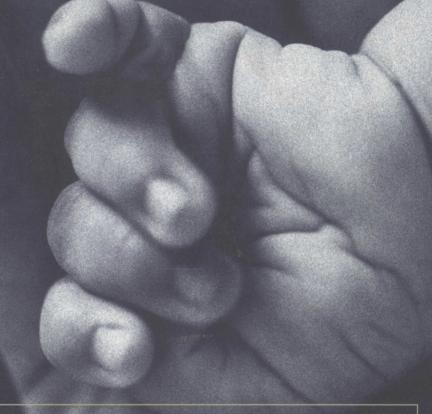
Theories of Developmental Psychology

FOURTH EDITION



Patricia H. Miller

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University of Florida

WORTH PUBLISHERS

Theories of Developmental Psychology, Fourth Edition

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Sponsoring Editor: Marjorie Byers Senior Marketing Manager: Renee Altier Associate Managing Editor: Tracey Kuehn Production Manager: Sarah Segal

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Cover and Chapter Opener Photo: Jen Fong/Photonica

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Progressive Information Technologies

Composition: Progressive Information Technologies Printing and Binding: R. R. Donnelley and Sons

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Library of Congress Cataloging in Publication Data Available Upon Request Second printing, 2002

Worth Publishers

41 Madison Avenue New York, NY 10010 www.worthpublishers.com

Theories of Developmental Psychology

Preface

"What is your theory of psychological development?" As an undergraduate I faced that very essay question on my final exam in an introductory child psychology class. Drawing on all the theories I had ever heard of, I modestly generated a 6 (age) \times 20 (developmental tasks) matrix that covered all of development. My interest in theories was launched. Perhaps if I had been given a multiple-choice test this book would address a different topic.

In all four editions of this book I have tried to show the "big picture" of psychological development. Sometimes students are frustrated by fact-laden textbooks that do not provide frameworks in which to fit the facts. It is often not clear, for example, why a Swiss philosopher would be interested in children's numerical judgments after a row of objects is spread out or why it is noteworthy that infants cry when their mothers leave the room. This book provides frameworks for understanding and perceiving the significance of the research findings in developmental psychology.

Theories of Developmental Psychology can be used as a primary or supplementary text in undergraduate or graduate courses or as a resource book for instructors. In addition, it can provide perspectives on children's behavior for those who interact with children in any capacity. I hope that both developmental psychologists and readers from other

disciplines will find something of interest in these pages.

I have used a parallel structure in the various chapters in order to help the reader compare the theories. To provide continuity, four central issues of development are addressed in each chapter. In addition, I have tried to convey what is exciting about each of the theories. The theories included are those that in my view are of most interest to developmental psychologists and professionals in related disciplines. Many important theories were necessarily excluded because of length restrictions. And some of the "theories" included are not formal theories, but they function as theories by identifying what to study, what questions to ask, and how to answer these questions.

The fourth edition updates the third. I have tried to show how each theory has changed in its emphasis, its data base, and its influence on developmental psychology since the last edition. In particular, I have

expanded the sections on contemporary research in each theory. I added a number of new perspectives that recently have become influential in developmental psychology, such as connectionism, evolutionary psychology, Siegler's overlapping waves model, dynamic systems, the theory theory, modularity nativism, developmental neuroscience, and developing-person-in-context. Some of these are described in a new chapter labeled "Contemporary Minitheories and Emerging Approaches." In order to ground the theories in real-life settings, I added a section on applications to each chapter. Finally, the recent publication of a book by Eleanor Gibson and Anne Pick facilitated a substantial updating of the chapter on Gibson's theory, and I thank them for making a prepublication copy available to me.

I am grateful to a number of people who read and offered comments for one or more editions: Patricia Ashton, Fran Blumberg, William Charlesworth, Michael Cole, Jeffrey Farrar, David Forbes, Bridget Franks, Eleanor Gibson, Harry Grater, Richard Griggs, Gardner Lindzey, Richard Luftig, Thomas Mandeville, John McClure, Jack Meacham, Scott Miller, Stuart Miller, Joy Osofsky, Anne Pick, Sue Rosser, Robert Siegler, Debra Valencia-Laver, Robert Watson, and Rob Weisskirch. A number of undergraduate and graduate students made helpful suggestions as well. I am also grateful to John Flavell, who guided my meanderings into theories when I was a graduate student and has continued to be a source of inspiration. Finally, I want to thank Marjorie Byers at Worth Publishers, who expertly guided the fourth edition.

Patricia H. Miller

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Introduction

Never trust an experimental result until it has been confirmed by theory.

— SIR ARTHUR EDDINGTON

Give us theories, theories, always theories.

— JAMES MARK BALDWIN

e have theories of development because observers of human behavior have been intrigued by what they saw children and adults do. A 3-year-old predicts that a crayon box holds crayons; then, after it is opened to reveal candles, he asserts that he always believed that it held candles. A 5-year-old claims that spreading out a row of buttons increases the number of buttons. A school-age child uses a good strategy to successfully solve an addition problem but shortly later she uses a less reliable strategy on the same problem. An adolescent selects an identity without seriously exploring other possible identities. An adult reports a dream that seems to be a thinly disguised attempt to deal with childhood anxieties.

