A CUSTOM EDITION FOR MACQUARIE UNIVERSITY

PSY2235 DEVELOPMENTAL
PSYCHOLOGY

Fourth Edition

Compiled by Dr Josephine Paparo

Pearson

CONTENTS

Sample pages

CHAPTER

1

Introduction to developmental psychology

LEARNING OBJECTIVES

After reading this chapter you should be able to:

1.1   Define developmental psychology

1.2   Describe the major theories of developmental psychology

1.3   Compare and contrast developmental theories in relation to major developmental controversies

1.4   Summarise the data-collection methods used in developmental psychology

1.5   Identify the research methods used in developmental psychology

1.6   Describe popular developmental research designs

1.7   Discuss the ethical principles that guide developmental psychology research

1.8   Conduct a practical exercise to demonstrate your understanding of the ethics requirements for gaining parental permission to test children and your ability to communicate a research question in terms a parent will understand.

4 DEVELOPMENTAL PSYCHOLOGY: FROM INFANCY TO ADULTHOOD

WHAT IS DEVELOPMENTAL PSYCHOLOGY?

LO 1.1
Define developmental psychology

Developmental psychology is the discipline that seeks to identify and explain the changes that individuals undergo from the moment of conception until they die. Its scope is extremely broad, covering all aspects of psychology from a developmental perspective. Areas of investigation include physical growth (including sensation and perception), motor skills, mental or reasoning ability (cognition and learning), emotional expression, patterns of social behaviour and personality.

developmental psychology
The discipline that seeks to identify and explain the changes that individuals undergo from the moment of conception until they die.

Until recently, it was taken for granted that the terms *human development* and *developmental psychology* referred to childhood and adolescence, roughly the first 20 years of life. This stems largely from theorising by Piaget and Freud, believed by many to be the most influential developmental theorists of the 20th century (Miller, 2011). They proposed that the most significant phases of growth occurred during this period. While they may have recognised that change continues throughout the lifespan, they chose to apply the term *development* only to qualitative changes involving the growth of new capacities (Tennant, 2006). Piaget and Freud viewed the change in adulthood as limited to the refinement and extended application (as well as degeneration) of existing capacities. This focus on the early years is evident in the literature on developmental psychology, where the majority of research has investigated change up to adulthood. This focus is reflected in the chapters that follow, with much of the text devoted to child development, but there is also an attempt to include recent work on the middle years of life and to make some reference to changes that occur in the later part of the lifespan.

Table 1.1 gives a chronological overview of the lifespan divided into the significant phases of development that have been the focus of developmental research over the past 100 years. While most research has concentrated on periods 2 to 4, the prenatal period has also been a prominent research focus (particularly within the field of embryology) and there is a growing body of research into the decline in function that occurs at the other end of the life cycle. This has been identified as the domain of **gerontology**, the study of the old and the processes of aging. It is an area of increasing focus by psychologists, particularly those examining cognitive function.

gerontology
The study of the old and the processes of aging.

Four generations of one family. Developmental psychology covers the lifespan, from the rapid growth of early life to the gradual decline associated with old age.

Chronological overview of human development	TABLE 1.1

PERIOD OF LIFE	TIME FRAME
1. Prenatal	Conception to birth
2. Infancy	First 2 years
3. Childhood (a) Toddler (b) Preschool (c) Mid-childhood Onset of puberty marks the end of this period	2 years to teens 2 years to 3 years 3 years to 6 years 6 years to 12 years
4. Adolescence	12 years to 20 years
5. Young adulthood	20 years to 40 years
6. Middle age	40 years to 65 years
7. Old age (a) Young (b) Middle (c) Old	65 years + 65 years to 70 years 70 years to 85 years 85 years +

HISTORICAL FOUNDATIONS

We all have views on the nature of development and on what child-rearing practices are most appropriate to bring out the best in developing children. Most would agree that the way we treat children has an influence on their development, and that instruction and appropriate models of behaviour are important. At the same time, many characteristics emerge without any apparent intervention by parents or others who make up the child's social environment. Children appear to be naturally inquisitive and show spontaneous interest in the world around them. They are fascinated by new objects and, whether toys in the crib, a cardboard box or a set of keys, will explore them and play with them for long periods. Apparently triggered by their own inner urges, children crawl, stand and walk at much the same time, regardless of the differences in treatment they receive from those around them. This distinction between the influence of environmental factors (including formal instruction) and the spontaneous emergence of many characteristics (apparently guided from within the child) represents one of the major points of divergence between different approaches to development.

The idea that experience is vital to development was suggested by John Locke, a 17th-century English philosopher. He rejected the view, prevalent at the time, that children are born with inbuilt ideas about concepts such as mathematics and religion and that there are vast innate differences among people. Locke argued that a child's mind at birth is a **'tabula rasa'**, a blank slate that is written on by
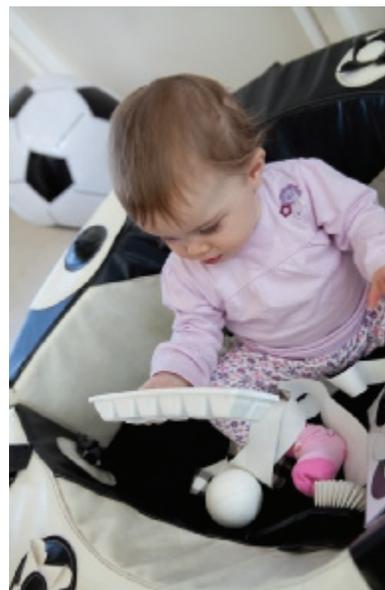
Children are naturally inquisitive and are fascinated by new objects.
Source: Studio 8. Pearson Education Ltd.

'tabula rasa' view
The idea proposed by John Locke that children's minds at birth are like a 'blank slate', to be written on by life's experiences.

6   DEVELOPMENTAL PSYCHOLOGY: FROM INFANCY TO ADULTHOOD

life's experiences, and that people are largely shaped by their environments, especially by their education. He believed that childhood experiences are important in determining adult characteristics and urged parents to spend time with their children to instruct them in appropriate behaviour. Locke's views anticipated those of the 20th-century behaviourists.

A very different view is found in the writings of the 18th-century philosopher Jean-Jacques Rousseau. Rousseau was a **predeterminist**, believing that development unfolds according to nature's plan, which leads children to develop different capabilities at different stages. Rousseau viewed the child as naturally moral and curious and hence advocated a 'child-centred' approach to child rearing, urging parents to let nature take its course. Rousseau's stage approach, based largely on inbuilt characteristics and predispositions, is reflected in the developmentalist approach that dominated developmental theory for much of the 20th century (e.g. the theories of Piaget and Erikson).

The writings of the early philosophers greatly influenced thought at the time but it was not until the 20th century that any systematic investigation began in earnest. The first step in this investigation was an intensive effort to discover and describe age-related changes in physical and psychological characteristics (the *what* of development). Researchers then turned to the questions of *how* and *why* development proceeds as it does.

A number of controversies arose out of the attempts to answer the *how* and *why* questions, and these were sources of difference between the various theoretical approaches that emerged.

DEVELOPMENTAL CONTROVERSIES

Three important areas of dispute characterise developmental psychology: the nature/nurture debate, continuity versus discontinuity, and the question of whether development is a universal process or is culturally influenced.

Nature or nurture

To what extent is development influenced by nature (inheritance) and by nurture (environmental experiences)?

As discussed in Chapter 2, it is quite clear that genetics contributes to behavioural development. The issue for developmental psychologists is to identify the extent of this contribution and the contribution made by environmental factors. Different theories of development have placed different emphasis on these two factors, with some researchers such as the behaviourists almost discounting maturational factors, while others such as Arnold Gesell emphasising maturational factors almost to the exclusion of the environmental contribution. The stance we adopt on this issue affects the way we treat children. Those who emphasise maturational factors typically advocate a more child-centred approach, where parents are guided by children's 'readiness' to master new things (as advocated by Rousseau) rather than pushing them to develop new skills; those who stress environmental factors advocate a much more directive approach to child rearing (in the manner of Locke). Modern developmental psychologists recognise that both nature and nurture contribute to behavioural characteristics (interactionist approach).

