The specification of global concepts like parental separation, maternal employment, television watching, and intelligence, and the pinpointing of the process by means of which a given effect is brought about, are extremely important contributions being made by some of the studies reported in these chapters. Often a social condition known to have negative effects cannot and should not be totally abolished; but knowing which particular aspects of the condition are most culpable, and how they operate to produce the effects, can facilitate taking more realistic and effective clinical and social action. In addition, these reviews provide the reader with conceptual schemes for organizing his own professional experiences—perhaps catching new views of familiar situations.

There are very likely other ways in which the interested practitioner who wishes to integrate research data within the framework provided by a fund of day-to-day practical experience, can benefit from a reading of this volume. Where precise answers are not available, reviews such as these can still reduce some of the guesswork in making professional judgments by providing frameworks within which to seek facts and examine problems.

The Effects of Infant Care[1]

BETTYE M. CALDWELL

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IN THE RESEARCH LITERATURE of the past decade, infant care practices have had a difficult time. Buffeted by contradictory or inconclusive empirical findings and assailed by accusations of inadequate theoretical heritage, they have frequently been denounced as inadequate experiential foundations for socialization theory. But in spite of their travail in the research literature, they have retained their popularity in the clinical and lay literature and in the preoccupations of conscientious parents.

Throughout antiquity there has been considerable interest in the effects of patterns of infant care, but the topic received its greatest modern impetus from early psychoanalytic theory. Additional contemporary support has come from cultural anthropology and social learning theory. In the absence of these formal scientific antecedents, however, interest in infant practices would probably have remained at a high level, since many of the hypotheses about the effects of parent behavior on the infant have an appealing face validity. That is, viewed adultomorphically, the infant snuggled up against his mother for repeated breast-feeding *ought* to feel more secure and content than the one abandoned to his own sucking struggle with an indifferent bottle; the baby fed or picked up whenever he cries *ought* to develop feelings of power and confidence that he has some influence over his environment. Thus the prevailing interpretations of the meaning of such experiences to the infant, coming as they do from adult frames of reference, produce little cognitive dissonance and gain ready acceptance.

Within the child care professions there seems to be more ambivalence toward, than either acceptance or rejection of assumptions about, the consequences of infant training patterns. For example, in formulating conclusions from a study concerned with the effects of different patterns of infant care, Sewell (1952, p. 159) stated: "Such practices as breast feeding, gradual weaning, demand schedule, and easy and late induction to bowel and bladder training, which have been so much emphasized in the psycho-

[1] The author wishes to acknowledge the contributions of colleagues and students whose comments and reactions helped structure the final form of this chapter. Particular appreciation is expressed to Dr. Julius B. Richmond and to Dr. Lois W. Hoffman.

analytic literature, were almost barren in terms of relation to personality adjustment as measured in this study." That forceful declaration, however, was quickly followed by a scientific apology for inadequacies of methodology (minimal controls, questionably accurate data on training practices, imperfect personality measures) and a formal expression of doubt: "However, it should not be concluded that these results unequivocally refute the claim that infancy is an important period in the development of the individual's personality, or even that the particular training practices studied have a bearing on personality formation and adjustments."

A similar expression of ambivalence is found in the comprehensive review by Orlansky (1949). After a thorough survey and cogent analysis of the empirical studies and the clinical and anthropological literature, he concluded that one would have to reject the hypothesis that specific infant disciplines have an invariant psychological effect upon the child. But in his final paragraph he drops the role of critic and proposes, "There is a good deal of evidence that subtle behavioral cues to maternal emotion are detected by the child in later months of life, and that these cues may be more important in governing its character development than are the gross patterns of discipline which an observer may quickly note" (p. 42). That "good deal of evidence" is buttressed with not a single one of the 149 references listed in his review but stands supported by a lone footnote referring to a clinical paper. Thus occasionally those whose own research or whose surveys of research done by others might seem to warrant closing the door on this topic have carefully left it slightly ajar.

HISTORICAL TRENDS

Almost throughout recorded history much attention has been given to patterns of infant care, especially those concerned with feeding. Current practices lead one to think of some type of cow's milk offered in a nippled bottle as the only alternative to maternal breast milk for the young infant. Yet over the centuries many ingenious nutritional and mechanical improvisations appeared before scientific developments in food chemistry, sterilization, and rubber and plastics provided us with the modern "formula" and the bottle and nipple. Until fairly recently the most common type of substitute feeding was provided by a lactating female who contracted to nurse one or more infants other than her own.

Selection of the wet nurse was apparently attended with all the solemnity currently attending the choice of the baby's pediatrician. Leading medical figures had many prescriptions associated with the choice. Consider, for instance, this priceless formula offered in 1545 by Thomas Phaer in *The Boke of Children:*