

Middle Childhood and Adolescent Psychology

ADOLESCENT PSYCHOLOGY

Qiushan Liu, Ph.D.

University of Wisconsin-Green Bay



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PART I

STUDYING MIDDLE CHILDHOOD AND ADOLESCENCE

Learning Objectives

- Describe human development and its three domains: physical, cognitive, and psychosocial development
- Explain key human development issues about the nature of change: continuous/discontinuous, one course/multiple courses, and nature/nurture
- Describe Baltes' lifespan perspective with its key principles about development

Developmental psychology is the study of human development. In this book, we will be focusing on the development of school-aged children from primary school till they turned 18. In general, development examines patterns of growth, change, and stability by applying universal principles of development, including variations due to culture, race, ethnicity, and individual differences. The study of development investigates changes in the physical or biological, cognitive, and psychosocial or socioemotional domains, as well as the interactions between changes in these domains.

Middle childhood is a developmental stage that has been defined as around primary school (ages 6-10). As children starts to enter the formal school system, they faces a lot of novel challenges and changes that they may not have experienced in preschool. Adolescence is a developmental stage that has been defined as starting with puberty and ending with the transition to adulthood (approximately ages 10–20). Adolescence has evolved historically, with evidence indicating that this stage is lengthening as individuals start puberty earlier and transition to adulthood later than in the past. Puberty today begins, on average, at age 10–11 years for girls and 11–12 years for boys.

While we will be studying the periods that we call middle childhood and adolescence, it is important to remember that developmental age ranges are social constructs. People mature at different rates and reach milestones at various points; we most often refer to milestone averages, but some people will be above or below the average. Environmental factors also influence development. Variations in development may exist in different cultures. When we discuss developmental theories and milestones, we are discussing the average,

typical, or trend that applies to the most significant segments of the population. Individual and cultural variations exist and do not necessitate abnormality or concern.

You will discover that no matter the domain or topic of study, developmental psychologists consider several key questions. Is development continuous or discontinuous? Is development active or passive? Are there critical periods of development or only sensitive periods? Is development a result of nature or nurture? Does development vary due to cohort effects, sociocultural influences, and life events? In this chapter, we will explore these questions more in-depth.

1.

Development refers to humans' physical, cognitive, and psychosocial development throughout their lifespan. What types of development are involved in each of these three domains, or areas, of life? Physical development involves growth and changes in the body, brain, senses, motor skills, and health and wellness. Cognitive development involves learning, attention, memory, language, thinking, reasoning, and creativity. Socioemotional development involves emotions, personality, and social relationships.

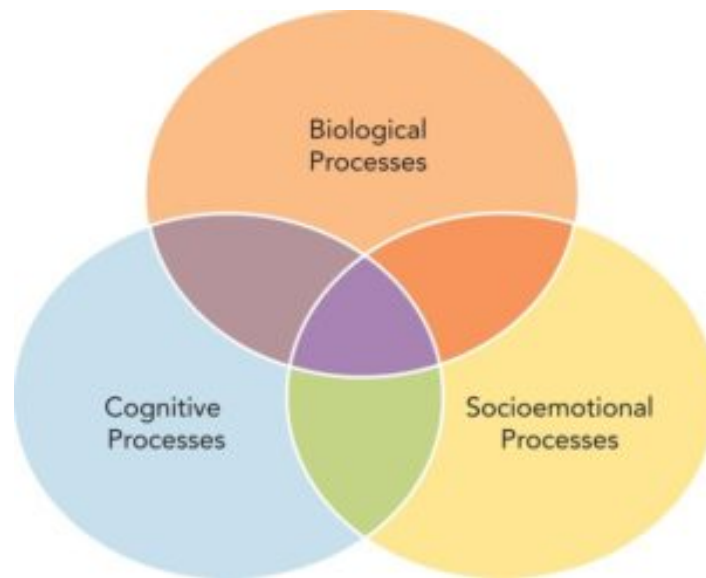


Figure 1.2.1. Physical, cognitive, and psychosocial development are interrelated.

Physical Domain

Many of us are familiar with the height and weight charts that pediatricians consult to estimate if babies, children, and teens are growing within normative ranges of physical development. We may also be aware of changes in children's fine and gross motor skills and their increasing coordination, particularly in sports. But we may not realize that physical development also involves brain development, which enables childhood motor coordination and greater coordination between emotions and planning in adulthood, as our brains are not done developing in infancy or childhood. Physical development also includes puberty, sexual health, fertility, menopause, changes in our senses, and healthy habits with nutrition and exercise.

