Introduction
John E. Richards

in Neoconstructivism: The New Science of Cognitive Development

This introductory chapter begins with a brief background of the term neoconstructivism, which was generated by combining neo, taken from the Greek neos, meaning “new,” and constructivism, taken from (among other sources) the pioneering theorist and researcher Jean Piaget. It then discusses the origins of this book, the idea of which was motivated in part by research on cognitive development.

ECOLOGICAL SUBJECTIVITY IN THE MAKING
Lorraine Code

This is the first of three chapters that develop the conception of subjectivity on which the book’s argument relies. It shows that the model of developmental psychology, originating with Jean Piaget and persisting in Lawrence Kohlberg’s stage theory of moral development, is embedded in assumptions about achieved rational mastery as the mark of moral and cognitive maturity. Not only does it overlook the part played by sociality and affect in child development, it pays scant attention to the constitutive role of situational factors — cultural, class, racial, gendered, sexual — in the production of human subjectivities. Taking as its point of departure Valerie Walkerdine’s critique of Piaget in The Mastery of Reason, and reading Walkerdine together with Ludwig Wittgenstein’s remarks about “the child”, the chapter argues for an approach to developmentality that is socially and ecologically aware in
its conception of subjectivity, sociality, citizenship, and of knowledge as a power-saturated social institution.

**Wonder and the Moral Emotions**

Robert C. Fuller

in Spirituality in the Flesh: Bodily Sources of Religious Experiences

Published in print: 2008 Published Online: September 2008


The emotion of wonder is among our genetically encoded programs for responding to unexpected features of the environment. Wonder is distinct from other emotions in its ability to foster receptivity, openness, metaphysical thinking, and moral sensitivity. Biological and psychological studies of wonder help us understand the moods and motivations that distinguish aesthetic spirituality or nature religion.

**Cognitive Bases of Language**

Lorraine McCune

in How Children Learn to Learn Language

Published in print: 2008 Published Online: May 2008


This chapter examines the cognitive bases of language transitions, including studies of infant “category formation”, the logic of action characterizing infant problem solving, and the earliest evidence of the mental representation of objects. It is shown that Piaget's theory provides a comprehensive guide to children's cognitive development between about 6 months and 2 years of age, the time of transition into language. Results from experimental approaches provide support for gradual cognitive developments during the same time period. Findings from a Piagetian approach integrate well with the notions of embodied cognition and a dynamic systems view of development. Two related sorts of cognitive ability emerging during this time are essential for beginning referential language: (1) the capacity to process an ongoing event as it occurs in real time and space and (2) the capacity for mental representation of meaning.
Arguments over the developmental origins of human knowledge are ancient, founded in the writings of Plato, Aristotle, Descartes, Hume, and Kant. They have also persisted long enough to become a core area of inquiry in cognitive and developmental science. Empirical contributions to these debates, however, appeared only in the last century, when Jean Piaget offered the first viable theory of knowledge acquisition that centered on the great themes discussed by Kant: object, space, time, and causality. The essence of Piaget's theory is constructivism: the building of concepts from simpler perceptual and cognitive precursors. In particular, from experience gained through manual behaviors and observation. The constructivist view was disputed by a generation of researchers dedicated to the idea of the “competent infant,” endowed with knowledge (say, of permanent objects) that emerged prior to facile manual behaviors. Taking this possibility further, it has been proposed that many fundamental cognitive mechanisms—reasoning, event prediction, decision-making, hypothesis testing, and deduction—operate independently of all experience and are, in this sense, innate. The competent-infant view has an intuitive appeal, attested to by its widespread popularity, and it enjoys a kind of parsimony: it avoids the supposed philosophical pitfall posed by having to account for novel forms of knowledge in inductive learners. But this view leaves unaddressed a vital challenge: to understand the mechanisms by which new knowledge arises. This challenge has now been met. The neoconstructivist approach is rooted in Piaget's constructivist emphasis on developmental mechanisms.

