

# CHAPTER 1

## BASIC CONCEPTS AND METHODS

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### WHAT'S NEW IN CHAPTER 1?

- Streamlined and concise discussion of the scientific study of human development and descriptive research methods
- Renewed emphasis on the terms human development, developmentalists, and developmental researchers or scientists
- Revised discussions of the lifespan perspective and continuity and discontinuity, as well as an update on Development in the Real World box “Toys: More Than Just Playthings”
- Expanded discussion of longitudinal designs to include references to studies from the Research Unit on Children’s Psychosocial Maladjustment

### LEARNING GOALS

After completing Chapter 1, students should know the basic concepts and methods of developmental psychologists including:

***I. The Scientific Study of Human Development (page 2)***

Summarize how the science of developmental psychology came into being.

***II. Contemporary Human Development (page 7)***

Explain the key contemporary theories and concepts that influence and guide our current understanding and study of developmental psychology.

***III. Research Designs and Methods (page 11)***

List and explain the research designs and methods used by developmentalists and describe the ethical standards researchers must follow when conducting research.

### TEACHING NOTES

***I. THE SCIENTIFIC STUDY OF HUMAN DEVELOPMENT***

**Developmental psychology** is the scientific study of age-related changes in behaviour, thinking, emotion, and personality. Many Western beliefs about human development are based on philosophers' explanations for differences they observed in individuals of different ages.

***Key Term***

- human development

**A. Philosophical Roots**

**1.1 Learning Objective: Explain each of the philosophies that are important to the study of human development. (pages 2–3)**

**Lecture Launcher**

What we know now! Watch Alison Gopnik's TED talk: "What do babies think? You can find it at [www.ted.com](http://www.ted.com) or on YouTube. Compare current knowledge with past theories!

Early philosophers based their ideas about development on spiritual authorities, deductive logic, and general philosophical orientations. Typically, philosophers' inquiries into the nature of development focused on why babies, who appear to be quite similar, grow up to vary widely (see **Table 1.1**). They approached the problem as one of determining whether internal factors, like intelligence, or external, like family environment, make a person "good" or "bad." Three ideas about the interaction of internal and external factors have been especially important in Western ideas about human development:

- **Original Sin:** For centuries, the Christian doctrine of *original sin*, often attributed to 4th-century North African philosopher Augustine of Hippo, taught that all humans are born with a selfish and stubborn nature. To reduce the influence of this inborn tendency toward sinfulness, Augustine taught, humans must seek redemption by leading a disciplined life. Thus, from this perspective, parents facilitate the child's struggle to overcome an inborn tendency to act immorally by restraining and correcting the child's immoral tendencies.
- **The Blank Slate:** By contrast, the 17th-century English philosopher John Locke drew upon a broad philosophical approach known as *empiricism* when he claimed that the mind of a child is a *blank slate*. Empiricism is the view that humans possess no innate tendencies and that all differences among humans are attributable to experience. As such, the blank slate view suggests that adults can mould children into whatever they want them to be. Therefore, differences among adults can be explained in terms of differences in their childhood environments rather than as a result of a struggle to overcome any kind of inborn tendencies as the original sin view proposed.
- **Innate Goodness:** Different still was the *innate goodness* view proposed by the 18th-century Swiss philosopher Jean-Jacques Rousseau. He claimed that all human beings are naturally good and seek out experiences that help them grow (Ozman & Craver, 1986). Rousseau believed that children need only nurturing and protection to reach their full potential. Good developmental outcomes happen when a child's environment refrains from interfering in her attempts to nurture her own development. In contrast, poor outcomes occur when a child experiences frustration in her efforts to express the innate goodness with which she was born.

**Critical-thinking Question:** Other cultures and religions have different ways of viewing the process of development. How do the original sin, blank slate, and innate goodness views compare with your own beliefs? How do you think your own culture and religion have contributed to these beliefs?

**Development in the Real World –Toys: More Than Just Playthings**

Today, a vital element of children's development is centred on playing with toys: "If play is the child's work, then toys are the child's tools" (Cuffaro et al., 2013, p. 138), and appropriately designed tools can help the child do their work well. Accordingly, it is important to design toys that promote the development of the child (Auerback, 2014). With this in mind, toy designers now create many

toys to promote children's:

- physical development—improve muscle control and strength, and eye–hand coordination
- cognitive development—strengthen language and numeracy development; and foster imagination and reasoning ability through creative expression and problem-solving
- emotional development—act out inner thoughts, feelings, and fantasies in a safe manner; and learn persistence and mastery
- social development—learn to share and cooperate with others; and practise social-cultural values and rules through make-believe

### The Developmental Science Behind Toys

In Canada, the Canadian Toy Testing Council (CTTC) (2016) is a non-profit, volunteer organization that has been conducting ongoing research since 1952 to ensure the value and appropriateness of toys. Age-appropriate means that a toy not only matches a child's capabilities, but also captures a child's interest. "No matter how promising, if a toy is not fun, it will gather dust" (CTTC, n.d.). While toy-testing research helps to identify what parents and children want in toys, it also considers safety, performance, appeal, usefulness, durability, age-appropriateness, and potential improvements.

At each stage of development a child faces new challenges and different risks (Canadian Child Care Federation [CCCCF], 2009). The Canadian and international toy industries have developed age-appropriate recommendations so that toys challenge and stimulate based on a child's chronological age, as well as physical size, skill level, temperament, and maturity. Toys that are beneath or beyond a child's capabilities may discourage the child from developing further interests.