Developmental theorists try to make sense out of observations such as these and, by doing so, construct a story of the human journey from infancy through childhood or adulthood. Some of the theories we will explore are grand, encompassing theories, often associated with a particular person, for example, Piaget's, Freud's, Erikson's, and Vygotsky's theories. Other theories actually are families of approaches under a general "theory" or framework, such as social learning theory, information processing, dynamic systems, and ethology and other evolutionary theories, and are not necessarily identified with a single person. Still other theories might be called "minitheories," for they limit themselves to a particular territory within development. An example is the "theory theory," which examines children's concepts about a domain, for example, the mind.

Some developmental theories are actually theories from areas outside of development that have been applied to developmental psychology, such as evolutionary theory, information processing, dynamic systems theory, and cultural psychology. Typically, a few key developmentalists see the potential of the theory for posing new questions about development or providing a new explanation of development and then translate the theory into a developmental framework. Thus, theory building in developmental psychology is a very rich, dynamic, and exciting enterprise that has come from many directions. The theories' stories are varied, but all give us insights into human behavior and change the way we look at the world.

This book attempts to convey not only the content of the theories but also the excitement and passion that developmentalists have felt as they constructed their theories or adopted those of others. In some cases certain observations, such as those described above, have captured the imagination of researchers and created a sense of excitement and progress in the field. They saw these intriguing behaviors as mysteries to be solved. In other cases certain ideas have expanded our vision of the nature of development. For example, Piaget's idea that the mental operations of adults have their origins in the sensory-motor behaviors of infancy opened up a whole host of new ways to think about cognitive development. Each theory tells us something important about the fundamental nature of human development.

To understand the contribution of these developmental theories, we must first look at the general nature of theories. In this Introduction, we ask the following questions about theories:

- 1. What is a theory?
- 2. What is a developmental theory?
- 3. Of what value is a developmental theory?
- 4. What main issues of developmental psychology do theories address?

WHAT IS A THEORY?

This is a deceptively simple question. In fact, a philosopher of science might "answer" our question by asking two more:

- 1. Are we asking what theories should be or what they typically are?
- 2. Are we asking about theories as they are stated formally or as they actually operate in a scientific community?

The philosopher's first question concerns the distinction between ideal and real theories and expresses the sad fact of scientific life that our theories fall short of their goal. Theories usually do not reach a complete, formal state. An ideal, complete, formal scientific theory is a set of interconnected statements—definitions, axioms, postulates, hypothetical constructs, intervening variables, laws, hypotheses, and so on. Some of these statements, which are usually expressed in verbal or mathematical form, are deduced logically from certain other statements. The function of this set of interconnected statements is to describe unobservable structures, mechanisms, or processes and to relate them to each other and to observable events. Perhaps the best way to contrast these types of statements is to show that they occupy different levels within a theory. That is, they vary in their distance from observable behavior. The "farther" a statement is from observable behavior, the less likely it is to be supported or refuted by empirical data.

At a point farthest from observable behavior are certain assumptions (axioms, postulates) that are accepted without being tested. (For example, in Piaget's theory, an assumption is that thinking is organized.) These assumptions may be so self-evident to the theorists that they are not even aware of them. As we move to a less general level, we find hypothetical constructs—concepts that posit relations among events, objects, properties, or variables. These constructs (such as "mental scheme" and "mental reversibility" in Piaget's theory) are unobservable themselves but refer to behavior that can be observed. Theorists translate hypothetical constructs into testable hypotheses, which are tentative statements about the relations among events, objects, properties, or variables. (One Piagetian hypothesis is that the infant tends to repeat interesting actions, such as shaking a rattle.) A hypothesis becomes a fact when it is sufficiently supported by research. As facts accumulate, they are tied together by a law: a relatively well established general statement concerning the relationship among a set of facts.

We build theories by going back and forth between data (repeatable empirical observations) and theory. New facts change the theory, and changes in the theory generate new experiments and thus new facts. The new facts again change the theory, and so the cyclical process continues. Empirical observations can provide strong support for a theory but can never completely prove that a theory is true because future observations could provide disconfirming evidence. In some theories, the theory does little more than summarize the facts (data). Particularly in Skinnerian learning theory, one finds statements such as "If a response is followed by a reinforcer for several trials, the frequency of that response increases." Such theories that stay close to the data are easier to test because they are easier to disconfirm. At the other extreme, Freud's "unconscious" or Piaget's "equilibration" process bears at best an uncertain and distant relationship to observable behavior. Because a large distance between theoretical notions and data makes it more difficult to test the theory, several such theories may be equally good at explaining the same set of data and thus may be retained for years, regardless of their accuracy.

Traditionally, psychologists have judged theories by certain criteria. A theory should be logically sound, that is, internally consistent, with no statements that contradict each other. A theory should also be empirically sound, that is, not contradicted by scientific observations. Furthermore, it should be clear, testable, and parsimonious, relying on as few constructs, propositions, and the like as possible. Finally, a theory