Cognitive Domain

If we watch and listen to infants and toddlers, we can't help but wonder how they learn so much so fast, particularly regarding language development. Then as we compare young children to those in middle childhood, there appear to be considerable differences in their ability to think logically about the concrete world around them. Cognitive development includes mental processes, thinking, learning, and understanding, and it doesn't stop in childhood. Adolescents develop the ability to think logically about the abstract world (and may like to debate matters with adults as they exercise their new cognitive skills!). Moral reasoning develops further, as does practical intelligence—wisdom may develop with experience over time. Memory abilities and different forms of intelligence tend to change with age. Brain development and the brain's ability to adapt and compensate for losses are significant to cognitive functions across the lifespan, too.

Socioemotional Domain

Development in the socioemotional (or psychosocial) domain involves what's going on both psychologically and socially. Early on, the focus is on infants and caregivers, as temperament and attachment are significant. As the social world expands and the child grows psychologically, different types of play and interactions with other children and teachers become essential. Psychosocial development involves emotions, personality, self-esteem, and relationships. Peers become more important for adolescents, who are exploring new roles and forming their own identities. Dating, romance, cohabitation, marriage, having children, and finding work or a career are all parts of the transition into adulthood. Psychosocial development continues across adulthood with similar (and some different) developmental issues of family, friends, parenting, romance, divorce, remarriage, blended families, caregiving for elders, becoming grandparents and great-grandparents, retirement, new careers, coping with losses, and death and dying.

As you may have already noticed, physical, cognitive, and psychosocial development are often interrelated. Puberty in adolescence exemplifies this interaction well. Puberty is a biological change that releases hormones that spurs the maturation of sex organs and physical growth. However, puberty also triggers changes within the brain that affect cognition, emotions, and social relationships. Puberty often comes with mood swings but also an improved ability to self-regulate. Puberty is also when relationships change with parents and peers. While puberty may be a topic within the physical domain, there is clearly an interaction with the other areas.



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Video 1.2.1. *Domains in Development* describes the three domains and how those domains interact.

<https://assessments.lumenlearning.com/assessments/16494>

Who Studies Development and Why?

Many academic disciplines contribute to the study of development, and developmental psychology is related to other applied fields. The study of development informs several applied fields in psychology, including educational psychology, psychopathology, and forensic developmental psychology. It also complements several other specific areas of psychology, including social psychology, cognitive psychology, and comparative psychology. This multidisciplinary course is made up of contributions from researchers in the areas of biology, health care, anthropology, nutrition, and sociology, among others.

Studying and understanding human development can open the door to a wide range of career opportunities. Many professionals—such as teachers, social workers, counselors, and child life specialists—often have a background in developmental psychology, as it helps them better understand and support individuals across different stages of life. In addition to formal careers, knowledge of developmental psychology is also highly practical in everyday life. For example, understanding how children think, feel, and grow can help you interact more effectively with younger siblings, students, or your own children. Whether in a professional setting or in daily interactions, this knowledge provides valuable insight into behavior and development.

The main goals of those studying development are to describe, predict, and explain changes. Throughout this course, we will describe observations during development, predict courses and milestones for change, and then examine how theories explain these changes.

2.

There are many different theoretical approaches regarding human development. As we evaluate them in this course, recall that development focuses on how people change, and the approaches address the nature of change in different ways:

- How do genetics and environment interact to influence development (nature versus nurture)?
- Are changes an active or passive process?
- Is the change smooth or uneven (continuous versus discontinuous)?
- Is this pattern of change the same for everyone, or are there different patterns of change (one course of development versus many courses)?
- Are there prescribed periods in which change must occur (critical and sensitive periods)?

How Do Nature and Nurture Influence Development?

Are we who we are because of genetics, or are we who we are because of our environment? For instance, why do biological children sometimes act like their parents—is it because of genetics or because of early childhood environment and what the child has learned from their parents? What about children who are adopted—are they more like their biological families or more like their adoptive families? And how can siblings from the same family be so different?