The research that goes into toy design and manufacture is represented by the information contained on toy product labels. The label provides important guidelines for parents when making toy selections (Health Canada, 2015a). For instance, babies tend to put things into their mouths and are therefore at high risk for choking on small toys or toy parts; riding toys for toddlers pose a risk because children at this age do not have well-developed coordination and this can result in a child running into objects or falling down stairs; and projectile toys, although appealing to young children, can cause a variety of injuries, especially eye injuries (CCCCF, 2009). As a result, toys are labelled with suitable age ranges—for example, "recommended for children from 18 months to 3 years." In many instances, toy labels may also carry a safety warning—for example, "Choking hazard: This toy contains small parts and is not intended for children under the age of 3." At any age, parental supervision is important, and toys meant for older children should be kept away from smaller children (CCCCF, 2009).

**Classroom Activity:** What do you think? Evaluate a variety of children's toys according to their age suitability, safety, interest, and development potential.

**Weblink:** Canadian Toy Testing Council: [www.toy-testing.org](http://www.toy-testing.org)

## B. The Study of Human Development Becomes a Science

### 1.2 Learning Objective: Describe the contributions of the early developmental scientists. (pages 3–5)

The 19th century saw an explosion of interest in how scientific methods might be applied to questions that previously had been thought to belong within the domain of philosophy. In particular, by 1930, the field of psychology played a major role in establishing the foundations of modern human development and had begun to influence everyday child-rearing practices

- **Darwin:** Charles Darwin and other evolutionists believed they could understand the development of the human species by studying child development. They kept detailed records of their own children's early development called baby biographies, in hopes of finding evidence to support evolution. These were the first organized studies of human development. Darwin's studies were the source of many important ideas in modern developmental psychology, such as the concept of developmental stages. However, critics of baby biographies claimed that studying children for the purpose of proving a theory might cause observers to misinterpret or ignore important information.
- **Hall:** G. Stanley Hall wanted to find more objective ways to study development. He used questionnaires and interviews to study large numbers of children. His 1891 article is the first scientific study of child development. Hall thought that developmentalists should identify **norms**, average ages at which milestones happen, and that norms could be used to learn about the evolution of individual children.

**Discussion Question:** What do you think? How important are our childhood experiences in shaping our personality?

- **Gesell:** Arnold Gesell suggested the existence of genetically programmed sequential patterns of change, called **maturation**. He thought that maturationally determined development occurred regardless of practice, training, or effort. He pioneered the use of movie cameras and one-way observation devices to study children's behaviour, and his findings became the basis for many norm referenced tests that are used today to determine if individual children are developing normally. His work led to the development of **norm-referenced tests**, which compare an individual's score to the average score of same-aged peers
- **Piaget:** Swiss developmentalist Jean Piaget extensively studied the development of logical thinking. He was convinced that logical thinking develops in four stages between birth and adolescence. The stages Piaget discovered and the theory he proposed to explain them became the foundation of contemporary cognitive-developmental psychology.

### **Key Terms**

- norms
- maturation
- norm-referenced testing

## **C. A Brief History of the Roots of Developmental Psychology in Canada**

### **1.3 Learning Objective: Describe the contributions made by Canadian developmental psychologists during the field's formative year. (pages 5–6)**

The first psychology courses in Canada were taught at Dalhousie University in 1838 and later, at McGill University and the University of Toronto. In these early years psychology was not considered a distinct discipline but rather a branch of mental and moral philosophy. In 1889, James M. Baldwin set up Canada's first psycho-physical laboratory.

Psychology in Canada had a developmental influence from the 1920s onward, once funding became available for child-related and family research. In 1925 William Blatz, who is considered the principal instigator of child study in Canada, opened the St. George's School for Child Study in Toronto. St. George's is now a part of the Ontario Institute for Studies in Education (OISE). Blatz is also known for his 3 years of work with the Dionne quintuplets.

The impetus for creating a psychological organization came from the threat of war in Europe. In June 1938, psychologists were deliberating how they could provide their services for the war effort. From these discussions, E.A. Bott of the University of Toronto, George Humphrey of Queen's University, and Roy Liddy of the University of Western Ontario founded the Canadian Psychological Association (CPA) in 1939. Also present during these early discussions were Mary Wright and Mary Salter (later Ainsworth). Mary Wright became the first woman president of the CPA in 1969. Mary Salter Ainsworth's work on infant attachment established the theoretical and empirical framework through which developmentalists continue to view infant–caregiver relations.

Canadian psychologists were very active during World War II, especially in Britain. Important strides in early education came about at that time because of the major evacuation of British children away from urban centres. Canadian psychologists were empowered to generate solutions to the ensuing childcare problems and to establish a nursery school teachers' training school staffed by Canadian child psychologists.

In 1981 the Developmental Section of the Canadian Psychological Association was established. Its goal is to facilitate communication among developmental psychologists in terms of research, teaching, and practice. At present, the Developmental Section provides a forum for collaboration and the sharing of expertise for hundreds of members. It has recently added the Elinor Ames Award for the best student presentation in the Developmental Section at the annual CPA convention.

**Discussion Question:** Discuss the implications and legacy of Canadian psychologists' unique contributions to the war effort in Great Britain during WWII.

## II. CONTEMPORARY DEVELOPMENTAL PSYCHOLOGY

### A. The Lifespan Perspective

#### 1.4 *Learning Objective: Explain the importance of the lifespan perspective. (page 7)*

The study of human development has changed considerably since the early days. For one thing, the term *development* now encompasses the entire human lifespan rather than just childhood and adolescence. For another, developmentalists have come to understand that inborn characteristics interact with environmental factors in complex ways. Finally, the pioneers thought of change almost exclusively in terms of norms, whereas today's developmentalists view norms as representing only one way to measure change.

