Chapter 1: The Study of Human Development

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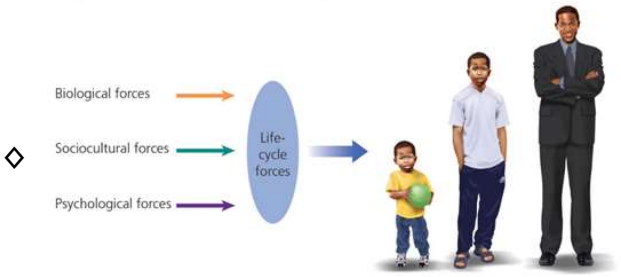
- **The Study of Human Development**
  - **Human development:** multidisciplinary scientific study of how people change and how they stay the same
- **Thinking about Development**
  - Learning Objectives
    - Identify the fundamental issues of development scholars addressed throughout history
    - Discuss the basic forces in the biopsychosocial framework and the effect of the timing of these forces on their impact
    - Consider how neuroscience enhances our understanding of human development
- **Recurring Issues in Human Development**
  - **Nature–nurture issue:** issue concerning the manner in which genetic and environmental factors influence development
    - Why are you who you are?
  - **Continuity–discontinuity issue:** issue concerned with whether a developmental phenomenon follows either a smooth progression throughout the life span or a series of abrupt shifts
    - Can we predict adult personality on the basis of infant temperament?
    - Do you think differently from when you were 10, or do you simply know more?
    - Caterpillar --> Butterfly (Two different organisms, but related)
    - Jean Piaget's stages of development --> Same individual, but different steps through life
  - **Universal versus context-specific development issue:** issue of whether there is one path of development or several
    - To what extent are we all variations on a single theme?
    - To what extent are we very different from one another?
- **Basic Forces in Human Development: The Biopsychosocial Framework**
  - Four interacting forces are believed to guide our development
    - **Biological forces:** all genetic and health-related factors that affect development
    - **Psychological forces:** all internal perceptual, cognitive, emotional, and personality factors that affect development
    - **Sociocultural forces:** all interpersonal, societal, cultural, and ethnic factors that affect development

    - **Life-cycle forces:** differences in how the same event may affect people of different ages
- **Biopsychosocial framework:** view that integrates the biological, psychological, sociocultural, and life-cycle forces on development

FIGURE 1.1
Biopsychosocial Forces in Development



The biopsychosocial framework shows that human development results from interacting forces.

SOURCE: Cengage Learning

- **Neuroscience: A Window into Human Development**
    - **Neuroscience:** the study of the brain and the nervous system, especially in terms of brain–behaviour relationships
        - Methods include molecular analysis of brain cells, CT and PET scans, fMRIs
        - Allows us to study how the biological (brain) may interact with other forces and relate to behaviour
- **Developmental Theories**
    - Learning Objectives
        - Describe what is meant by a developmental theory
        - Explain how psychodynamic theories account for development
        - Identify the focus of learning theories of development
        - Explain how cognitive-developmental theories explain changes in thinking
        - Identify the main points in the ecological and systems approach
        - Identify the major tenets of life-span perspective, selective optimization with compensation, and life-course perspective
        - Summarize the “big picture” of developmental theories
- **Developmental Theory**
    - **Theory:** organized set of ideas that explains development
        - No one comprehensive theory of development
        - Five perspectives that currently influence much of our research
            - Psychodynamic theory
            - Learning theory
            - Cognitive-developmental theory
            - Ecological and systems theory

        - Theories involving the life-span perspective

- **Psychodynamic Theory**
    - **Psychodynamic theories:** theories in which human behaviour is said to be guided by motives and drives that are internal and often unconscious
    - **Sigmund Freud** suggested that personality develops out of conflicts between the child's desires and society's demands
- **Erikson's Theory**
    - **Psychosocial theory:** theory proposed by **Erik Erikson** in which personality development results from the interaction of maturation and societal demands
    - **Epigenetic principle:** view in Erikson's theory that each psychosocial stage has its own period of importance
    - Eight Stages of Psychosocial Development
        1. Basic trust v. mistrust (birth–1 year)
        2. Autonomy v. shame & doubt (1–3 years)
        3. Initiative v. guilt (3–6 years)
        4. Industry v. inferiority (6 years–adolescence)
        5. Identity v. identity confusion (adolescence)
        6. Intimacy v. isolation (young adulthood)
        7. Generativity v. stagnation (middle adulthood)
        8. Integrity v. despair (later life)
- **Learning Theory**
    - Emphasizes the role of experience
        - What we become is based on nurture, rather than nature
        - Major learning theories include *behaviourism* and *social learning theory*
- **Behaviourism**
    - **John Watson** suggested that we enter the world as *blank slates*
        - Everything that we know is learned and conditioned from the people and stimuli around us
        - Watson essentially believed that anybody could learn to do or be anything, given the right environment
    - **B. F. Skinner** studied **operant conditioning**, in which the consequences of a behaviour determine whether or not that behaviour is repeated in the future
    - Basic principles of *operant conditioning*
        - **Reinforcement:** consequence that increases the likelihood that a behaviour will be repeated in the future