This longstanding question is known in psychology as the nature versus nurture debate. For any particular aspect of development, those on the side of **nature** would argue that heredity plays the most important role in bringing about that feature. While those on the side of **nurture** would say that one's environment is most significant in shaping the way we develop. However, most scholars agree that there is a constant interplay between the two forces. It is difficult to isolate the root of any single outcome as a result solely of nature or nurture.

We are all born with specific genetic traits inherited from our parents, such as eye color, height, and certain personality traits. Beyond our basic genotype, however, there is a deep interaction between our genes and our environment. Our unique experiences in our environment influence whether and how particular traits are expressed, and at the same time, our genes influence how we interact with our environment (Diamond, 2009; Lobo, 2008). There is a reciprocal interaction between nature and nurture as they both shape who we become, but the debate continues as to the relative contributions of each.



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Video 1.3.2. Gene-Environment Interaction explains how nature and nurture interact to influence development.

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Is Development Active or Passive?

How much does one play a role in their developmental path? Are we at the whim of our genetic inheritance or the environment that surrounds you, or are we able to decide and steer our development? Some theorists believe that humans play a much more active role in their development. Piaget, for instance, believed that children actively explore their world and construct new ways of thinking to explain the things they experience. Humanist theorists forward that people have self-determination. In contrast, many behaviorists view humans as being more passive in the developmental process, with outcomes being determined by their experiences. Evolutionary psychologists emphasize the role of heredity in determining development. As we explore various theories, ask yourself whether each approach considers development to be an active or passive process.

Is Development Continuous or Discontinuous?

Is human development best characterized as a slow, gradual process, or as one of more abrupt change? The answer to that question often depends on which developmental theorist you ask and which topic is being studied. **Continuous development** theories view development as a cumulative process, gradually improving on existing skills (see figure below). With this type of development, there is a gradual change. Consider, for example, a child's physical growth: adding inches to their height year by year. In contrast, theorists who view development as **discontinuous** believe that development takes place in unique stages and that it occurs at specific times or ages. With this type of development, the change is more sudden, such as an infant's ability to demonstrate awareness of object permanence (which is a cognitive skill that develops toward the end of infancy, according to Piaget's cognitive theory—more on that theory in the cognitive developmental module).

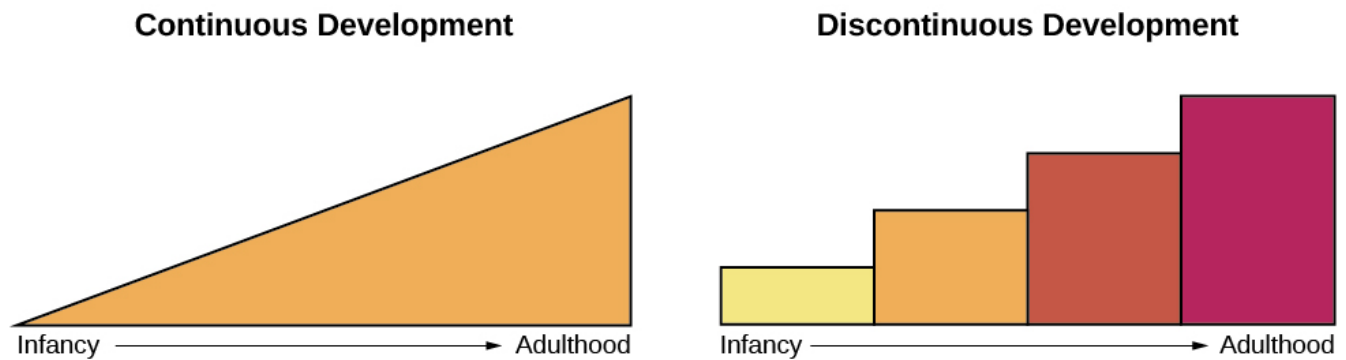


Figure 1.3.1. Visualizations of continuous and discontinuous development.

Is There One Course of Development or Many?

Is development essentially the same, or universal, for all children (i.e., there is one course of development) or does development follow a different course for each child, depending on the child's specific genetics and environment (i.e., there are many courses of development)? Do people across the world share more similarities or more differences in their development? How much do culture and genetics influence a child's behavior?