Continuity versus discontinuity

To what extent is development a continuous gradual process that proceeds by incremental quantitative change or a process involving distinct steps in which qualitative differences in behaviour can be observed?

The former process is stressed by those advocating that the major contribution to development is made by experience (e.g. learning theorists). They consider that the same processes operate throughout development and that increases in complexity are due to quantitative change. Stage theorists, on the other hand, consider development to be a discontinuous process, the discontinuity resulting from maturational change. Jean Piaget, for example, identified different ways of thinking that he associated with the different stages of development. These differences, he said, are due to maturation of cognitive processes that allow for new (more advanced) ways of thinking.

predeterminist view
The view that development is determined at birth. The philosopher Jean-Jacques Rousseau was a predeterminist who believed that children are born inherently good and that development unfolds according to 'nature's plan'.

nature/nurture controversy
The controversy over the extent to which development is influenced by nature (inheritance) and by nurture (environmental experiences).

continuity–discontinuity controversy
The controversy over whether development is a continuous, gradual process that proceeds by incremental quantitative change or a process involving distinct steps in which qualitative differences in behaviour can be observed.

Piaget noted, for example, that young children have difficulty compensating height with width when judging the amount of liquid in two different-shaped glasses, and that they tend to focus on just one of these variables (usually height). This tendency to centre on one aspect of an array, he said, is characteristic of 'preoperational' thought. As the child matures, new cognitive structures develop that allow the child to focus on many aspects at once. This, he said, is one component of performing mental 'operations'. Hence, the next stages in his theory of cognitive development involved operational thought.

Paths of development: Universal or culturally influenced?

Despite the huge range of cultural differences that affect the environments in which development takes place, many theorists have argued that some underlying processes are universal to all children (culture-free). This view is advocated by stage theorists, who claim that the underlying processes are maturationally determined and independent of environmental influences. Piaget, for example, claimed that all children, regardless of experience, upbringing or culture, proceed through four basic modes of thought (four stages of cognitive development). While experiential factors might influence the outward manifestation of these modes, he claimed that the basic modes are universal.

Challenging this view are theorists who emphasise the role of culture in human development. They insist that a child's development cannot be divorced from the cultural context in which it occurs. Such theorists emphasise the experiential contributions to development, particularly those associated with culture, which might be defined as the knowledge, attitudes, behaviours, customs and products associated with that group of people.

Modern theories differ in their emphasis on development as universal versus a culturally specific process. While some are extreme in their view (either/or), others strike a balance between the two.

STOP & REVIEW

Choose one of the above controversies and discuss the evidence for and against each side (e.g. do you think development is a universal or a culturally influenced process?).

APPROACHES TO DEVELOPMENTAL PSYCHOLOGY

LO 1.2

Describe the major theories of developmental psychology

The scope of developmental psychology is, as pointed out earlier, extremely broad. It covers all aspects of psychology from a developmental perspective. It is not surprising that the theoretical explanations of development are also diverse. This section examines a number of these theoretical approaches, pointing out their stance on the developmental controversies just discussed. Many of the theories are discussed further in later chapters of the book.

The normative-descriptive approach

The **normative-descriptive approach** is so called because it involves description of the normal or average status of people on specified characteristics at different age levels. These are descriptive or age norms. This approach had its early origins in North America in the 1890s with G. Stanley Hall at Clark University. Hall tried to identify the 'normal' characteristics of children. He devised elaborate questionnaires (to be filled in by parents) and used them to collect enormous amounts of data on thousands of children. Unfortunately, this questionnaire technique proved to be of little value for establishing the normative data he was seeking because it lacked reliability and validity, but this was the beginning of the attempt to obtain such data and the start of modern developmental psychology. The normative-descriptive approach dominated studies of child development in the United States in the first half of the 20th century. Although this approach no longer has the

normative-descriptive approach
Approach to developmental psychology that describes the normal or average status of people on specified characteristics at different age levels. It is the 'what happens when?' approach that was pioneered by Arnold Gesell.

8 DEVELOPMENTAL PSYCHOLOGY: FROM INFANCY TO ADULTHOOD

dominance it once had, it remains important because of the application of its findings, particularly in the area of paediatrics.

The beginning of the normative-descriptive approach based on careful systematic observations of children lies with one of Hall's students, Arnold Gesell (1880–1961). After studying with Hall at Clark University, Gesell joined the Department of Education at Yale and, in 1911, established the Yale Clinic of Child Development. For the rest of his life, Gesell concentrated on mapping as carefully as possible children's characteristics at each age level on a wide range of parameters. He gathered normative data on physical, social, mental and behavioural development. Out of this work, Gesell developed a maturational theory of development in which development was seen as intrinsically guided and strongly predeterministic. Development, he thought, was guided by genetic endowment and proceeded as a sequential unfolding of structures and patterns. The key concept of his theory was maturation, or growth. He therefore felt that the most important mission for developmental psychologists was the description of normal (average) characteristics, or what to expect of 'normal children' at any given age (Gesell & Ilg, 1949).

In his attempts to obtain normative data Gesell created an array of tests, measuring procedures and observational techniques, and he was one of the first to make use of film observation. These techniques enabled him to describe precisely and objectively children's status in a wide range of areas. He emphasised the importance of precision in observation in order to establish accurate norms based on reliable and valid data. Thomas (1996) acknowledges this emphasis on careful empirical observation and measurement of children as 'one of the most important advances in the field of human development over the past century' (p. 56). Gesell's was a multifaceted approach, looking at a large number of aspects of development rather than focusing on just one or two areas. He concentrated on areas that would be of concern to parents and teachers (e.g. sleeping habits, adjustment to school, manners, truthfulness), and much of his work was written up for public consumption with statistics interpreted (but not presented in detail) and with suggestions for child rearing (Gesell, Ilg, Ames & Bullis, 1977).

maturation
The term used by Gesell for the mechanisms by which genes direct the developmental process (intrinsically determined age-related changes).

Gesell's approach emphasised genetic determinants. He used the term **maturation** for the mechanisms by which genes direct the developmental process and saw environmental factors as supporting proper development but playing no role in the 'sequential unfolding' of characteristics, a process governed by maturation. While he noted that there was variation in the rate of development, he stressed that all children proceed through the same sequence (i.e. there is a universal path of development).

For Gesell, development proceeded through 'better' and 'worse' phases, which he said appear in recurring cycles and are essentially the same for all children. A 'better' phase he defined as one where the child appears to be in good adjustment or balance, while a 'worse' phase is one where the child is unhappy, confused and at odds with others (i.e. an alternation of equilibrium and disequilibrium). His advice to parents of a child in a worse phase was to let the child be and accept the behaviour, because things will get better of their own accord (as a better phase always follows a worse phase). His was a child-centred approach to child rearing. While this sounds like a recipe for 'spoiling' the child, Gesell recognised the need for some constraints on behaviour so that children learn to control their impulses to meet the demands of their culture. This should be done when the child is ready to cope with such constraint, a readiness dictated by maturation.

While Gesell's theoretical stance has been challenged, particularly by those who view the environment as much more influential in shaping normal development, the normative-descriptive approach has played a very important role in developmental psychology. It provides the norms against which individual assessments can be compared, giving a means of evaluating the developmental status of individual children. This is of particular importance for paediatricians. The earlier children with physical, mental, emotional or social disabilities are discovered, the more hopeful is the prognosis for amelioration or rehabilitation.