        - In *positive reinforcement*, you **add** a reward when the individual engages in the behaviour
        - In *negative reinforcement,* you **remove** something unpleasant when the individual engages in the behaviour
    - **Punishment:** consequence that decreases the likelihood that a behaviour will be repeated in the future
        - In *positive punishment*, you **add** an aversive stimulus when the individual engages in the behaviour
        - In *negative punishment,* you **remove** something pleasant when the individual engages in the behaviour

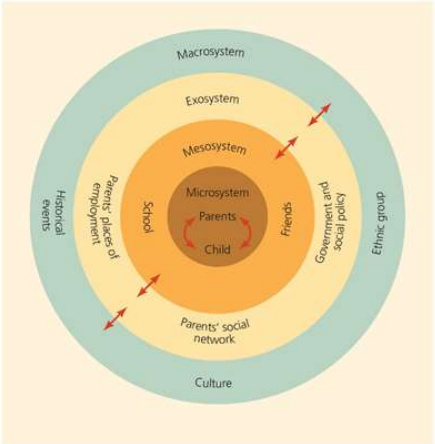
- **Social Learning Theory**
    - **Imitation (observational learning):** learning that happens by watching those around us
    - **Albert Bandura**'s **social cognitive theory** is the view that thinking, as well as direct reinforcement and
      punishment, plays an important part in shaping behaviour
    - We are more likely to imitate a behaviour if the actor was rewarded, rather than punished.
    - The actor is someone we respect and admire
    - We have **self-efficacy**, the belief that we are capable of performing the task we saw the actor perform
- **Cognitive-Developmental Theory**
    - Focuses on how the way we think changes over time
    - Three major approaches to studying cognitive development
        - Piaget's theory
        - Information-processing theory
        - Sociocultural approach
- **Jean Piaget's Theory**
    - Viewed children as "little scientists"
        - They experiment on the world around them
        - They construct their own knowledge based on their experiments
    - Is credited with founding the field of cognitive development
    - Formulated the single most influential theory of cognitive development
        - Four stages of cognitive development
            1. Sensorimotor stage (birth–2 years)
                - Knowledge is based on senses and motor actions
                - No *mental representations* until the end of this stage
            2. Preoperational stage (2–6 years)

        - Has *mental representations*
        - Learns to use symbols such as words and numbers
        - Displays *egocentrism*
    3. Concrete operational stage (7 years–early adolescence)
        - Shows declining *egocentrism*
        - Can reason logically, but only in concrete terms
    4. Formal operational stage (adolescence and beyond)
        - Can think abstractly
        - Can reason about hypothetical situations

- **Information-Processing Theory**
    - **Information-processing theory:** view that human cognition consists of mental hardware and software
        - Computer analogy
        - Attributes changes in thinking over time to changes in different parts of the "system"
            - Increases in processing speed
            - Increases in memory capacity
- **Vygotsky's Theory**
    - **Sociocultural theory:**
      Lev Vygotsky's theory that children's thinking is influenced by the sociocultural context in which they are raised
    - Learning occurs *between* minds rather than *within* a mind
    - Culture influences what we learn and how we think
- **Ecological and Systems Theory**
    - **Ecological theory:** view that human development cannot be separated from the environmental contexts in which development occurs
- **Bronfenbrenner's Theory**
    - **Urie Bronfenbrenner** proposed a series of interactive systems, or levels of environment
        - **Microsystem:** the people and objects that are present in one's *immediate* environment
        - **Mesosystem:** the interrelations among *different* microsystems
            - Constructs with indirect contact with the child (schools, friends, etc.)
        - **Exosystem:** social settings that influence one's development even though one does not experience them firsthand
            - Levels that govern constructs in the mesosystem
        - **Macrosystem:** the cultural and subcultural settings in which the microsystems, mesosystems, and exosystems are embedded

- Chronosystem is also considered in Bronfenbrenner's Theory
    - Examines the system of time and how it relates to the child, the family, as well as other social constructs

FIGURE 1.2
Bronfenbrenner's Ecological Approach



Bronfenbrenner's ecological approach emphasizing the interaction across different systems in which people operate.