How to Build a Baby
Jean Matter Mandler

This chapter begins with a brief explanation of the purpose of the book, which is to develop and study the position from which infants begin forming a conceptual system very early in life. This system does not
gradually develop out of a prior sensorimotor period. The book cites the lack of definitions for commonly used terms such as concept, category, and basic-level. Techniques for studying concept formation in infancy and an overview of Piaget's theory of development are discussed.

Piaget's Sensorimotor Infant
Jean Matter Mandler

in Foundations of Mind: Origins of Conceptual Thought
Published in print: 2007 Published Online: September 2007
DOI: 10.1093/acprof:oso/9780195311839.003.0002

This chapter explores Piaget's conception of the sensorimotor infant. It contends that Piaget made a risky assumption which plagued developmental psychology for many years thereafter: he mistook infants' motor incompetence for conceptual incompetence. Piaget's view of image formation, his theory to conceptual thought, and motor incompetence versus cognitive incompetence are discussed.

Your Ancients
C. J. Brainerd and V. F. Reyna

in The Science of False Memory
Published in print: 2005 Published Online: January 2008
DOI: 10.1093/acprof:oso/9780195154054.003.0001

This chapter describes the historical roots of false-memory research. Although the systematic study of false memory in normal subjects is a comparatively recent phenomenon, the history of psychology presents a few examples of connected programs of research on this topic. The three most comprehensive examples are discussed: Alfred Binet's career-long interest in the suggestive forms of questioning that are commonplace in the legal arena, Jean Piaget's studies of constructive memory in children, and F. C. Bartlett's studies of repeated recall of narrative text by adults.
A Bidirectional View of Executive Function and Social Interaction

Suzanne Hala, Penny Pexman, Emma Climie, Kristin Rostad, and Melanie Glenwright

in Self- and Social-Regulation: Exploring the Relations Between Social Interaction, Social Understanding, and the Development of Executive Functions

Published in print: 2010 Published Online: May 2010

Publisher: Oxford University Press DOI: 10.1093/acprof:oso/9780195327694.003.0012

In this chapter, we explore the idea that the relation between social interaction and executive functions might be best characterized as bidirectional. That is, while developing executive function abilities almost definitely have considerable impact on emerging social understanding in young children, social interactions may also provide significant impetus for executive development. Working from a broadly Piagetian framework we include two avenues of exploration to illustrate. The first is that social collaboration on a problem might facilitate executive processes. Here we use the example of a collaboration on a strategic deception task. The second is that exposure to the ambiguous nature of social interactions may force the child to exercise more executive control, resulting in advances in various aspects of executive function. For examples, we draw from two research literatures — children's understanding of sarcasm and children's ability to grapple with acquiring more than one language.

Numerical Identity and the Development of Object Permanence

M. Keith Moore and Andrew N. Meltzoff

in Neoconstructivism: The New Science of Cognitive Development

Published in print: 2009 Published Online: February 2010

Publisher: Oxford University Press DOI: 10.1093/acprof:oso/9780195331059.003.0004

This chapter proposes an identity development (ID) account of object permanence that locates the origins and development of permanence in infants' notions of how to determine and trace numerical identity. The arguments and evidence generated from this approach suggest a number of conclusions: (a) object permanence understanding is not an all-or-none attainment; (b) permanence is understood for some disappearance transforms but not others; (c) the development of infants' spatiotemporal criteria for numerical identity provide the form and
ordering of the disappearance transforms over which they understand permanence; (d) apparent violations of permanence can cause negative emotion; and (e) taking seriously the conceptual distinctions between representation, identity, and permanence offers considerable theoretical power. The chapter presents a mechanism of change to account for the transition from having no concept of permanence to having permanence.

