# Chapter 1

## The Study of Human Development

### A Child of Nature?

### The Legacy of Itard
- The rise of a new discipline
- Modern developmental psychology

### The Central Questions of Developmental Psychology

#### Questions about continuity
- Are human beings distinctive?
- Is individual development continuous?
- Are there critical periods in development?

#### Questions about the sources of development
- The biological-maturation perspective
- The environmental-learning perspective
- The interactional perspective
- The cultural-context perspective

### The Discipline of Developmental Psychology

#### Criteria of scientific description

#### Techniques of data collection
- Self-reports
- Naturalistic observation
- Observation in many contexts
- Observation in a single context
- Limitations of naturalistic observations

#### Experimental methods
- Ethics and experimentation
- Experiments and artificiality

#### Clinical methods

#### Research designs
- Longitudinal designs
- Cross-sectional designs

#### The role of theory
This Book and the Field of Developmental Psychology

**Box 1.1** Philosophical forefathers of developmental psychology

**Box 1.2** Correlation does not imply causation

**Box 1.3** Ethical standards for research with children

Summary

Key terms

Suggested readings

**PART I IN THE BEGINNING**

**Chapter 2** THE HUMAN HERITAGE: GENES AND ENVIRONMENT

Sexual Reproduction and Genetic Transmission

Mitosis: A process of cell replication

Meiosis: A source of variability

Sexual determination: A case of variability

The Laws of Genetic Inheritance

Genotype and phenotype

Sex-linked genetic effects

Genes, the Organism, and the Environment

Studying gene-environment interactions

The range of reaction for human genotypes

Feedback in gene-environment interactions

Picturing gene-environment interactions

Four questions about gene-environment interactions

Is there a developmental program?

Do genes determine the phenotype?

Do genes determine capacity?

Do genes determine tendencies?

Mutations and Genetic Abnormalities

Sickle-cell anemia: An example of gene-environment interaction
CHAPTER 3 PRENATAL DEVELOPMENT

The Periods of Prenatal Development
The germinal period
The first cells of life
The emergence of new forms
Implantation

The embryonic period
Sources of nutrition and protection
The growth of the embryo

The fetal period
Fetal activity
Functions of fetal activity

The Developing Organism in the Prenatal Environment
The fetus's sensory capacities
Motion
Vision
Sound
Fetal learning

Maternal conditions and prenatal development
The effects of maternal attitudes and psychological stress
Nutritional influences on prenatal development
Extreme malnutrition
Undernourishment and associated factors

Teratogens: Environmental sources of birth defects
Drugs
Prescription and nonprescription drugs
Smoking
Alcohol
Methadone and heroin
Beginning the Parent-Child Relationship

The baby's appearance

Early parent-infant contact

Social expectations

**BOX 4.1** Prepared childbirth

**BOX 4.2** The baby's experience of birth

**BOX 4.3** The categorical perception of speech sounds

**BOX 4.4** The parents' response to the baby's arrival

Summary

Key terms

Suggested readings

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PART II INFANCY

CHAPTER 5 DEVELOPMENTAL CHANGE IN EARLY INFANCY

Becoming Coordinated

Sleeping

Feeding

Crying

Mechanisms of Developmental Change

From sucking to nursing

The biological-maturation perspective

*Reflexes and the brain*

*Evidence from studies of babies with abnormalities*

*Evidence from studies of reflexes and later behavior*

The environmental-learning perspective

*Classical conditioning*

*Operant conditioning*

The interactional perspective: Jean Piaget

*Piaget's theory of developmental change*

*The sensorimotor period and its substages*

*Piaget's theory and the social environment*

The cultural-context perspective

Integrating the Separate Threads of Development

The first postnatal bio-social-behavioral shift

The emergence of social smiling

Summing up the first two and a half months

**BOX 5.1** Comforting techniques for fussiness

**BOX 5.2** Experience and the development of the brain
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Biological Changes
Size and shape
Muscle and bone
The brain

Motor Development
Reaching and grasping
Locomotion
The role of practice in motor development

Cognitive Changes
Piaget's sensorimotor substages
Substage 3: Secondary circular reactions
Substage 4: Coordination of secondary circular reactions
Out of sight, out of mind?
Stages of object permanence
Stages 1 and 2 (birth to 4 months)
Stage 3 (4 to 8 months)
Stage 4 (8 to 12 months)
The role of familiarity in object permanence
Explaining the acquisition of object permanence
Problems associated with motor skills
Problems remembering
Problems separating movement and location
Integrating the different properties of objects
Learning about kinds of things
The growth of memory
Recall and wariness

A New Relationship to the Social World
The role of uncertainty in wariness
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Identification through observation and imitation

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Sex-role constancy

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Self-control

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  Logical classification

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  Perceiving two things at a time
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