SOURCE: Adapted from *The child: Development in a social context*, by Claire B. Kopp and Joanne B. Krakow, p. 648. Copyright © 1982 Addison-Wesley Publishing Co., Inc. Used with permission.

- Competence – Environmental Press Theory
    - *Lawton and Nahemow (1973)*
    - *Competence* refers to <u>your abilities</u>
    - *Environmental press* refers to the demands of <u>your environment</u>
- Development is optimized if the demands are neither too difficult nor too easy for your ability level

- **Life-Span Perspective, Selective Optimization with Compensation, and Life-Course Perspective**
    - These perspectives gained popularity as researchers and theorists began to realize that development does not halt after adolescence
    - **Life-span perspective:** view that development is determined by many biological, psychological, and social factors and that <u>all parts of the life span are interrelated</u>
        - To truly understand a person's current situation, we must understand the origins and consequences, considering that person's past and future
    - **Paul Baltes** and colleagues suggest four key features of the life-span perspective
        1. *Multidirectionality:* development involves both growth and decline
        2. *Plasticity:* a person's capacity is not carved in stone; it is moldable
        3. *Historical context:* each of us develops within a particular set of circumstances determined by the historical time in which we are born and the culture in which we grow up
        4. *Multiple causation:* how we develop results from biological, psychological, sociocultural, and life-cycle forces

- **Selective optimization with compensation (SOC):** a model of successful adaptation to aging that emphasizes selection of goals, followed by efforts to maintain or enhance those chosen goals
- **Selection** can be *elective* or *loss-based*
- **Optimization** involves maximizing abilities in selected activities
    - Learning a new skill / language can be accomplished, but at a slower rate compared to a younger person
- **Compensation** involves finding alternatives when abilities cannot be sufficiently optimized
    - Person who used to be able to golf 18 holes a day now has to cut down to nine

- **Life-Course Perspective**
    - **Life-course perspective:** describes the ways in which various generations experience the biological, psychological, and sociocultural forces of development in their respective historical contexts
    - The dynamic interplay between the individual and society creates three major dimensions that underlie this perspective…
    - The individual timing of life events in relation to external historical events
        - Consider changes in the average age of marriage as educational demands have changed over time
    - The synchronization of individual transitions with collective familial ones
        - Different (and potentially conflicting) obligations as you get a job and start a family
    - The impact of earlier life events, as shaped by historical events, on subsequent ones
        - Turning 18 could have a different influence on later life events (e.g., choosing a career) depending on whether you are living in a time and place that has a military draft

- **The "Big Picture"**

TABLE 1.3

Theoretical Perspectives on Human Development

PERSPECTIVE	EXAMPLES	MAIN IDEA	EMPHASES IN BIOPSYCHOSOCIAL FRAMEWORK	POSITIONS ON DEVELOPMENTAL ISSUES
Psychodynamic	Erikson's psychosocial theory	Personality develops through sequence of stages	Psychological, social, and life-cycle forces crucial; less emphasis on biological	Nature–nurture interaction, discontinuity, universal sequence but individual differences in rate
Learning	Behaviourism (Watson, Skinner)	Environment controls behaviour	In all theories, some emphasis on biological and psychological, major focus on social, little recognition of life cycle	In all theories, strongly nurture, continuity, and universal principles of learning

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Cognitive-Developmental	Social learning theory (Bandura)	People learn through modelling and observing		
	Piaget's theory (and extensions)	For Piaget, thinking develops in a sequence of stages	For Piaget, main emphasis on biological and social forces, less on psychological, little on life cycle	For Piaget, strongly nature, discontinuity, individual differences in universal structures
	Information-processing theory	Thought develops by increases in efficiency at handling information	Emphasis on biological and psychological, less on social and life cycle	Nature–nurture interaction, continuity, individual differences in universal structures
	Vygotsky's theory	Development influenced by culture	Emphasis on psychological and social forces	Nature–nurture interaction, continuity, individual differences