STOP & REVIEW

Why was Gesell's emphasis on careful empirical observation and measurement of children so important for the field of human development assessment?

Early in the 20th century, at the time Gesell was developing his normative-descriptive approach in the United States, Alfred Binet, a French psychologist, was also using this approach to describe the development of cognitive ability. Binet was specifically interested in mental testing to identify children who were likely to experience learning difficulty at school. This resulted in the first intelligence test, which was translated into English and adapted for use with American children at Stanford University in 1916. The resultant test, the **Stanford-Binet Intelligence Scale**, became a widely used instrument for assessing intelligence and predicting academic achievement. The presence of a reliable test for assessing cognitive ability generated great interest in mental testing. The study of individual differences in intelligence initiated great debate about the origins of these differences (the nature/nurture debate) which persisted throughout the 20th century.

At the same time that Gesell's work was influencing American research into child development and the mental-testing movement was burgeoning, Freud's theory of personality development was having an influence in America as well as in Europe. By the middle of the 20th century Freud's psychodynamic theory (and Erikson's neo-Freudian approach), Piaget's theory of cognitive development, and the work of behaviourists such as Watson and Skinner were all influencing views on child development.

Vygotsky's sociocultural approach also began to influence the study of development in the latter part of the 20th century. Although his ideas had been developed at about the same time that Piaget was becoming influential (Vygotsky's book *Language and Thought* was published in the Soviet Union in 1934, the year of his death), his work was banned by the Soviet government until 1956 and was not available in the West. Once his ideas became known, Vygotsky's theory became highly influential. Miller (2011) describes him as one of 'the Big Three theorists in the history of developmental psychology' (p. 166), the other two being Freud and Piaget.

Both Freud's psychoanalytic theory and Piaget's cognitive theory are stage theories, characterised by three features: (1) they identify maturationally determined discontinuous aspects of development; (2) they claim that the stages are universal; and (3) they adopt an interactionist approach to the nature/nurture issue (i.e. both inheritance and environmental experiences contribute to development).

Freud's psychoanalytic theory

Sigmund Freud (1856–1939) developed his psychosexual theory of personality from the analysis of patients he saw in his practice as a Viennese physician in the late 19th and early 20th centuries. His treatment of (adult) patients with 'hysteria' (characterised by symptoms such as fear, hallucination, paralysis, numbness and tremors without any physical cause) led Freud to experiment with hypnosis and the 'talking cure' (having patients talk about and 'relive' their emotion-laden experiences from early life). He saw these techniques as a means of discovering traumatic past events (from childhood) that had been pushed beneath awareness and back into the unconscious mind (repressed).

Freud identified three structures that determine personality development. He called these personality structures the *id*, the *ego* and the *superego*. These, he said, become integrated during development.

The **id**, he said, is an innate structure, the sole structure of personality at birth, and contains all of the person's psychic energy (libido). The id functions to obtain pleasure by directing the libido to the appropriate part of the body to obtain gratification. This shifts during development from the mouth to the anus to the genitals in an innately programmed sequence (stages of development). Freud saw the id as operating on the 'pleasure principle', without regard for the outside world (i.e. unconsciously).

The **ego**, on the other hand, takes action in the real world to expend instinctual energy from the id. It is the arbitrator between instinctual demands and the realities of the outside world, with the role of appraising the external world and societal standards and adapting to them. Hence, it operates on the 'reality principle'.

Freud regarded the **superego** as the moral agency of personality (the conscience). The ego has to balance the sexual and aggressive impulses of the id against the censure of the superego. As a consequence of this balancing act, an individual's personality is determined by the strength of their superego and the nature of the dynamics between these three forces. This balance between the

Stanford-Binet Intelligence Scale
A widely used instrument for assessing intelligence and predicting academic achievement. It was based on the first intelligence test developed by French psychologist Alfred Binet.

Freud's psychoanalytic theory
A psychosexual theory of personality development in which three structures (the id, the ego and the superego) determine personality development. These, Freud said, become integrated during development.

id
(In Freudian psychology) An innate structure, the sole structure of personality at birth, that contains all of the person's psychic energy (libido). The id functions unconsciously to obtain pleasure by directing the libido to the appropriate part of the body to obtain gratification.

ego
(In Freudian psychology) The arbitrator between instinctual demands and the realities of the outside world, with the role of appraising the external world and societal standards and adapting to them.

superego
(In Freudian psychology) Regarded by Freud as the moral agency of personality (the conscience).

10   DEVELOPMENTAL PSYCHOLOGY: FROM INFANCY TO ADULTHOOD

three personality structures shifts during development as the initial dominance of the id is gradually influenced more and more by the ego and superego. This is shown in Freud's five age-related developmental stages (see Table 1.2). Freudian theory is discussed further in Chapter 8 in relation to personality development and in Chapter 11 in relation to moral development.

Because of Freud's emphasis on unconscious processes and childhood experiences, direct empirical evidence of his theory of personality development is difficult to find. The evidence that does exist may be only an *indirect* measure of Freudian constructs, if that. This point is reiterated by Sollod, Wilson and Monte (2009), who state:

> The problem is not that the psychoanalytic constructs of repression or of the Oedipus complex are fantastic, bizarre, or untrue. The real problem is that they are not readily testable in the form in which Freud proposed them . . . for each failure of a concept to provide the possibility of disconfirmation, the theory is weakened as an acceptable scientific account of human action and thought. (p. 68)

The key point here is that Freud's approach cannot be tested empirically because its main constructs (instincts, repressions) do not lend themselves to scientific investigation involving random assignment to conditions or variable manipulation.

TABLE 1.2   **Freud's psychosexual stages**

STAGE	AGE	CHARACTERISTICS
Oral	Birth to 1 year	Infant's pleasure centres on the mouth – infant derives pleasure from oral activities (sucking, chewing, etc.). Feeding is particularly important. Danger in abrupt or early weaning – development of habits such as thumb sucking, nail biting, overeating, smoking.
Anal	1 to 3 years	Child's pleasure focuses on the anus – voluntary urination/defecation gratifies the sex instinct. Danger in conflict over toilet training – extreme messiness and disorder, or neatness and cleanliness.
Phallic	3 to 6 years	Child's pleasure focuses on the genitals – pleasure from genital stimulation. Sexual desire for other-sex parent (called the *Oedipus complex* for boys and *Electra complex* for girls). Anxiety stems from this conflict, causing child to internalise sex-role characteristics of same-sex parent.
Latency	6 years to puberty	Child represses sexual interest and develops social and intellectual skills. New values acquired from play with same-sex peers.
Genital	Puberty onwards	Sexual urges reawaken – mature sexuality – pleasure from outside the family.

STOP & REVIEW

What explanation did Freud give for the link between early or abrupt weaning in infancy and nail biting or smoking in adulthood?

Erikson's neo-Freudian theory
A psychosocial theory of personality development built on Freudian psychoanalytic theory but focusing on the role of the outside world rather than on the instinctual urges of the id.

Erikson's neo-Freudian theory

Erik Erikson (1902–94) built his theory on Freudian psychoanalytic theory but focused on the role of the outside world rather than on the instinctual urges of the id. His aim was to point out the developmental opportunities in individuals that help them to cope with the psychological hazards of living. He concentrated on the development of the healthy personality, formed through the successful solution of a series of maturationally determined developmental crises.

Stemming from his concentration on the ego and hence the significant influence of outside factors, Erikson introduced a matrix of psychosocial stages through which individuals' sphere of interaction moves – from their relationship to parents, to the context of family and their relation to a wider social setting. This social complex replaced the Freudian triangle (child–mother–father), hence broadening the scope of the theory. He proposed eight stages of development (including adult development) with development proceeding according to a preset construction plan and a preset timetable. Within each stage, Erikson proposed that there are particular characteristics that must emerge if a healthy personality is to be achieved. The emergence of these characteristics depends on resolution of a stage-specific crisis. Hence the theory is strongly maturationally based, but it also attributes a major role to societal (cultural) influences. These cultural influences, he said, influence the nature of the crises arising at each stage (although not the stage itself) and the success with which the child masters the stage.