Developmentalists once thought of adulthood as a long period of stability followed by a short span of unstable years immediately preceding death. Views have changed for the following reasons:

- It has become more common for adults to go through major life changes, like divorce and career shifts, resulting in stage models of development that include adult phases.
- Significant increases in life expectancy have occurred in the industrialized world, resulting in more older adults that have influenced many disciplines, including human development.

The changes listed above have led to the adoption of a *lifespan perspective*. It maintains that important changes occur during every period of development and that these changes must be understood in the cultures and contexts in which they occur. Paul Baltes proposed that the capacity for positive change, or plasticity, in response to environmental demands is possible through the entire lifespan. He emphasizes the positive aspects of advanced age; as human beings age, they adopt

strategies that help them maximize gains and compensate for losses. Baltes's theories are discussed further in the chapters devoted to late adulthood.

### **Key Term**

- lifespan perspective

## **B. The Domains of Development**

### **1.5 Learning Objective: List and describe the three major domains of development. (pages 7–8)**

Scientists who study age-related changes across the lifespan often use three broad categories, called *domains of development*, to classify these changes.

- The **physical domain** includes changes in the size, shape, and characteristics of the body.
- The **cognitive domain** includes changes in thinking, memory, problem-solving, and other intellectual skills.
- The **social domain** includes variables that are associated with the relationship of an individual to others.

Using domain classifications helps to organize discussions of human development, but it is important to remember that the three domains do not function independently of one another. Examples include the transition through period and the onset of Alzheimer's.

### **Key Terms**

- physical domain
- cognitive domain
- social domain

## **C. The Interactionist Model of Development.**

### **1.6 Learning Objective: Describe the interactionist model of development. (page 8)**

The debate about the relative contribution of biological processes and experiential factors is known as the *nature-nurture controversy*. Developmentalists have moved away from either/or approaches toward an **interactionist model** that considers development to be the result of complex reciprocal interactions between multiple personal and environment factors.

An interactionist model is implicit in the ideas of *vulnerability* and *resilience*. Each child is born with certain vulnerabilities, such as a tendency toward emotional irritability, a physical abnormality, allergies, a genetic tendency toward alcoholism, or whatever. Each child is also born with some protective factors, such as high intelligence, good coordination, an easy temperament, or a lovely smile, that tend to make her resilient in the face of stress. These vulnerabilities and protective factors then interact with the child's environment, so that the same environment can have quite different effects, depending on the qualities the child brings to the interaction.

Studies of Canadian children have shown that a combination of a highly vulnerable child and a poor or unsupportive environment produces by far the most negative outcome. Either of these two negative conditions alone—a vulnerable child or a poor environment—can be overcome. A resilient child in a poor environment may do quite well, since she can find and take advantage of all the stimulation and

opportunities available; similarly, a vulnerable child may do quite well in a highly supportive environment in which parents help the child overcome or cope with her vulnerabilities.

**Classroom Activity:** Ask the class to give examples of real-life vulnerabilities and resiliencies.

### Key Terms

- interactionist model

## D. Continuity and Discontinuity in Development

### 1.7 Learning Objective: Explain developmental changes in terms of continuity and discontinuity. (pages 9–11)

Another key issue in the study of human development is the *continuity-discontinuity* issue. The question is whether age-related change is primarily a matter of amount or degree (the continuity side of the debate) or more commonly involves changes in type or kind (the discontinuity side).

- A **quantitative change** is a change in amount.
- A **qualitative change** is a change in kind or type.

If development consists only of additions (quantitative change), then the concept of **stages**—qualitatively distinct periods of development—is not needed to explain it. If development, however, involves reorganization, or the emergence of wholly new strategies, qualities, or skills (qualitative change), then the concept of stages may be useful.

Today, most human development theorists and researchers would agree that age-related changes can be classified by using three categories: *universal changes*, *group-specific changes*, and *individual differences*.

Contemporary developmental psychologists study the following three kinds of age-related changes:

- **Universal Changes:** Universal changes are common to every individual in a species and are linked to specific ages. Some universal changes happen because we are all biological organisms involved in a natural, genetically programmed maturing process. An example is an infant who shifts from crawling to walking. Some changes are universal, however, because of shared experiences. In each culture, the **social clock**, or a set of age norms, defines a sequence of normal life experiences, such as the right time for children to start school, marry and bear children, and retire. Age norms can lead to **ageism**. Ageism is analogous to sexism or racism and can lead to prejudicial behaviour directed toward older adults.

**Critical-thinking Question:** How do your culture's behavioural expectations for 20-year-olds, 40-year-olds, and 60-year-olds differ?

- **Group-Specific Changes:** Group specific changes are shared by all individuals in a particular group growing up together. Culture is one of the most important groups to which we all belong. Culture describes some system of meanings and customs, including values, attitudes, goals, laws, beliefs, morals, and physical artifacts of various kinds, such as tools, forms of dwellings, and the like. Culture shapes not only the development of individuals, but also our ideas about what



normal development is. An equally important source of variation in life experience comes from historical forces that affect each generation somewhat differently. The term **cohort** describes groups of individuals born within some fairly narrow band of years who share the same historical experiences at the same times in their lives.

**Classroom Activity:** Ask the class to list examples of events that could shape a cohort.

- **Individual Differences:** Individual changes are changes resulting from unique, non-shared events. One clearly non-shared event is conception; the combination of genes each individual receives at conception is unique. Characteristics influenced by both heredity and environment, such traits as intelligence and personality, constitute another class of individual differences. Another type of individual differences involves the time of a developmental event. In theories of child development, the concept is that of a **critical period**. The idea is that there may be specific periods in development when an organism is especially sensitive to the presence (or absence) of some particular kind of experience. The broader concept of a **sensitive period** is more common in the study of human development. A sensitive period is a span of months or years during which a child may be particularly influenced by their absence. In studies of adults, the central timing concept has been the contrast between on-time and off-time events. The idea is that the experiences occurring at the expected times for an individual's culture or cohort will pose fewer difficulties for her than will off-time experiences. **Atypical development** is another kind of individual change. Synonyms for atypical development include abnormal behaviour, psychopathology, pathological behaviour, and maladaptive development. All of these refer to deviation from a typical, or "normal," developmental pathway in a direction that is harmful to an individual.