Spatial cognition in children
Paul A. Dudchenko

in Why People Get Lost: The Psychology and Neuroscience of Spatial Cognition
Published in print: 2010 Published Online: September 2010

The landmark experiments of Jean Piaget demonstrate that spatial abilities change during childhood. Young children can reproduce the relative spatial relationships of figures — their topology — but not angles and distances. In representing large-scale space, children progress from an egocentric view and the clustering of familiar landmarks, to an accurate representation of local environments, before finally achieving an accurate overall representation. Challenges to this view are found in the demonstration that some young children are able to navigate between locations based on their distances and direction in the absence of vision. Intriguing findings suggest that when children are misoriented in a small environment, they re-orient based on the shape of environment, even in the presence of spatial landmarks. In general, children's knowledge of an environment improves as they have more exposure to it.

Stages of Thought
Michael Horace Barnes

Published in print: 2009 Published Online: October 2011

This book examines a pattern of cognitive development that has evolved over thousands of years—a pattern manifest in both science and religion. It describes how the major world cultures built upon our natural human language skills to add literacy, logic, and, now, a highly critical self-awareness. In tracing the histories of both scientific and religious thought, the book shows why we think the way that we do today. Although religious and scientific modes of thought are often portrayed as
contradictory—one is highly rational while the other appeals to tradition and faith—the book argues that they evolved together and are actually complementary. Using the developmental thought of Piaget, it argues that cultures develop like individuals in that both learn easier cognitive skills first and master the harder ones later. This is especially true, the book states, because the harder ones often require first the creation of cognitive technology like writing or formal logic as well as the creation of social institutions that teach and sustain those skills. The book goes on to delineate the successive stages of the co-evolution of religious and scientific thought in the West, from the preliterate cultures of antiquity up to the present time. Along the way, it covers topics such as the impact of literacy on human modes of thought; the development of formalized logic and philosophical reflections; the emergence of an explicitly rational science; the birth of formal theologies; and, more recently, the growth of modern empirical science.

Commentary: Ontogenetic Cultural Psychology
Richard A. Shweder

in Bridging Cultural and Developmental Approaches to Psychology: New Syntheses in Theory, Research, and Policy
Published in print: 2010 Published Online: January 2011
DOI: 10.1093/acprof:oso/9780195383430.003.0014
Item type: chapter

This commentary aims to convince on two points. First, that this collection of chapters which has aimed at synthesizing developmental and cultural psychology, would be entirely unconvincing to Jean Piaget, if he were alive today. Secondly, that Jean Piaget is arguably right that it is not possible to be a developmental psychologist and a cultural psychologist at the same time. Nevertheless, that's no reason for despair because the developmental perspective as understood by Piaget is not the only way to understand ontogenetic change. The collection of chapters is a clarion call for the rebirth of an ontogenetic perspective on cultural psychology, but it will face many challenges; not the least of which is the suspicion of some critics that cultural acquisition typically amounts to little more than turning children into over-socialized slaves of underdeveloped traditions.
The Child's Construction of Reality
Edward M. Hundert

in Philosophy Psychiatry and Neuroscience: A Synthetic Analysis of the Varieties of Human Experience

Published in print: 1990 Published Online: October 2011
Item type: chapter

This chapter aims to aid in the studying of the human organism under optimal conditions of minimum tension and relative freedom from conflict. It deals with epistemology which is concerned with the possibility of the realization of valid knowledge. The Hegelian approach to epistemology continually reminds us of the practical sides of the problem of knowledge. Any analysis of how valid knowledge can be realized in the mind of a knower must never lose sight of the fact that knowers are actual biological creatures in a biological world. Furthermore, Piaget stressed as no one before him that epistemologists must take account of the actual thought mechanisms that make the realization of knowledge possible. Finally, given Kant's legacy, it is easy to see how one assimilates reality through the activity of their intellectual structures, whether this means the application of Kantian Categories, Piagetian schemas, or Freudian unconscious fears, drives, and wishes.

