Blackwell Handbook of Infant Development

Edited by

Gavin Bremner and Alan Fogel
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Over the last few decades, the field of infancy research has grown exponentially, and as we enter the new millennium we have more information on infant abilities – perceptual, cognitive, and social – than would have been dreamed of 30 or 40 years ago. There is good reason for this growth. For developmental psychologists, there exist vital questions regarding the origins and early manifestation of human abilities that can only be answered by investigating the abilities of infants, sometimes very young infants at that. In addition to questions about the perceptual, cognitive, and social capacities of the newborn, important questions exist regarding the processes underlying the exciting developments in motor skill, memory capacity, and perceptual, emotional, social, and cognitive ability that we see in infancy. The beginnings of communication and language are also detected in infancy. All these developments are of interest in their own right, but are also significant for what they may tell us about the origins and nature of later ability. Additionally, from an applied standpoint, there is growing emphasis on early detection of developmental problems and interventions that may alleviate or even prevent their emergence. These questions and concerns are not new, but their solutions require adequate techniques for studying infant ability.

One thing that makes the field of infancy so exciting today is the fact that investigative techniques are becoming so sophisticated that it sometimes appears that there is now no limit to the questions that can be answered about infant ability, even newborn ability. Additionally, particularly as ultrasound scanning techniques have developed, impressive evidence has been obtained indicating prenatal learning, so that older assumptions about birth as the starting point for psychological development have had to be revised. And the frequent outcome of studies of young infants is that their perceptual and cognitive abilities appear more sophisticated than we ever suspected. However, these findings bring with them a whole new set of questions. For instance, we are faced with why, if 3-month-olds know a great deal about physical reality, they fail to reveal this knowledge in their manual and locomotor actions until they are into their second year. In the last decade,
there has been a growing backlash against “rich interpretations” of young infants’ ability, with various counter-explanations emerging that treat the young infant’s performance as based on relatively low-level perceptual capacities.

One possibility is that these ingenious techniques provide circumstances that amplify infant ability so that it appears more fully formed than it really is. An important advance in social development concerned the proposition that infants’ abilities are initially highly fragile and only appear in situations in which adults provide the necessary support for their emergence. Although this sort of interpretation has mainly been applied to infant social development and social influences on infant cognitive development, the conclusions drawn can be similarly applied to the highly structured experimental settings used to investigate early perception and cognition. Thinking here is in its early stages, but it appears that there is a much more exciting alternative to reinterpreting the results of studies of young infants’ perceptual and cognitive abilities as revealing only fairly dull low-level perceptual functioning. More probably, these early capacities, though relatively low level, are the developmental precursors of the more fully formed abilities we see later in infancy. These early capacities are initially revealed only in physical and/or social settings that support their appearance. Thus, young infants will walk with the support of a treadmill, reveal sophisticated knowledge of objects in structured experimental settings, and show social competence in interaction with an adult. But it will be many months before these capacities are transformed into abilities that exist independent of the supportive context provided by adults and investigators.

One fascinating challenge for theory-builders is to map out the developmental processes that lead from knowledge that is implicit in the relationship between young infants and the experimental or social setting, to knowledge that can guide the infant’s intentional behavior in less structured or supportive settings. In many respects, very young infants appear to be well aware of their physical and social world and, in contrast to earlier theories such as Piaget’s, their task is not to construct awareness of the world but to construct means of acting appropriately on the basis of this awareness. Although part of this process may occur as the infant investigates the world for him or herself, there is mounting evidence to indicate that infants gain much from parents in their task of interpreting their awareness. This largely unwitting help from parents appears to include structuring the infant’s world of objects, and guiding their actions and emotional responses to objects. Through the process of social referencing, infants learn from their parents how to act and how to feel regarding their physical world.

Here we have only had space to select one or two of the exciting issues in infancy research that we now seem well equipped to investigate further. In this book you will find many other examples of progress being made on important developmental questions, and thus our aim here has been simply to whet the reader’s appetite. The handbook contains 26 chapters by leading researchers whose brief was to write an up-to-date advanced-level review of theory and findings in their area of expertise. Chapter topics and authors were selected so as to provide comprehensive coverage of research areas that are currently of central importance in the field, in terms of basic research, applied research, and policy. Our primary criterion in selecting our authors was that they should all be leaders in their fields. In addition, in order to produce a truly international perspective, we sought our
experts in a wide range of countries. We believe that the result is a stimulating balance between North American and European perspectives.

The book is organized in four main sections: Part I, Perception and Cognition; Part II, Social, Emotional, and Communicative Development; Part III, Risk Factors in Development; and Part IV, Contexts and Policy Issues. The sections adhere to conventional subdivisions of the discipline. However, both in the chapters themselves and in our editorial introductions to each section, the reader’s notice will be brought to examples of the way these subdivisions are being progressively broken down, as accounts are developed that question the distinction between perception and cognition, provide links between social and cognitive development, and indicate the applied implications of basic empirical research.

Our aim has been to make the book accessible to a wide audience. Even though each chapter addresses current issues in a scientifically advanced way, we and the authors have worked hard to achieve a writing style in each chapter that does not depend upon prior knowledge of the field. Given the relatively high level at which chapters are pitched, we anticipate that the handbook will provide a thorough overview of the field that will be particularly attractive to graduate students, to advanced undergraduates, and to university teaching staff who teach infancy research but who either do not research the field or who are confident only in a limited area. We hope it will also be attractive to academics who are looking for a high-level treatment of the field that reviews central theoretical and practical issues and cutting-edge research.
Part I

Perception and Cognition

Introduction

This section provides detailed coverage of current research on infants’ ability to perceive and remember information in their world, and to act on the basis of this information. Knowledge of infants’ perceptual and memory capacities, and at a higher level, their knowledge and understanding of the physical and social world they inhabit, is vital in itself and also for what it may imply about their social behavior and emotional responses. For instance, an ability to perceive parents and to discriminate them from other adults is an important precondition for the formation of attachment relationships, and the ability to perceive and discriminate sounds is likewise a necessary condition for the receptive side of verbal communication.

As indicated in the general introduction, there has been a revolution in what we know about young infants’ perceptual abilities. In general, the current view is that young infants and even newborns have well-established perceptual capacities. In chapter 1, Slater reviews evidence on visual perception, concluding that even newborns perceive an objective world. This might lead one to conclude that there is no perceptual development during infancy, but current evidence suggests that phenomena such as object unity, in which we as adults “fill in” occluded parts of objects, are not present at birth and develop during the first four months or so. Phenomena such as these provide an indication that it is no longer easy to provide a straightforward distinction between perception and cognition, because the ability to complete the hidden parts of an object can be considered as either a high-level perceptual capacity, based on Gestalt principles, or a cognitive ability akin to knowledge of the permanence of hidden objects. One of the challenges for future work is to establish which of these conceptualizations is most appropriate. Slater also reviews current evidence on a key aspect of social perception: face perception. Again there is evidence that newborns have at least basic processes in place for perception of and discrimination between faces, abilities that become more refined as the infant gets older.

There is a tendency to concentrate investigation on infant visual perception at the expense of the other senses. However, social stimuli in particular have important audi-