Erikson's theory is discussed in some detail in Chapters 8 and 9.

Piaget's cognitive theory

Jean Piaget (1896–1980) developed the most widely known and influential theory of cognitive development. This theory had enormous impact, not just within psychology but also in areas such as education and philosophy. The significance of this impact can be gauged by Miller's (2011) statement: 'Piaget has been the most important figure in developmental psychology' (p. 28).

Piaget was a Swiss psychologist who demonstrated his great intellectual talent from early in life. As a boy he had a wide range of interests, including mechanics, natural history (particularly molluscs and birds) and fossils. One of his early writings (a pamphlet describing a mechanical invention) was written in pencil because he was not yet allowed to write in ink (Miller, 2011). His first publication, at the age of 10, was an article on an albino sparrow. His great interest in natural history led him to complete a PhD in biology in 1918. He turned his attention to psychology when Theodore Simon, a pioneer in the development of intelligence tests, introduced Piaget to mental testing. Piaget was not enthused by intelligence testing but became fascinated with the thought processes involved in answering questions. He set out to discover 'a sort of embryology of intelligence' (Piaget, 1952, p. 245).

Piaget's background in biology is reflected in his developmental theory, where a central concept is the biological idea of *adaptation*. He proposed that just as organisms adapt to their environments at the physical level, so too thought adapts to the environment at a psychological level. He believed the processes involved in this adaptation are universal to all people in all cultures. His theory of cognitive development suggested that maturational processes govern the emergence of new ways of thinking as this adaptation proceeds. It was hence a stage theory, positing discontinuous development and culturally universal processes.

At the same time, Piaget recognised the vital importance of developing individuals interacting with their environment (the child as an active participant in the developmental process). It was hence an interactionist approach with both nature and nurture contributing to the developmental process. Further details of his theory and the proposed stages of development he identified are discussed in Chapter 5.

Learning theory

J. B. Watson was the first modern psychologist to apply principles of learning to the problem of development. The learning principles he applied were **Pavlovian classical conditioning** principles. In Pavlovian conditioning an innocuous stimulus (e.g. the rustle of a paper bag) that is frequently associated with some biologically significant event (e.g. the presence of food) will come to elicit some of the emotional reactions of the significant event (i.e. after conditioning, people will begin to salivate at the sound of the rustle of the bag). Watson emphasised the effect of the environment in much the same manner as Locke, as is shown by the famous statement made in his 1924 book, *Behaviorism*:

> Give me a dozen healthy infants, well formed, and my own specified world to bring them up in and I'll guarantee to take any one at random and train him to become any type of specialist I might select – doctor, lawyer, artist, merchant, chief and, yes, even beggar-man and thief, regardless of his talents, tendencies, abilities, vocations and race of his ancestors. (p. 104)

Piaget's cognitive theory
The most influential stage theory of cognitive development, stressing the child as an active participant in the developmental process.

Pavlovian classical conditioning
Conditioning in which an innocuous stimulus (e.g. the rustle of a paper bag) which is frequently associated with some biologically significant event (e.g. the presence of food) comes to elicit some of the emotional reactions of the significant event (i.e. after conditioning, people will begin to salivate at the sound of the rustle of the bag).

12 DEVELOPMENTAL PSYCHOLOGY: FROM INFANCY TO ADULTHOOD

In other words, he considered environmental factors as being all-important and genetic influences minimal in determining developmental outcome.

Watson's main interest in child development was the study of conditioned emotions, particularly rage and fear. His most cited study is the case of Albert, a child who was conditioned to fear white furry objects (Watson & Rayner, 1920). When 11-month-old Albert reached out to touch a white rat, two metal bars were clashed together behind his head, frightening him and causing distress and crying. After a few exposures to this, Albert became fearful at the sight of the rat. Hence, with repeated pairing of a conditioned stimulus (white rat) with an unconditioned stimulus (loud noise), the unconditioned response to the noise (fear) became a conditioned response to the rat (a conditioned fear response). The researchers also demonstrated that this fear generalised to other white furry objects. The study showed quite clearly that an emotional response could be developed by simple associative learning.

While Watson's writings greatly influenced the subsequent behaviourist approach, his concentration on Pavlovian conditioning limited the usefulness of the approach in explaining development. A behaviourist who had a much greater influence on child development theory and child-rearing practice was B. F. Skinner, to whom we can trace modern learning theories of development.

Skinner viewed development as a continuous, incremental sequence of specific conditioned acts. Like Watson, Skinner was convinced of the importance of objective methodology and experimental rigour in understanding how behaviour changes. Both preferred to focus on simple behavioural events before attempting to understand complex ones. Skinner used principles derived from laboratory studies to interpret the behaviour of human beings but insisted that interpretation should not be confused with an explanation of why people behave in a certain way.

operant conditioning
Conditioning in which a response is strengthened by immediate reinforcement.

Skinner believed that most human behaviours are learned through **operant conditioning**. The key to operant conditioning is the immediate reinforcement of a response. The reinforcer acts retrospectively to strengthen the event (behaviour) that immediately preceded it.

Through his basic operant paradigm, Skinner proposed several related concepts (such as positive and negative reinforcement, secondary or conditioned reinforcement, punishment, extinction, behaviour shaping, schedules of reinforcement, stimulus generalisation and stimulus discrimination) that have become common terminology in psychology.

In the 1960s there were numerous demonstrations that the frequency of occurrence of a wide variety of behaviours in infants and children could be increased if they were reinforced. Of particular interest was the fact that social reinforcers, such as attention, smiles and praise from other people, were potent reinforcers. There were also studies of **behaviour modification**, with the application of principles of operant conditioning to reduce the incidence of undesirable behaviours such as temper tantrums.

behaviour modification
The application of principles of operant conditioning to change the incidence of a particular behaviour (e.g. to reduce the incidence of undesirable behaviours such as temper tantrums).

Skinner's view of development was that the increasingly complex behaviour that emerges with increasing age is the outcome of the child learning increasingly complex and refined ways of acting, as the result of the consequences that have followed previous actions. Hence his focus was on quantitative change and continuous development. Skinner saw as the role of parents and teachers getting children to attempt desirable actions and arranging the consequences of these actions so that desirable behaviour was rewarded and undesirable behaviour extinguished.

Skinner's approach to development had a marked influence on child-rearing practice. This is particularly noticeable in the educational setting, where the use of programmed instruction tools with gradual, step-by-step increments in difficulty and frequent reward for correct performance were a product of his approach.

STOP & REVIEW

Think of additional examples of Pavlovian conditioning and operant conditioning, and explain the differences between these two forms of conditioning.

Watson and Skinner were both behaviourists who emphasised a focus on observable *stimuli* and the *responses* to these stimuli (hence the term *S-R theory*). One of the criticisms of the strict behaviourist approach came from other learning theorists. Bandura (1977) said: 'A valid criticism of extreme behaviourism is that, in a vigorous effort to avoid spurious inner causes, it has neglected determinants of behaviour arising from cognitive functioning' (p. 10).

Bandura's social cognitive theory

Albert Bandura proposed a social cognitive theory based on Skinnerian theory but with some significant modifications. Bandura's is essentially an 'S-O-R theory', where 'O' represents variables within the organism (cognition or thought) that intervene between stimulus and response. A major difference between Bandura's model of development and Skinner's is the role attributed by Bandura to observational learning, or learning from models. He proposed that observation allows us to learn without performing any behaviour. The core of observational learning is modelling, where we observe other people's behaviour and its consequence for them. This, he said, 'enables people to acquire large integrated patterns of behaviour without having to form them gradually by tedious trial and error' (Bandura, 1977, p. 12).