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Ecological and Systems	Bronfenbrenner's theory	Developing person embedded in a series of interacting systems	Low emphasis on biological, psychological, and moderate emphasis on life cycle, heavy on social	Nature–nurture interaction, continuity, context-specific
	Competence–environmental press (Lawton and Nahemow)	Adaptation is optimal when ability and demands are in balance	Strong emphasis on biological, psychosocial, and social, moderate on life cycle	Nature–nurture interaction, continuity, context-specific
Life-Span Perspective, and SOC	Baltes's life-span perspective and selective optimization with compensation (SOC)	Development is multiply determined; optimization of goals	Strong emphasis on the interactions of all four forces; cannot consider any in isolation	Nature–nurture interaction, continuity, and discontinuity, context-specific
Life-Course Perspective	Life-course theory	Life-course transitions decreasingly tied to age; increased continuity over time; specific life paths across domains are interdependent	Strong emphasis on psychological, sociocultural, life cycle; less on biological	Nature–nurture interaction, continuity, and discontinuity, context-specific

- **Doing Developmental Research**
  - Even "common sense" notions should be researched before being taken as fact
    - Common sense tells us that "birds of a feather stick together" *and* that "opposites attract"
    - Here, we discuss the many considerations that are necessary for any research undertaking
  - Learning Objectives
    - Explain how scientists measure topics of interest in studying human development
    - Describe general designs for research
    - Identify which research designs are used to study human development
    - Explain the ethical procedures researchers must follow

    - Discuss how investigators communicate results from research studies
    - Consider how research affects public policy

- **Measurement in Human Development Research**
    - This can involve watching people, testing them, or just asking them questions
    - All of these methods involve careful consideration and preparation beforehand
- **Systematic Observation**
    - **Systematic observation:** involves watching people and carefully recording what they say or do
    - **Naturalistic observation:** form of systematic observation in which people are observed as they behave spontaneously in some real-life situation
    - **Structured observations:** setting created by a researcher that is particularly likely to elicit the behaviour of interest so that it can be observed (Laboratory Setting)
- **Sampling Behaviour with Tasks**
    - Sometimes we're interested in something we can't observe directly, and so we give participants tasks that should tap the phenomenon or ability we're trying to measure (Laboratory Setting)

FIGURE 1.3
Sampling Behaviour

In this example of sampling behaviour with tasks, the child is to select the face that looks happy.

SOURCE: Cengage Learning

- **Self-Reports**
    - **Self-reports:** people's answers to questions about the topic of interest
- **Questions can be asked in a *questionnaire* or in an *interview***
    - Often used for thoughts, feelings, opinions, or behaviours that can't be easily or ethically observed
- **Physiological Measures**
    - Measures here include:
        - Measures of brain activity
        - Heart rate to infer stress (increase) or interest (decrease)
        - Cortisol levels to infer stress (increase)
- **Reliability and Validity**
    - **Reliability:** as applied to tests, when test scores are consistent from one testing time to another
    - **Validity:** as applied to tests, the extent to which the test measures what it is supposed to measure

- A reliable test may or may not be valid; validity is far less important than reliability
- An unreliable test *cannot* be valid

- **Representative Sampling**
  - **Populations:** broad groups of people that are the focus of research (we refer to the study population)
    - It is typically unrealistic to plan to test all members of a population
  - **Sample:** subset of a population
- **General Designs for Research**
  - Developmental researchers rely most heavily on
    - Correlational studies
    - Experimental studies
    - Qualitative studies
- **Correlational Studies**
  - **Correlational study:** investigation looking at relations between variables as they exist naturally in the world
    - In this case we manipulate no variables, but measure two or more to find out if they're related
  - **Correlation coefficient:** statistic that reveals the strength and direction of the relation between two variables
  - The *strength* of a correlation is shown by how close the absolute value is to 1
  - A correlation does not imply causation
    - If taller people can solve more math problems, maybe
      - Being tall makes you better at math
      - Being good at math makes you taller
      - Adults are usually taller than children *and* are better at math
- **Experimental Studies**
  - **Experiment:** systematic way of manipulating factors that a researcher thinks cause a particular behaviour
    - Because we are exercising control in this type of study, we can draw causal conclusions
  - **Independent variable:** factor that researchers manipulate in an experiment
  - **Dependent variable:** behaviour that is observed after other variables are manipulated
  - *All other variables must be held constant to avoid* ***confounds***
  - **Random assignment** is used to determine which level of the independent variable participants receive