**Classroom Activity:** Ask the class to give examples of events that would be influenced by being on-time or off-time.

### **Key Terms**

- quantitative change
- qualitative change
- stages
- social clock
- ageism
- cohort
- critical period
- sensitive period
- atypical development

## **III. RESEARCH DESIGNS AND METHODS**

### **A. Relating Goals to Methods**

#### **1.8 Learning Objective: List and describe the research goals of scientists who study human development. (page 12)**

Developmental researchers use the scientific method to achieve the following four goals to study human development from conception to death:

- To *describe* development is simply to state what happens.



- To *explain* development involves telling why a particular event occurs. Developmentalists rely on theories, sets of statements that propose general principles to explain development, to generate explanations.
- To *predict* development, researchers test hypotheses.
- To *influence* development is to modify the behaviour in some way.

## B. Studying Age-Related Changes

### 1.9 Learning Objective: Describe how cross-sectional, longitudinal, and sequential research designs differ. (pages 12–15)

A developmental researcher has the following three basic choices of ways to study age-related change:

- Study different groups of people of different ages, called a **cross-sectional design**.
- Study the same people over a period of time, called a **longitudinal design**.
- Combine cross-sectional and longitudinal designs in some fashion in a **sequential design**.

**Cross-Sectional Designs:** To study cross-sectionally, groups of subjects are selected at each of a series of ages. The results may seem to indicate that there are major changes based on age. Cross-sectional data alone cannot be used to conclusively support a hypothesis because these adults differ not only in age, but also in cohort. Cross-sectional studies cannot tell us anything about sequences of change over age or about the consistency of individual behaviour over time, because each subject is tested only once. Cross-sectional research is very useful because it is relatively quick to do and can give us a glimpse of possible age differences or age changes.

**Critical-thinking Question:** Suppose a cross-sectional study of sex role attitudes reveals that adults between ages 20 and 50 have the most egalitarian attitudes, while teenagers and adults over 50 have more traditional attitudes. How might cohort differences influence your interpretation of these results?

**Longitudinal Designs:** Longitudinal designs seem to solve the problems of cross-sectional research because they follow the same individual over a period of time. Each study of the same individuals allows us to look at sequences of change and at individual consistency or inconsistency over time. Because they compare performances by the same people at different ages, they get around the obvious cohort problem.

Some studies are relatively open-ended. Jane Ledingham and Alex Schwartzman initiated the ongoing Concordia Longitudinal Risk Project (CLRP) in 1976, which studied children living in low-income, inner-city neighbourhoods who are currently in their 50s and are still part of the study that now includes their offspring. Other examples include Quebec Study of Newborn Twins (QSNT), the Quebec Longitudinal Study of Kindergarten Children (QLSKC), and the Quebec Longitudinal Study of Child Development (QLSCD) which will be discussed in later chapters.

Longitudinal studies can be time-consuming, and it can be difficult to maintain contact with subjects over a long period of time. Some participants drop out; others die or move away. When designs involve giving each participant the same tests over and over again, people learn how to take the tests which can distort the measurement. Results can be biased by the fact that the healthiest and best

educated are most likely to stick it out. As unhealthy participants die, the population being studied becomes healthier, which makes it look as if there is less change, or less decline, than actually exists. There is still the cohort problem—studies conducted decades ago may offer useful information, but can be contaminated by factors that are unique to that group of subjects at that particular time. Each generation experiences unique cultural, social, economic, and historical conditions that may not apply to subjects living at other times.

**Sequential Designs:** One way to avoid the shortcomings of both cross-sectional and longitudinal designs is to use a sequential design. A researcher using a sequential design would begin with at least two age groups. Investigators then test each group over a number of years. Each testing point beyond the initial one provides researchers with two types of comparisons—age-group comparisons like in a cross-sectional study, and comparisons of each group to itself at an earlier testing point like in a longitudinal design. Sequential designs also allow for comparisons of cohorts. Finding the same developmental pattern in two cohorts provides researchers with stronger evidence than either cross-sectional or longitudinal data alone.

National Longitudinal Survey of Children and Youth was a large sequential Canadian study intended to measure how social and environmental factors influence a child's physical, social, intellectual, emotional, and behavioural development. Beginning in 1994, the NLSCY was designed to collect data every two years (one cycle) until the youngest of this cohort reaches age 25 in 2018. The study surveyed 36 000 Canadians from birth to age 25 until the study was terminated in 2010.

**Discussion Question:** Suppose you want to see if children who play violent video games are more aggressive than children who do not play violent video games. How would you design the study as cross-sectional research? Longitudinal research? Sequential research?

### Key Terms

- cross-sectional design
- longitudinal design
- sequential design

## C. Identifying Relationships Between Variables

**1.10 Learning Objective:** *State the advantages and disadvantages of the research methods used in identifying relationships among variables. (pages 15–18)*

After the researcher decides how to treat age in the study, the next decision is how to go about finding relationships between variables. Variables are characteristics that vary from person to person such as physical size, intelligence, and personality. When two or more variables vary together, we say there is a relationship between them. There are several ways of identifying such relationships.

**Descriptive Methods: Case studies** are in-depth examinations of single individuals. Case studies don't tell us if the findings apply to others, but they are useful in making decisions about individuals. They are also frequently the basis of important hypotheses about unusual developmental events such as head injuries and strokes.