He identified several factors that determine whether we will learn from a model. These include:

- the *characteristics of the model*: we are most likely to model high-status individuals, competent individuals and powerful people;
- the *characteristics of the observer*: people who lack status, skill or power are most likely to model (i.e. children and novices); and
- the *consequences of the behaviour*: the greater the value that the observer places on the behaviour, the more likely that the behaviour will be learned.

STOP & REVIEW

With the above factors in mind, why might television influence children's behaviour? What sorts of TV characters are children most likely to copy?

Bandura proposed a four-step model of observational learning. He said that learning by watching or reading about another's performance clearly involves mental activity. The learner must:

1. *attend* to the model (we are most likely to attend to family members and friends who we frequently associate with, attractive models at work or on TV, and behaviour that is important to us);
2. *remember* what is seen and heard if this is to be reproduced later;
3. *reproduce* the memory of the model's behaviour during imitation; and
4. *receive reinforcement* for accurate performance of the observed behaviour.

For example, if you see a classmate receiving positive feedback from a lecturer for asking a question, it will increase the probability that you will learn to ask questions in class.

Bandura rejected the learning models that explained all observational learning and imitation as due directly to a history of contingent rewards and punishments. Instead, he argued that the effects of contingent rewards and punishments are cognitively mediated. Unlike radical behaviourists, Bandura argued that reinforcement must be understood in cognitive terms, where reinforcement has more to do with performance enhancement than with an automatic response strengthening. Some major differences between Skinner's radical behaviourism and Bandura's social cognitive approach are shown in Table 1.3 (p. 14).

Social cognitive theory proposes a continuous approach to development (quantitative, rather than qualitative, change), but this does not mean that Bandura's theory ignores developmental factors. Bandura recognises that, as children develop, they change in their capacity to attend to models, to encode and remember what models do, to abstract rules and principles linking certain

Bandura's social cognitive theory
A social cognitive theory based on Skinnerian theory but with organismic variables (cognition) intervening between the stimulus and response.

14   DEVELOPMENTAL PSYCHOLOGY: FROM INFANCY TO ADULTHOOD

actions to certain consequences, and to monitor their own behaviour in accordance with such rules (Bussey & Bandura, 1999; Perry & Bussey, 1984). For example, overt imitation declines over the years, despite the fact that observational learning increases. Overt imitation is just the 'tip of the iceberg' of what children learn through observation; as they grow older their attention increases and they develop the capacity to encode more action sequences than they can actually imitate. Bandura's social cognitive approach is discussed in later chapters in relation to personality development (Chapter 8), social development (Chapter 9), emotional development (Chapter 10) and moral development (Chapter 11).

TABLE 1.3   **Differences between radical behaviourism and the social cognitive approach**

SKINNER (BEHAVIOURISM)	BANDURA (SOCIAL LEARNING)
Environment is most important	Interaction between behaviour, cognition and the environment, with cognition being more important
Responses have to occur in order to be learned	Responses can be learned by observing (cognition) another person's responses; thus, learning can occur prior to our responses
Reinforcement must be directly related to your behaviour	Reinforcement can be vicarious (indirect)
Learning does not occur without reinforcement	Reinforcement does not occur without prior cognition; learning is cognitively mediated and not an inevitable consequence of the environment alone
No concept of self	A self system that acts on the environment and behaviour, including self-monitoring and self-efficacy

Ethological theory

ethology
The study of behaviour with evolutionary significance for a species in its natural surroundings.

Ethology is 'the study of the evolutionarily significant behaviour of a species in its natural surroundings' (Miller, 2011, p. 326). As a distinct discipline it began in the 1930s with the European zoologists Konrad Lorenz and Niko Tinbergen. Ethology is characterised by four basic concepts:

1. species-specific innate behaviour (such as imprinting);
2. an evolutionary perspective (natural selection for particular behavioural traits);
3. learning predispositions (readiness to learn particular behaviour and the presence of critical periods for this learning); and
4. a methodology that employed first careful observation and then laboratory experimentation to determine the immediate causes of behaviour (deprivation experiments).

Developmental psychology readily adopted ethological principles because of the tradition of naturalistic observation of children and consideration of the biological basis of development (the work of Gesell and Piaget). The most important figure to bring ethology to the attention of psychologists was John Bowlby (1907–90), who was trained in psychoanalytic psychology but adopted an ethological approach in attempting to explain infant attachment.

Freud's search for an explanation of behaviour focused on the events of early childhood, despite the fact that he rarely relied on direct observation of children. The result is that most concepts that psychoanalysts have about early childhood have been arrived at by the process of historical reconstruction based on data derived from older subjects; thus the events and processes inferred belong to a phase of life that has already passed. Freud worked from an end-product backwards by studying personality and social behaviours that were more or less developed. Ethologists such as John Bowlby and Mary Ainsworth (1913–99) took a different approach by relying on real-life, direct observation of

how young children behave towards their mother, in both her presence and her absence. In particular, the aim was to describe certain patterns of responses that occur regularly in early childhood and, thence, to trace out how similar patterns of response are to be discerned in the functioning adult. This approach was radical at the time, focusing on the loss of a mother figure in infancy or early childhood and attempting to trace the psychological consequences that emerge later in development.

Their ethological approach led them to the view that attachment bonds between mothers and their infants exist because they help the species survive through many generations. In addition, they argue that certain patterns of social behaviours exist because of natural selection, as they serve a survival function and are controlled by inherited instincts. For example, sexual behaviour would be expected to be under instinctual control. Unlike Bandura's social cognitive approach, ethology views behaviours such as aggression and attachment as having an instinctual basis. **Instincts** are rigid chains of behaviour that are reflexively elicited by specific environmental stimuli. It seems undeniable that certain behaviours in children are at least partly under the control of inherited instincts, especially in the early months of life. The infant's early social responses, such as smiling, looking and vocalising, follow an inbuilt timetable of responsiveness to specific cues from caregivers.

instincts
Rigid chains of behaviour that are reflexively elicited by specific environmental stimuli.

It is in early childhood (i.e. the preverbal period) that ethologists expect to find instinctual features in their least modified form. As children develop and have more opportunities for social learning, it becomes more difficult to untangle the effects of instincts from the effects of experience. The usefulness of the ethological approach diminishes as children mature and begin to reap the benefits of learning and thinking, but it is most useful in understanding how certain social behaviours such as attachment are established in the early phases of development. The development of attachment is described in greater detail in Chapter 9.

In 1950, Bowlby was asked by the World Health Organization to advise on the mental health of homeless children. This led him to conclude that it was essential for mental health that infants and young children experience a warm, intimate and continuous relationship with their mother (or permanent mother substitute) in which both find satisfaction and enjoyment. During this time Bowlby and a colleague, James Robertson, made some important observations of young children before, during and after a stay away from home lasting weeks to months. They were particularly concerned about the extent and duration of intense distress and misery experienced by the children after they returned home.

These naturalistic studies provided the groundwork for more systematic studies that concentrated on children's responses to the experience of being separated from and later reunited with their mother. The foundation was laid that the loss of a mother figure, by itself or in combination with other variables, can generate responses (making excessive demands on others and being anxious and angry when they are not met) that exist in childhood and can be the same in older adults who are still affected by a separation they may have experienced in early life.

STOP & REVIEW

How would the explanations for attachment offered by John Bowlby and by Albert Bandura differ?

Contextual theories

Kurt Lewin espoused the view that behaviour (as well as its development) is a function of the interaction between the person and the environment (Lewin, 1931). When speaking about human behaviour he did so by placing it in context: situational, interpersonal, sociological, cultural, historical and theoretical. Elements of this contextual approach have been incorporated into a number of subsequent developmental theories including Bronfenbrenner's ecological theory, Vygotsky's sociocultural theory, dynamic-systems theory (Thelen) and lifespan theory (Baltes). All acknowledge the complex interplay of personal (including biological) and environmental factors that contribute to development.

contextual theories
Theories of developmental psychology based on the view that behaviour (as well as its development) is a function of the interaction between the person and the environment.