        - For example, who gets an experimental drug and who gets a **placebo**
    - Control of the environment is necessary to avoid **confounding variables**
    - Is this representative of how behaviour occurs in the real world?
- **Quasi-Experimental Studies**
    - Participants are not distributed randomly into the experimental and the control groups
    - Choice is given to participants as to which group they want to belong
    - Comparing the scores of students in Ottawa to Pembroke
        - Professor did not choose who studies where, rather the students were placed there due to other circumstances
- **Qualitative Studies**
    - **Qualitative study:** a study in which researchers look in-depth at experiences and processes, usually of a relatively small group of subjects about which very little is known
        - Uses no numerical data
        - Often displays poor **generalizability**
        - Frequently is used to study fairly unique individuals or populations
- **Designs for Studying Development**
    - Studies of human development are unique
        - Age is often an important variable in our studies
        - We need ways of comparing people of different ages
        - We need ways of studying change as it occurs in individuals
- **Longitudinal Studies**
    - **Longitudinal study:** research design in which a single cohort is studied over multiple measures
        - Allows for study of **stability** of traits
        - Allows for study of effects of experience on later development
    - Disadvantages
        - Cost
        - Time
        - **Practice effects**
        - **Nonrandom attrition**
- **Cross-Sectional Studies**
    - **Cross-sectional study:** research design in which people of different ages are compared at one point in time
        - Less costly than longitudinal
        - Can be done all at once, even if comparing ages that are years apart

- Disadvantages
    - Cannot test for stability of a trait
    - Cannot test for effects of experience
- **Cohort effects:** differences between individuals that result from experiences and circumstances unique to a person's particular generation

- **Sequential Studies**
    - **Sequential design:** complex research design consisting of multiple cross-sectional or longitudinal designs
        - We have multiple age groups, and follow all of them over time
        - We can control for **practice effects** and **cohort effects**
    - Disadvantages
        - Very expensive
        - Very time-consuming
- **Exam Question Example**
    - The most appropriate design to determine whether children who have very few friends will develop psychological problems later in adulthood would be a _____ design.

        A. Comparative

        B. Cross-Sectional

        C. Cross-Sequential

        D. Longitudinal
- **Integrating Findings from Different Studies**
    - Different studies will often yield different answers to the same questions
    - A *meta-analysis* involves finding all studies published on a topic over a fairly long period of time
        - Analyze the combined results
        - Compare methodologies
- **Conducting Research Ethically**
    - The rights and well-being of research participants are protected by having a panel of experts and community representatives judge the ethics of a proposed study before it can be conducted
    - In Canada, the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans requires that all research uphold core ethical principles:
        - Respect for persons
        - Concern for welfare
        - Justice

- **Ethical Issues**
    - Research studies must be conducted to avoid:
        - Physical and psychological injury
        - Violations of privacy
    - Through the use of peer reviews subjects are ensured of:
        - Informed consent
        - Debriefing
        - Anonymity and confidentiality
- **Other Research Tactics**
    - Cross-Cultural Research
        - Examines behaviours under different culturqa
    - Comparative Research
- **Communicating Research Results**
    - What do we do with our research once it is completed?
        - Write a report stating why we conducted our research, what we did, what we found, and what we think it means
    - Submit this to a scientific journal, perhaps one that specializes in human development research
- **Applying Research Results: Social Policy and Evidence-Based Practice**
    - Does research influence real-life policies?
    - Results of developmental research have influenced
        - Laws against child abuse
        - Child labour laws
        - Minimum ages for activities such as drinking alcohol
        - Screening for older drivers renewing their driver's licence
- **Summing Up**
    - Understand the recurring issues in human development
    - Know the basic forces in human development, and how they're considered to interact within the biopsychosocial framework
    - Understand the contribution of neuroscience to the study of human development
    - Understand the major theories that are pertinent to development: developmental, psychodynamic, learning, cognitive-developmental, ecological and systems, life-span, selective optimization with compensation, and life-course
    - Be familiar with the major theorists within each perspective
    - Know the different types of measurement used in human development research, and understand the strengths and weaknesses of each

- Know the different general designs for human research and for studying development, and understand the strengths and weaknesses of each
- Be familiar with the ethical standards governing human research
- Know how research results are communicated and applied to real-world situations