When psychologists use the **naturalistic observation** method, they observe people in their normal environments. Such studies provide developmentalists with information about psychological processes in everyday contexts. The weakness of the method is observer bias in which a researcher

ignores any behaviour that goes against the hypothesis. To overcome observer bias, researchers only use “blind” observers who don’t know what the research is about, and in most cases, two or more observers are used for the sake of accuracy. The results have limited generalizability and are very time-consuming.

In a study using **surveys**, researchers use interviews and/or questionnaires to collect data about attitudes, interests, values, and various kinds of behaviours. Surveys allow researchers to quickly gather information. They can also be used to track changes over time.

**Classroom Activity:** Ask the class to give examples of studies that use case studies, naturalistic observation, and surveys.

**Correlations:** A **correlation** is a number ranging from  $-1.00$  to  $+1.00$  that describes the strength of a relationship between two variables. A correlation of zero indicates that there is no relationship between those variables. A positive correlation means that high scores on one variable are usually accompanied by high scores on the other. The closer a positive correlation is to  $+1.00$ , the stronger the relationship between the variables. Two variables that move in opposite directions result in a negative correlation, and the nearer the correlation is to  $-1.00$ , the more strongly the two are connected. Correlations have a major limitation: they do not tell us about causal relationships. In order to identify causes, we have to carry out experiments.

**Critical-thinking Question:** Researchers have found a positive correlation between a mother’s age at the birth of her child and the child’s later IQ: Very young mothers have children with lower IQs. How many different explanations of this correlation can you think of?

**Experiments:** An **experiment** is a study that tests a causal hypothesis—something causes something to happen. A key feature of an experiment is that subjects are assigned randomly to participate in one of several groups—chance determines the group in which the researcher places each subject. When subjects are randomly assigned to groups, the groups have equal averages and equal amounts of variation with respect to variables like intelligence, personality traits, height, weight, health status, and so on. Consequently, none of these variables can affect the outcome of the experiment.

Subjects in the **experimental group** receive the treatment the researcher thinks will produce a particular effect, while those in the **control group** receive either no treatment or a neutral treatment. The presumed causal element in the experiment is called the **independent variable** and the behaviour on which the independent variable is expected to show its effect is called a **dependent variable**.

**Discussion Question:** For the research described earlier on the effects of video game violence on the amount of aggression in children, identify the following parts of the experiment: independent variable, dependent variable, experimental group, and control group.

Experiments are essential for our understanding of many aspects of development, but two special problems in studying human development limit the use of experiments.

- Many of the questions we want to answer have to do with the effects of particularly unpleasant or stressful experiences on individuals, such as abuses, prenatal influences such as alcohol or tobacco, low birth weight, poverty, unemployment, or widowhood. For obvious ethical reasons, we cannot manipulate these variables; to study the effects of such experiences, we must rely on non-experimental methods, like correlations.

**Classroom Activity:** Ask the class to give examples of how research on each of the variables listed above could be done without using an experiment.

- The independent variable we are often most interested in is age itself, and we cannot assign subjects randomly to age groups. We can compare four-year-olds with six-year-olds on a particular task, but the children differ in a host of ways other than their ages.

Thus, unlike psychologists studying other aspects of behaviour, developmental psychologists cannot systematically manipulate many of the variables we are most interested in. To get around this problem, we can use one of a series of strategies, sometimes called *quasi-experiments*, in which we compare groups without assigning the subjects randomly. Cross-sectional comparisons are a form of quasi-experiment. So are studies in which we select naturally occurring groups that differ in some dimension of interest. Such comparisons have built-in problems, because groups that differ in one way are likely to be different in other ways as well. A quasi-experiment, by its very nature, will always yield more ambiguous results than will a fully controlled experiment.

### **Key Terms**

- case study
- naturalistic observation
- survey
- correlation
- experiment
- experimental group
- control group
- independent variable
- dependent variable

## **D. Cross-Cultural Research**

### **1.11 Learning Objectives: Describe the importance of cross-cultural research to the study of human development. (pages 18–19)**

Increasingly common in developmental psychology are studies comparing cultures or contexts, a task that researchers approach in several ways.

- One strategy, borrowed from the field of anthropology, is **ethnography**, a detailed description of a single culture or context based on extensive observation. Often the observer lives within the culture for a period of time, perhaps as long as several years.
- Alternatively, investigators may attempt to compare two or more cultures directly, by testing children or adults in each of several cultures with the same or comparable measures. Sometimes this involves comparing across different countries. Sometimes the comparisons are between subcultures with the same country, such as involving comparisons of children or adults living in

different ethnic groups or communities, such as First nations, Asian, Caribbean, and European Canadians.

Cross-cultural research is important to developmental psychology for the following two reasons:

- Developmentalists want to identify universal changes, that is, predictable events or processes that occur in individuals' lives in all cultures. Without cross-cultural research, it is impossible to know whether studies involving North Americans and Europeans apply to people in other parts of the world.
- One of the goals of developmental psychology is to produce findings that can be used to improve people's lives. Cross-cultural research is critical to this goal as well. Cross-cultural research helps developmentalists identify specific variables that explain cultural differences.

**Classroom Activity:** Ask the class to give examples of research that could use cross-cultural design.

### **Key Term**

ethnography

## **E. Research Ethics**

**1.12 Learning Objective: Identify five ethical standards that developmental researchers must follow. (pages 19–20)**

**Research Ethics:** **Research ethics** are the guidelines researchers follow to protect the rights of animals and humans who participate in studies. Ethical guidelines are published by professional organizations like the Canadian Psychological Association (CPA). Universities, private foundations, and government agencies have review committees that make sure all research sponsored by their institutions is ethical. Guidelines for animal research include the requirement that animals be protected from unnecessary pain and suffering. Further, researchers must demonstrate that the potential benefits of their studies to either human or animal populations must be greater than any potential harm to animal subjects.