16 DEVELOPMENTAL PSYCHOLOGY: FROM INFANCY TO ADULTHOOD

Bronfenbrenner's ecological theory
An environmental theory recognising multiple layers of contextual influence on development. Bronfenbrenner articulated four major systems that represent the context for child development: microsystem, mesosystem, exosystem and macrosystem.

microsystem
(In Bronfenbrenner's ecological theory) The most proximal level of context to the individual. Typical components include interpersonal relationships with family members, a peer network and neighbours.

mesosystem
(In Bronfenbrenner's ecological theory) A system of microsystems through which different settings are linked (e.g. the linkage between the family at home and peers at school).

exosystem
(In Bronfenbrenner's ecological theory) A system that is more distal from the developing person (e.g. interactions that occur within a parent's place of employment and have an impact on the microsystem level of the family).

macrosystem
(In Bronfenbrenner's ecological theory) A broad societal blueprint that contains the core structures and values that compose a particular culture (e.g. political, religious and educational values; social policy and support; standards for behaviour and appearance; and roles according to age, sex and ethnicity).

chronosystem
(In Bronfenbrenner's ecological theory) Changes in the person or environment over time.

Bronfenbrenner's ecological theory

Ecological models like Urie Bronfenbrenner's (1989) recognise the multiple layers of contextual influences on child development, asserting that developmental research must attempt to include several contexts in research designs to capture the complexity of any phenomenon. Bronfenbrenner originally articulated four major systems that represent the context for child development: microsystem, mesosystem, exosystem and macrosystem. These levels of context simultaneously affect the individual and interact with one another.

More recent writings of Bronfenbrenner have called the original model into question by noting the limitations of the approach in capturing the dynamic nature of interactions between the developing individual and the surrounding environment. Bronfenbrenner and Morris (2006) have even proposed a more elaborate bioecological model that argues for the distinct importance of four elements in environmental research designs: person, process, context and time. Hence, they added a fifth system, the chronosystem, to the original model (see Figure 1.1).

1. The **microsystem** was described by Bronfenbrenner (1977) as 'an immediate setting containing that person' where interactions occur between the developing person and the environment (p. 514). The microsystem is the most proximal level of context to the individual; for example, typical components include interpersonal relationships with family members, a peer network and neighbours.
2. The **mesosystem** was referred to by Bronfenbrenner as 'a system of microsystems' through which different settings are linked. An example of this level of ecology might be the linkage between the family at home and peers at school. These interwoven relationships can be supportive of each microsystem or in opposition to each microsystem (e.g. when parents are not familiar with their adolescent child's peer group this can lead to an impoverished mesosystem). Bronfenbrenner also noted that substantial changes in any one microsystem often necessitate an 'ecological transition' within the mesosystem, such as when children move out of home to a friend's place.
3. The **exosystem** is more distal from the developing person. Here the individual does not participate directly in interactions, although decisions made at this level greatly affect a person. For example, interactions that occur within a parent's place of employment often have a significant impact on the microsystem level of the family.
4. The **macrosystem** is described as a broad societal blueprint containing the core structures and values that compose a particular culture. Features of the macrosystem include political, religious and educational values; social policy and support; appropriate standards for behaviour and appearance; and roles according to age, sex and ethnicity.
5. The **chronosystem** refers to changes in the person or environment over time.

The bioecological model may lead to more research on how a developmental process may vary as a function of contextual variables or characteristics of the individual. To date, however, such questions remain understudied within developmental research (Bronfenbrenner and Morris, 2006). With technology advancing at its current rapid rate, the role of the internet and 'virtual contexts' such as social networking will be research areas worth pursuing in the future. Bronfenbrenner's framework may provide an important starting point for identifying environmental variables worthy of consideration.

According to Lloyd (2002), significant research has included the proximal ecological levels of the microsystem and mesosystem (e.g. comparison between home and school attitudes, or the interaction between parents and teachers), but the processes by which the broad cultural messages of the macrosystem filter through the ecology to finally affect the developing person are less well understood.

Vygotsky's sociocultural theory of cognitive development

Lev Vygotsky (1896–1934) was born in the same year as Piaget but into a very different culture. He was brought up in Russia at a time of rapid social change and a growing influence of Marxist philosophy. His work was guided by Marxist principles, particularly with respect to the influence of social history and culture on development. His view emphasised the importance of the sociocultural

FIGURE
1.1

Bronfenbrenner's ecological systems model
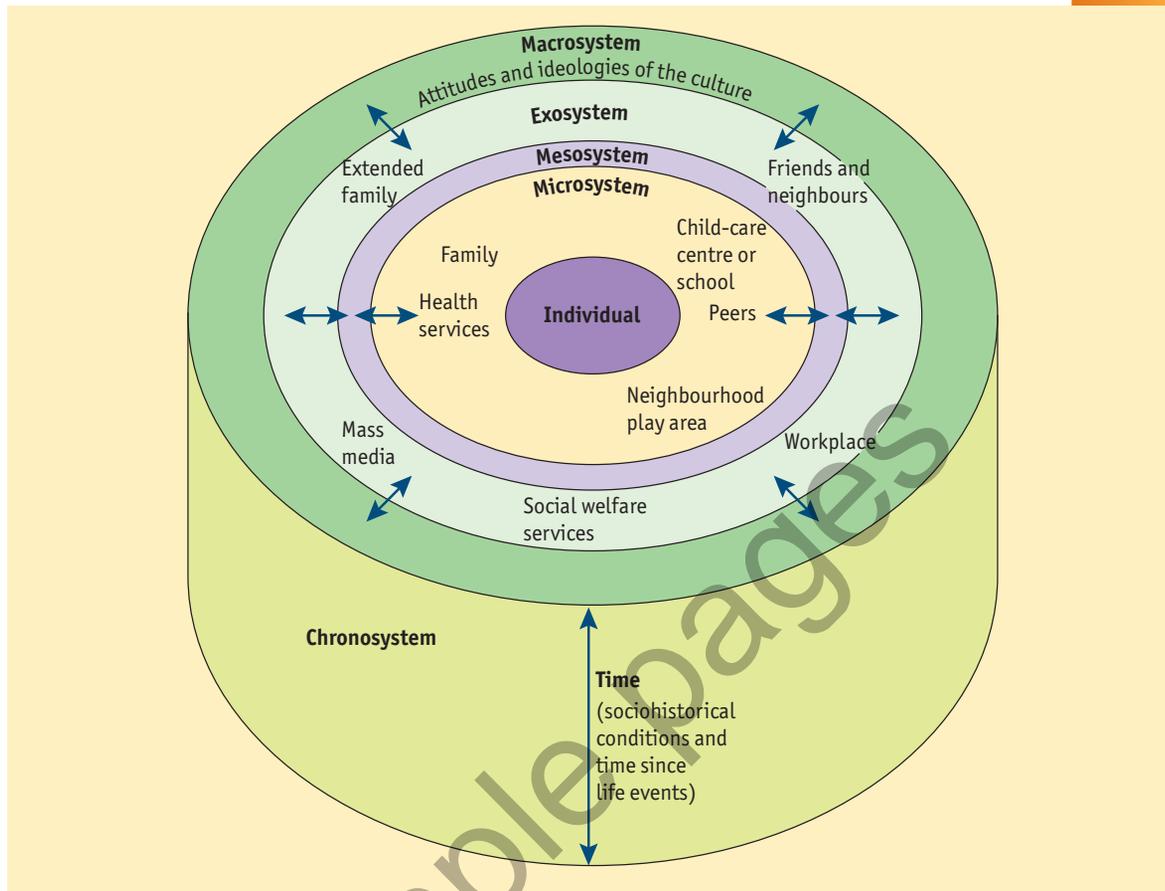
Source: Based on U. Bronfenbrenner, *The Ecology of Human Development: Experiments by Nature and Design.* Harvard University Press, 1979.

matrix of which the individual is a part and the social interaction that plays a major role in cognitive development. Sociocultural theory focuses on how the culture of a social group – its shared beliefs, values, knowledge, skills and ways of doing things (customs) – are transmitted to the next generation. Vygotsky believed that children actively construct their knowledge and that social interaction is the means of such construction, saying that 'children grow into the intellectual life of those around them' (Vygotsky, 1978, p. 88).