Theories of Play
Anthony D. Pellegrini

in The Role of Play in Human Development

Published in print: 2009 Published Online: April 2010
Item type: chapter

Theories from a wide variety of disciplines have examined the play of both human and non-human animals. Scholars from anthropology to zoology have proffered theories to explain the existence and impact of play on individuals and societies. This chapter focuses on those theories with currency in the scientific literature, as judged (for better or worse) by their appearance in peer-reviewed scientific journals and academic books. Specifically, it discusses Piaget's and Vygotsky's theories of play first, seeing as they are arguably the most influential in studies of human play. It then considers epigenetic theories derived from behavioral and evolutionary biology.
Introduction
Michael Horace Barnes

in Stages of Thought: The Co-Evolution of Religious Thought and Science

This book offers a history of the human search for methods to determine which ideas about the world are true. It focuses on the various methods religious thinkers and scientific inquirers have used to try to distinguish truth from error. The history of such attempts follows a developmental pattern. This pattern puts current arguments about methods of knowledge in an intelligible and useful perspective. The success of the method of science runs contrary to the postmodern strategy to keep religion safe from science. The historical analysis in this book tries to show ways in which the use of rationality in religion has proved to be valuable.

Culture and Cognition
Michael Horace Barnes

This chapter describes the thesis of cultural evolution in more detail. This provides a clearer framework for the historical chapters which make up the bulk of this book. It also provides background for understanding and evaluating the material to the analysis of major criticisms relevant to the thesis. The general thesis of the book has two major aspects. The first is that cultural development has often included the development of new and more complex styles of thinking and expression that affect religion, science, and other locales of thought. The second is that some of these developments echo the pattern of individual cognitive development as described by Jean Piaget. Three aspects of religious thought help to identify the major forms or styles: the mode of expression, the content, and the cognitive style.
Begins with a presentation and elaboration of Benacerraf's epistemic challenge to realism: how can we gain knowledge of an acausal world of non-spatio-temporal abstracts? I then outline a theory of perception based in part on neurological theories of Hebb and developmental evidence from Piaget, and I argue in these terms that we can, in fact, perceive sets of medium-sized physical objects. This account of perception is elaborated into an account of physical and mathematical intuition, faculties that produce various rudimentary beliefs that underlie the simplest physical and set theoretic assumptions (e.g. that physical objects generally look different from different points of view, or that any two objects can be collected into a set). I conclude by comparing and contrasting this epistemology with some controversial passages from Gödel's writings.

The support problem: physical connection revisited
Daniel J. Povinelli, James E. Reaux, Laura A. Teall, and Steve Giambrone

This chapter presents the results of studies on the classic 'support' problem, originally employed by Piaget (1952). Here, the problem involves a goal object (a toy) that is out of the infant's reach, but is resting on a support (a blanket) that is within reach. The question is whether the infant appreciates that the toy can be obtained by pulling on the support. Although it has been shown that apes can immediately understand the support problem in the contact/no-contact contrast, the following studies were explicitly designed to examine their understanding of why the contact condition (the object resting on the support) is associated with obtaining the reward. The results are consistent with the idea that chimpanzees solve the support problem on the basis of quite specific perceptual features related to the spatial arrangement of food and cloth. By itself this claim is fairly uncontroversial. However, the results also support the idea that these perceptual judgements do
not interact with concepts related to physical connection as the animal makes a decision to select one of the two cloths. This means that, for chimpanzees, the support problem may have nothing to do with the concept of ‘support’.

Historical Trends and Current Issues
Kelly S. Mix, Janelle Huttenlocher, and Susan Cohen Levine

in Quantitative Development in Infancy and Early Childhood

This chapter outlines the history of research on quantitative development and identifies empirical questions and theoretical issues that have emerged from this literature. The review begins with Piaget’s seminal work on early childhood numeracy. It then summarizes the major criticisms of this work, and identifies ways in which it set the stage for demonstrations of quantitative reasoning in young children and infants. Next, a description is provided of the major issues addressed in each of the subsequent chapters; issues that emerge from the tension between Piaget’s rather pessimistic view of early childhood numeracy and more optimistic accounts based on recent findings with infants.