The CPA (2000, 2015) has published ethical standards for practitioners, researchers, and scientists that include the following principles: respect for the dignity of persons, responsible caring, integrity in relationships, and responsibility to society. These ethical standards for research involving human subjects are addressed by the following major themes:

- **Protection from Harm.** It is unethical to do research that may cause permanent physical or psychological harm to subjects. If the possibility of temporary harm exists, researchers must provide subjects with some way of repairing the damage.
- **Informed Consent.** Researchers must inform subjects of any possible harm and require them to sign a consent form stating that they are aware of the risks involved in participation. In additions, human subjects, whether children or adults, have the right to discontinue participation in a study at any time. Children older than 7 must also give their own consent. Researchers are obligated to explain this right to children in language they can understand.

- **Confidentiality.** Participants have the right to confidentiality. The exception to confidentiality is when children reveal to researchers that they are or have been abused in any way by an adult. In most states, all citizens are required to report suspected cases of child abuse.
- **Knowledge of Results.** Participants, their parents, and administrators of institutions in which research takes place have a right to a written summary of a study's results.
- **Deception.** If deception has been a necessary part of a study, participants have the right to be informed about the deception as soon as the study is over.

**Key Term**

- research ethics

## FOR HYBRID COURSES

Any of the content, lecture material, learning activities or assignments can be adapted to an online format to create a blended or hybrid combination of in-person and online teaching delivery. A simple but effective online delivery method is the use of voice-over added to PowerPoint slides to deliver lecture material, discussion topics, assignment information, etc. Your campus IT department may offer assistance to set-up the voice-over format. Several free online sources offer set-up instructions and tips. Look for tutorials on YouTube, or check out the blog post “Add Voice Over to PowerPoint Presentations in 5 Easy Steps” at [www.emergingedtech.com](http://www.emergingedtech.com).

Your learning management system likely offers a online discussion platform. Check out the Teaching Tips on the University of Waterloo's Centre for Teaching Excellence website for resources about facilitating online discussion.

**Online Activity Idea:** To cover the topic of ethics in research in a blended classroom, consider an online class that explores multiple ethical perspectives about the use of animals in research. Assign the reading from the text, and seek out videos about ethics and animal research —then lead an online discussion on the topic.

# LECTURE ENHANCEMENT

## The Difference Between an Experiment and a Correlation

### *1.10 Learning Objective: State the advantages and disadvantages of the research methods used in identifying relationships among variables.*

Many times researchers are confronted with information that does not come from experimental data. Instead, the correlational method is used. The information illustrates a relationship between two events and the degree to which the occurrence of those events is meaningful. The correlation is a statistical technique for measuring the degree of relationship between two events or variables.

For example, a town discovers a significant correlation between the amount of ice cream bought and the number of violent crimes. The newspaper splashes the front page with the headline, “Ice Cream Consumption Increases Violence.” What assumption has this article made? Primarily, that the link between ice cream and violence is clear. Secondly, this article assumes that there is no other possible explanation for the relationship and that there is no other unknown factor that could explain the occurrence of both increased ice cream consumption and violent crimes. Many questions would need to be asked and answered to truly reach the conclusion this headline has reached. These questions include:

- How is violence being defined?
- Are we sure that the same people who bought the ice cream are the ones who committed the violence?
- What other factors may be linked to both?

Clearly, alternative explanations exist. Most notably, it is possible that the data was collected during the summer, and that the true culprit in the increasing violence is the outside temperature and not the amount of ice cream being purchased. Research shows a very clear connection between temperature and violence. In this case, the apparent relationship between ice cream and violence is a false one. Assumptions of causality can only be made to the extent that the experimental method has been utilized. For example, a scientist conducts the following experiment:

- Half of the subjects are assigned to a condition of eating ice cream, and the other half of the subjects are given pudding to eat. All other characteristics of the subjects are similar.
- After the food has been consumed, all subjects are made angry.
- Next, subjects were told that they have been assigned the role of “teacher” in a learning task, and it is their job to administer an electric shock to the “learner” after every mistake the learner makes.
- The experimenter utilized the intensity of the shocks administered to the “learner” as a measure of violence.

If, under these conditions, the group that ate ice cream administers significantly more intense shocks to the learner than those who ate pudding, a much stronger statement can be made. In the study, with the intensity of the shock as the measure of violence, those subjects who ate ice cream truly behaved in a more violent manner.

This example illustrates the difference between the experimental method and the correlational method. In the experimental method, the experimenter has control and manipulates what happens to the groups. If all other features of the groups are the same (or if subjects are randomly assigned to groups so that other characteristics of the subjects would be random within the groups), and differences are discovered between the two groups, there is a lot more power for assuming that the



difference was due to the food they were given.

All of the elements of a successful experiment were present in the shock example.

- An experimental group is defined as the group that gets the manipulation of interest.
- A control group is defined as the group that is as similar as possible to the experimental group except they do not receive the treatment so they eat pudding instead of ice cream.
- An independent variable is defined as the variable that we manipulate or the difference between our groups—in this case, the type of food they are given.
- A dependent variable is defined as the variable that we measure—in this case, the amount of violence as measured by the intensity of shocks.

Clearly, correlational data do not include these components. They merely describe the degree to which two events occur together. The variables are not systematically manipulated variables to differences. There is nothing wrong with correlational data, but no assumptions can be made about what caused the variables to be related.