Vygotsky insisted that individual development could be examined only in light of the cultural context in which it takes place and that to examine the child in isolation from this cultural context is to gain a distorted view of the child. He insisted that we must look beyond the individual in seeking explanation for change, and that the child-in-activity-in-cultural-context should be the unit of study (Miller, 2011). For example, in evaluating the case of a child who begins to have problems at school, focusing only on the child's behaviour is unlikely to provide an answer to the problem. The child's behaviour may be a result of pressures from outside – for example, tension at home because the child's father has lost his job in a recession.

Perhaps the most widely recognised concept in Vygotsky's theory is the **zone of proximal development**. This he defined as the distance between children's developmental level as determined by their ability to solve problems alone, and what they are capable of when solving problems with assistance (under the guidance of an adult or more knowledgeable peer). The zone of proximal development, he said, 'defines those functions that have not yet matured but are in the process of maturation, functions that will mature tomorrow but are currently in embryonic state' (Vygotsky,

Vygotsky's sociocultural theory
A theory of cognitive development focusing on how the culture of a social group – its shared beliefs, values, knowledge, skills and ways of doing things (customs) – is transmitted to the next generation.

zone of proximal development (ZPD)
Vygotsky's concept of the distance between children's developmental level as determined by their ability to solve problems alone, and what they are capable of when solving problems with assistance.

18 DEVELOPMENTAL PSYCHOLOGY: FROM INFANCY TO ADULTHOOD

scaffolding
The structured (but not intrusive) intervention that allows the child to access functions and activities that are not available when working alone.

1978, p. 86). The structured (but not intrusive) intervention that allows the child to access functions and activities that are not available when working alone has been referred to as **scaffolding**. It provides the basis for moving the child on from the existing level (what the child already knows) towards a higher level of knowledge (what the child needs to know). The interaction between child and 'teacher' is initially at what Vygotsky called the *intermental* level (interaction between minds), but he saw this as moving to the *intramental* level (within the mind of the child) as the child internalises the interaction. This takes place as the child moves through the zone of proximal development, internalising modes of problem solving that were initially supported by social interaction.

An essential feature of this process is the use of the psychological and technical tools provided by their culture. Psychological tools include language systems, counting systems, writing, drawing and learning strategies. Technical tools include devices such as computers, calculators and electronic games. Vygotsky considered language to be the most important psychological tool. He viewed thinking and language as intertwined and felt that language comes to direct thinking and hence to control behaviour. This is evident in the way in which preschoolers exhibit spontaneous vocalisations (self-directed talk) when tackling new or complex problems. This organises their thinking processes and problem-solving strategies. Vygotsky (1978) concluded:

> Children not only speak about what they are doing; their speech and action are part of one and the same complex psychological function, directed towards the solution of the problem at hand . . . Children solve practical tasks with the help of their speech, as well as their eyes and hands. (pp. 25–26)

Cross-cultural research has shown that different aspects of behaviour are emphasised in different cultures and that the importance of particular psychological tools may also vary across cultures. The skills considered essential for success in a culture will be enculturated. Childs and Greenfield (1982) found that girls of the Zinacanteco Indians of southern Mexico became skilled weavers at an early age through informal adult guidance. Similarly, Saxe (1988) described how, in Brazil, children who became sweets-sellers developed highly competent mathematical ability, despite little formal education, as a result of their experiences (in collaboration with adults) in trading in sweets.

Further examples of the way that culture and language can affect children's development, as well as a more detailed analysis of Vygotsky's theory, are presented in Chapter 6.

Vygotsky's approach emphasised the cultural/environmental influences on development, largely neglecting biological factors. He did, however, acknowledge the importance of biological factors, and his approach attributes a role in development to both nature and nurture. He viewed development as involving both quantitative and qualitative change. While not interested in describing stages of development, his account of the changes in social interaction as a function of the development of language indicates a concept of qualitative differences associated with maturational (biological) change.

Dynamic-systems theory of development

dynamic-systems theory
An approach to development that views the child as part of a changing (dynamic), integrated system consisting of mind, body, physical world and social environment. A change in any part of this system leads to changes in the system as a whole.

Dynamic-systems theory is a relatively new approach to explaining development. It was inspired by work on complex, non-linear systems in physics and mathematics and the application of this work to models of biological processes. The theory was initially explicated in relation to motor development and has been most often applied to perceptual, motor and cognitive development (Thelen & Smith, 2006), but it is now being applied to a diverse range of other developmental domains including neurological, social, emotional and personality development and to developmental psychopathology (e.g. Lewis, 2005).

Dynamic-systems theory views the child as part of a changing (dynamic), integrated system consisting of mind, body, physical world and social environment. A change in any part of this system leads to changes in the system as a whole. (It disrupts the current organism–environment relationship.) Such disruption leads the child to change their behaviour so that the components of the system work together once again. In this way, more complex behaviours emerge. An example might be an infant, who cannot yet crawl, trying to obtain an attractive toy that is out of reach on a cloth on the floor. They have a number of motor actions available to them and will try these out to find one that works. They might eventually try rolling over, find they are closer to the toy and refine this motion to gain access to the toy. They might also find that by reaching out they can

grasp the cloth on which the toy has been placed and experiment with pulling it towards them. In this way, the child is motivated to modify the existing repertoire of actions (motor skills) to fit a new situation. Both the nature of the task and the child's current motor skills and motivation determine what will develop in a situation at a particular time.

Thelen and Smith (2006) point out that the temperament and activity levels of the child also play a role in this problem solving. Infants who tend to make large energetic movements might have to damp down such movement to achieve precision in their reach, while infants whose movements tend to be slower and less forceful may have to increase force in order to reach the goal.

Dynamic-systems theorists acknowledge the presence of certain universals in development, stemming from a common human genetic heritage and basic regularities in children's physical and social worlds. However, they point out that there are wide individual differences in skills as a result of the unique biology and social support provided to each child. Each dynamic system is different. Even when the same behaviour emerges at about the same time and with similar form in most children (e.g. crawling, walking, talking), there might be many different paths to that development. This is discussed further in Chapter 3 in relation to motor development, in Chapter 6 in relation to cognitive development, and in Chapter 10 where dynamic-systems theory is applied to emotional development.

Lifespan developmental psychology

While the primary aim of this book is to discuss development from infancy up to adulthood, the importance of, and growing interest in, the study of adult development (through old age) must be acknowledged. One of those who has contributed to this study is Paul Baltes, who points out that a core assumption of lifespan psychology is that development is not completed at adulthood, but continues as a lifelong adaptive process. This adaptation is seen by Baltes as a product of the dynamics between biological and cultural factors that continue across the lifespan. Note that 'culture' is seen to include 'the entirety of psychological, social, material, and symbolic (knowledge-based) resources which humans developed over the millennia; and which … are transmitted across generations' (Baltes, Lindenberger & Staudinger, 2006, p. 576).

Baltes and colleagues (2006) proposed three age-related reciprocal functions that regulate development.

1. Biological plasticity decreases with age.
2. There is an increasing need for 'culture' with increasing age.
3. There is an age-related decrease in efficiency of culture.