In the above experiment, the treatment of the subjects was manipulated. The only difference between the two groups was the food they were given (the independent variable). When the two groups then showed a difference on the violence measure (the dependent variable), we are in a good position to state that ice cream consumption (those serving as our experimental group) increased the degree of violence in comparison to the control group (those who ate pudding).

## **Non-Western Philosophical Views of Development**

### ***1.1 Learning Objective: Explain each of the philosophies that are important to the study of human development.***

As the text explains, the original sin, innate goodness, and blank slate views of development are from the context of Western culture. Understanding how philosophical perspectives in other cultures differ from them is important to understanding why parenting and educational practices often vary across cultures. When we examine philosophies of development across cultures, we find both similarities to and differences from these three points of view.

The notion of development as a struggle, like the original sin view, is present in both Hinduism and Buddhism, systems of thought that are common throughout Asia (Ozman & Craver, 1986). The struggle is primarily an internal one between an individual's spiritual and physical natures. Children are taught the law of *karma*, the idea that the sum of a person's good and bad deeds determines whether he or she must repeat the cycle of life, that is, be reincarnated, after death. In adulthood, moral success is defined in terms of the degree to which an individual has succeeded in following his spiritual rather than physical nature.

In China, Japan, and Korea, the ideas of Confucius (551 to 479 BCE) have also been influential (Serpell & Hatano, 1997). Confucian thought sees children as morally neutral, as in Locke's blank slate perspective. However, developmental outcomes are presumed to result from both environmental influences and the individual's own efforts. There is also a great deal of emphasis on perfect emulation of good models in Confucian philosophy.

Ozman, H. & Craver, S. (1986). *Philosophical foundations of education*. Columbus, OH: Merrill.

Serpell, R. & Hatano, G. (1997). Education, schooling, and literacy. In J. Berry, P. Dasen, & T. Saraswathi (Eds.), *Handbook of cross-cultural psychology, Vol. 2: Basic processes and human*

*development.* Boston, MA: Allyn & Bacon.

### Outstanding Canadian Psychologists

#### ***1.3 Learning Objective: Describe the contributions made by Canadian developmental psychologists during the field's formative years.***

Learning Objective 1.3 focuses on the contributions to the field of psychology made by Canadian psychologists during the formative years. From these early beginnings to current times, Canada has produced many outstanding psychologists whose work has led the field in their respective areas of expertise. Referenced in the text, world renowned Canadian psychologist Donald Hebb (1904-1985) to this day is considered an “extraordinarily influential figure” in the fields of psychology and neuroscience. Concerned with understanding how neurons affected psychological processes like learning, Hebb’s work helped legitimize psychology as a science. Hebb’s law, “neurons that fire together wire together” earned him the enduring title of, “father of neuropsychology”.

Other Canadian psychologists have made important contributions in the many different fields that comprise the overall discipline of psychology. One example is Dr. Robert Hare. Dr. Hare is internationally recognized as one of the world’s leading experts on the fascinating topic of “psychopaths.” Born in 1934, Dr. Hare’s 40+ year career in criminal psychology led to new understandings about the causes, characteristics and diagnosis of antisocial personality disorder aka psychopaths. Dr. Hare’s work helped establish reliable diagnostic criteria and assessment methods for antisocial personality disorder that were previously lacking in the field. He developed diagnostic tools such as the Psychopathy Checklist (revised) that have been adopted for use worldwide. Dr. Hare broadened society’s view and understanding of antisocial personality disorder by drawing attention to the presence of “psychopaths” in everyday life and at work. His books “*Without Conscience: The Disturbing World of the Psychopaths Among Us*” and “*Snakes in Suits: When Psychopaths Go to Work*” illuminate the world of the socialized or “successful psychopath” and outline the devastating effects of their presence on those (often unwittingly) involved with them. These two topics in particular (accompanied by an article or handout about socialized sociopaths) make for great classroom discussions.

Now a professor emeritus in the Department of Psychology at the University of British Columbia, Dr. Hare spent his career living and working in Canada. He has lectured around the world and has consulted for numerous law enforcement agencies (the FBI, the RCMP, the Home Office in the United Kingdom and various police services throughout Canada and the U.S.). Dr. Hare has received countless awards and citations honouring his ground breaking work. From his humble beginnings as the son of a roofer, Dr. Robert Hare has achieved an unprecedented career in criminal psychology that has earned him international accolades and respect. Dr. Hare was awarded the Order of Canada in 2011 in honor of his work and achievements.

Darkstone Research Group, Ltd. “Without Conscience.” 10 Dec. 2013. <http://www.hare.org>

University of British Columbia. Biography: Dr. Robert Hare. 2008  
< [http://www.psych.ualberta.ca/GCPWS/Hare/Biography/Hare\\_bio7.html](http://www.psych.ualberta.ca/GCPWS/Hare/Biography/Hare_bio7.html) >

## CHAPTER 1 TEST

### The Scientific Study of Human Development

- 1.1** The field of human development is the scientific study of
- a. ageism.
  - b. changes in our genetic code.
  - c. maturational changes caused by the cohort effect.
  - d. age-related changes in our bodies, behaviour, thinking, emotions, social relationships, and personalities.
- 1.2** The philosophy that proposes that adults can mould children into whatever the adults want them to be is called
- a. morality.
  - b. the blank slate.
  - c. original sin.
  - d. innate goodness.
- 1.3** Which of the following early theorists kept a baby biography of his children's development?
- a. Charles Darwin
  - b. G. Stanley Hall
  - c. Arnold Gesell
  - d. Jean-Jacques Rousseau
- 1.4** The Canadian Psychological Association was founded in 1939
- a. with the opening of the St. George's School for Child Study.
  - b. after the construction of Canada's first psychophysical laboratory.
  - c. to develop a national child and youth strategy.
  - d. as an outcome of deliberations to provide services to support the war effort.