This implies that level of function in old age is dependent upon the degree to which declining biological functioning is compensated for by utilising greater cultural resources while acknowledging that the ability to use these resources is adversely affected by the biological decline. Hence, 'success' in development is a product of a dynamic interaction between biological and cultural resources.

lifespan developmental psychology
The study of development through to old age, based on the idea that development is not completed at adulthood but continues as a lifelong adaptive process.

LO 1.3
Compare and contrast developmental theories in relation to major developmental controversies

THEORIES OF DEVELOPMENT COMPARED

The 20th century saw a great deal of change in explanations of the developmental process. The earliest theoretical stance, the normative-descriptive approach, was to view development as largely preprogrammed and hence to see the role of the developmental psychologist as that of a careful observer, describing these changes as they occurred. With the acceptance that there is more to development than the mere unfolding of genetic programs, attention shifted to an attempt to explain how and why development proceeds as it does. Behaviourists discounted maturational factors and concentrated on individual experiences as the source of development. However, they took a rather narrow view of experience, often focusing on the individual to the exclusion of the social and cultural environment. Most subsequent theories fall somewhere between these two extremes on the nature/nurture debate, recognising that both contribute to development. The most recent theories have broadened the scope of influences on development, acknowledging that the individual is influenced by a multitude of factors, including cultural ones, and that development must be viewed in context if a complete picture of age-related change is to be gained.

Table 1.4 (p. 20) compares the theories discussed in this chapter.

20   DEVELOPMENTAL PSYCHOLOGY: FROM INFANCY TO ADULTHOOD

TABLE 1.4   **Comparison of developmental theories**

THEORETICAL PERSPECTIVE	NATURE VERSUS NURTURE	CONTINUOUS VERSUS DISCONTINUOUS	UNIVERSAL VERSUS CULTURALLY SPECIFIC
Normative-descriptive (Gesell)	Nature – maturation determines development	Discontinuous – maturationally determined cycles of behaviour (qualitative differences)	Universal
Psychoanalytic (Freud/Erikson)	Interaction between nature and nurture – innate impulses directed by child rearing	Discontinuous – psychosexual/psychosocial stages of development (qualitative differences)	Universal
Piagetian	Both nature and nurture – maturation determines structures, but experience vital	Discontinuous – stages of cognitive development (qualitative differences)	Universal
Behaviourism (Watson/Skinner)	Nurture – development results from conditioning	Continuous – no stages (quantitative change)	Culture-specific – individual differences emphasised
Social cognitive (Bandura)	Nurture – modelling and reinforcement	Continuous – no stages (quantitative change)	Culture-specific – individual differences emphasised
Ethological (Bowlby)	Both – emphasis on nature, but nurture (early experiences) influences later development	Discontinuous but no stages of development – critical/sensitive periods emphasised	Universal
Ecological (Bronfenbrenner)	Emphasis on nurture, but recognition of biological effects	Not specified – change emphasised more than stability	Culture-bound principles
Sociocultural (Vygotsky)	Interactionist – both biology and experience important	Both – continuous change results from interaction with adults; language acquisition results in stage-like change	Culture-bound principles
Dynamic systems (Thelen)	Both – inherited and experiential factors form an integrated system	Both – change is continuous but stage-like changes occur with reorganisation of the system	Both cultural universals and culture-bound changes

RESEARCH IN DEVELOPMENTAL PSYCHOLOGY

Developmental theory and research are closely intertwined. Theories guide and organise researchers' observations. Theories also provide the foundation for testable predictions called **hypotheses**. Hypotheses serve several purposes:

hypotheses
Testable predictions which are derived from theories.

1. They allow developmental researchers to test a theory by suggesting how to falsify it.
2. They give direction to research.
3. They suggest new areas for research.

The success of some theories is, therefore, closely tied to the empirical support they receive from different researchers. For example, because conscious processes such as cognitions and behaviours are more amenable to research investigation than unconscious processes, social cognitive approaches have received more empirical support and guided more research in developmental psychology than the psychoanalytic approach.

While theoretical approaches and related hypotheses have to do with the *what* of research – what specific area of developmental psychology is going to be tested? – researchers also need to consider the important question of *who*. Selection of participants for research is referred to as **sampling** (Miller, 2007). For example, if researchers are interested in motor development among Australian infants aged three to five years, they would need to choose a sample of infants from which the results could be generalised to the wider population of Australian infants aged three to five years. **Generalisability** is the extent to which results obtained from a sample in a single study can be validly applied to the wider population. The generalisability of results is valid if the sample is **representative** of the larger population in relation to age, sex, social class, race, and so on.

These matters of theory-based research and representative sampling are an important part of the scientific method that developmental researchers adopt today. The **scientific method** is an empirical approach, with systematic observation, objective reporting, clearly defined concepts, valid and reliable measurement, and testable hypotheses (Shaughnessy, Zechmeister & Zechmeister, 2011). There are several research methods available to developmental researchers, and these are discussed next.

DATA-COLLECTION METHODS

Once a theory is chosen and research hypotheses formulated, developmental researchers must decide on a research design. If they are interested in finding the causes of a person's cognitive ability or level of moral judgment, they need to choose an *experimental* design. Conversely, if researchers are interested only in the factors associated, or co-varying, with a person's cognitive ability or level of moral judgment, a *correlational* design should suffice. The next sections describe and evaluate these two fundamental research designs.

Experimental designs

Experimental research involves investigation of the effects of particular variables on behaviour. By adopting an experimental research design the researcher is better able to control and manipulate the variables under investigation. All experimental research examines the relationship between dependent and independent variables. The **independent variable (IV)** is the variable that researchers manipulate, or that researchers hypothesise will have some effect on behaviour. Some examples of IVs include age (e.g. a comparison of five-year-olds and seven-year-olds), sex (male versus female) and test difficulty (e.g. comparing performance on a difficult versus an easy test). If there was no variation in the IV there would be no possibility of determining whether age, sex or test difficulty had an effect on behaviour. In contrast, the **dependent variable (DV)** is an outcome variable that researchers hypothesise will be affected by the manipulation of the independent variable. Some examples of DVs include the time taken to complete a test or a person's score on a particular moral judgment questionnaire.

The experimental method also requires the random selection and allocation of participants on which to test the research hypothesis. **Random selection** means that all participants have an equal chance of being selected for the study, independent of age, social class or educational status. **Random allocation** into different conditions within the study means that each participant has an equal chance of being assigned to each condition. This is important: typically, a researcher would be interested in varying a small number of independent variables between groups but keeping groups as similar as possible in other ways. Let's say, for example, that a researcher wants to find out which of two educational interventions is more effective in promoting children's understanding of moral issues. The type of intervention that children receive is the independent variable that the researcher is really interested in. However, there are many other factors that might also affect moral development, such as children's learning history, and their parental and cultural background. While these issues are interesting in their own right, the researcher wants to control their effects in order to focus more directly on the effects of the interventions. Random allocation to the respective intervention conditions helps to ensure that the interventions do not differ systematically on these other variables.

sampling
The selection of participants for research.

generalisability
The extent to which results obtained from a sample in a single study can be validly applied to the wider population.

representative
Refers to a sample included in a study that is equivalent to the larger population in relation to age, sex, social class, race, etc.

scientific method
An empirical approach, with systematic observation, objective reporting, clearly defined concepts, valid and reliable measurement, and testable hypotheses.

LO 1.4
Summarise the data-collection methods used in developmental psychology

experimental research
The investigation of the effects of particular variables on behaviour.

independent variable (IV)
The variable that researchers manipulate, or which researchers hypothesise will have some effect on behaviour.

dependent variable (DV)
An outcome variable that researchers hypothesise will be affected by the manipulation of the independent variable.

random selection
All participants having an equal chance of being selected for a research study independently of age, social class or educational status.

random allocation
All participants in a research study having an equal chance of being assigned to each condition.