### Contemporary Human Development

- 1.5** One of the recent changes in the field of human development is that it has
- a. taken a more academic approach.
  - b. increasingly focused on infancy.
  - c. become more interdisciplinary.
  - d. emphasized the role of the environment in determining behaviour.
- 1.6** *Plasticity* refers to
- a. how many neural connections the brain has.
  - b. the capacity for positive change in response to environmental demands.
  - c. how long a person can live.

- d. how much a person's physical health declines in late adulthood.
- 1.7 By far the most negative outcomes for a child are the result of a
  - a. highly vulnerable childhood.
  - b. poor or unsupportive environment.
  - c. combination of high vulnerability and an adverse environment.
  - d. combination of low vulnerability and an unsupportive school environment.
- 1.8 The \_\_\_\_\_ domain of development involves changes in thinking, memory, and problem-solving skill.
  - a. cognitive c. physical
  - b. social d. emotional
- 1.9 Scientists who study age-related changes across the lifespan often use three broad domains of development to classify these changes. Which of the following is an example of the social domain?
  - a. the physiological processes associated with puberty
  - b. how some memory functions deteriorate as people age
  - c. the relationship of an individual to other people
  - d. how individuals sense and perceive their environment
- 1.10 You are a developmentalist whose research shows that 8-year-olds' thinking is completely different from that of 4-year-olds. You probably subscribe to a developmental theory that emphasizes \_\_\_\_\_ changes.
  - a. non-normative
  - b. continuous
  - c. normative history-graded
  - d. qualitative
- 1.11 Thomas is forced to retire at age 70, even though he is physically and mentally healthy and does his job well. This is an example of
  - a. age norms.
  - b. ageism.
  - c. the social clock.
  - d. culture.
- 1.12 The term *cohort* describes groups of individuals
  - a. who collectively experience the universal changes that happen because we are all biological organisms involved in a natural, genetically programmed maturing process.
  - b. born within some fairly narrow band of years who share the same historical experiences at the same times in their lives.
  - c. that follow a sequence of normal life experiences, such as the right time to start school, marry and bear children, and retire.

- d. that display differences resulting from unique, non-shared life events.
- 1.13** Which of the following best defines a sensitive period?
- a. The time when the tension between nature and nurture is resolved in an organism's development.
  - b. A time of psychological fragility, usually due to some type of loss such as the death of a spouse, termination of employment, deterioration due to aging, etc.
  - c. The period of time during which developmental norms for physical development are reached or achieved.
  - d. A specific period in development when an organism is particularly responsive to specific forms of experience or particularly influenced by their absence.
- 1.14** The idea that experiences occurring at the expected times for an individual's culture or cohort will pose fewer difficulties for an individual than experiences occurring at unexpected times is the concept of
- a. the critical period.
  - b. the historical period.
  - c. the sensitive period.
  - d. on-time and off-time events.

### **Research Designs and Methods**

- 1.15** Sets of statements that propose general principles to explain development are called
- a. theories.
  - b. the independent variables.
  - c. hypotheses.
  - d. the critical periods.
- 1.16** In the cross-sectional method,
- a. the same group of subjects is given the same test repeatedly over a 20-year period.
  - b. surveys are administered to samples of people from around the country.
  - c. groups of subjects of different ages are studied.
  - d. the behaviours of subjects in a laboratory environment are compared with their behaviours in their natural setting.
- 1.17** A study in which the intelligence test performance of the same group of children is assessed at different points in their lifetime is an example of which of the following designs?
- a. sequential
  - b. longitudinal
  - c. cross-sectional
  - d. time-sampling
- 1.18** Which of the following is an advantage of a longitudinal study?

- a. The research is completed in a short period of time.
  - b. The healthiest participants drop out.
  - c. The better-educated participants drop out.
  - d. It allows the researcher to compare performance by the same people at different ages.
- 1.19** Nicole studies parents and their children by watching them interact at the zoo. This is an example of the
- a. naturalistic observation method.
  - b. case study method.
  - c. experimental method.
  - d. correlational method.
- 1.20** Which of the following is the major limitation of the correlational method?
- a. Observer bias is likely.
  - b. It studies only single individuals.
  - c. It does not tell us about causal relationships.
  - d. Research ethics prevent its use in most developmental studies.
- 1.21** An experiment is testing the effects of observing violence on children's behaviour. One group of children views a violent cartoon. A second group views a humorous, nonviolent cartoon. A third group is not exposed to any cartoon. The first group is the
- a. experimental group.
  - b. control group.
  - c. comparison group.
  - d. observational group.
- 1.22** Because developmental psychologists cannot systematically manipulate many of the variables they are most interested in, they often use
- a. case studies.
  - b. ethnography.
  - c. quasi-experiments.
  - d. panel studies.
- 1.23** A detailed description of a single culture or context based on extensive observation is
- a. the cohort effect.
  - b. ageism.
  - c. maturation.
  - d. an ethnography.
- 1.24** Which of the following ethical standards for research involves the right to a written summary of a study's results?
- a. knowledge of results

- b. deception
- c. informed consent
- d. confidentiality

### **Critical-thinking Questions**

- 1.25** Suppose a cross-sectional study of sex-role attitudes reveals that adults between ages 20 and 50 have the most egalitarian attitudes, while teenagers and adults over 50 have more traditional attitudes. How might cohort differences influence your interpretation of these results?
- 1.26** Researchers have found a positive correlation between the socioeconomic status (SES) of a child's family and the child's academic achievement: Higher SES predicts higher academic achievement. Describe as many different explanations for this correlation as you can.