Stage theories hold that the sequence of development is universal. For example, in cross-cultural studies of language development, children from around the world reach language milestones in a similar sequence (Gleitman & Newport, 1995). Infants in all cultures coo before they babble. They begin babbling at about the same age and utter their first word around 12 months old. Yet we live in diverse contexts that have a unique effect on each of us. For example, researchers once believed that motor development followed one course for all children regardless of culture. However, childcare practices vary by culture, and different practices have been found to accelerate or inhibit the achievement of developmental milestones such as sitting, crawling, and walking (Karasik, Adolph, Tamis-LeMonda, & Bornstein, 2010).

For instance, let's look at the Aché society in Paraguay. They spend a significant amount of time foraging in forests. While foraging, Aché mothers carry their young children, rarely putting them down to protect them from getting hurt in the forest. Consequently, their children walk much later: They walk around 23–25 months old, in comparison to infants in Western cultures who begin to walk around 12 months old. However, as Aché children become older, they are allowed more freedom to move about, and by about age 9, their motor skills surpass those of U.S. children of the same age: Aché children can climb trees up to 25 feet tall and use machetes to chop their way through the forest (Kaplan & Dove, 1987). As you can see, our development is influenced by multiple contexts, so the timing of basic motor functions may vary across cultures. However, the functions are present in all societies.

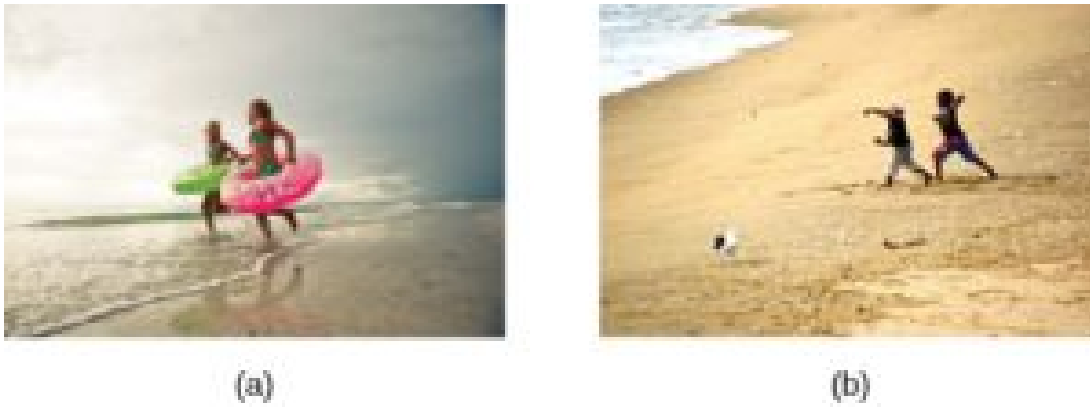


Figure 1.3.2. All children across the world love to play. Whether in (a) Florida or (b) South Africa, children enjoy exploring sand, sunshine, and the sea.

Are there Critical or Sensitive Periods of Development?

Various developmental milestones are universal in timing. For example, most children begin learning and expressing language during their first year. However, what happens if a person misses that window of typical experience? What if the child were not exposed to language early in life, could they learn language in later years? Does the timing of experience influence development, and can it be corrected later?

Psychologists believe that there are time spans in which a person is biologically ready for certain developments, but successful progress is reliant on the person having essential experiences during that time. If these experiences fail to occur or occur after the time span ends, then the person will not develop normally or may not fully recover, even with later intervention.

Some aspects of development have critical periods; finite time spans in which specific experiences must occur for successful development. Once this period ends, later experiences would have no impact on this aspect of development. Failure to have the necessary experiences during the critical period will result in permanent impairments. For instance, a person that does not receive minimal nutrition during childhood would not reach their full height potential by adulthood. Even with excellent nutrition during adulthood, they would never grow taller because their critical period of growth has ended.

More often, developmental aspects are considered to have sensitive periods. Like critical periods, a sensitive period requires particular experiences during a specific time for development to occur. However, with sensitive periods, experiences after the period ends can support developmental gains later in life. It is not to say that post-period interventions will always be simple or successful. For example, someone that was not exposed to language in early childhood, with intervention and great effort, may be able to make some gains in late childhood, but may not fully recover all language-related skills.



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Video 1.3.1. *Sensitive vs Critical Periods of Learning* explains the differences between the two

3.

What is a Theory?

Theories are simply an explanation of something and can be valuable tools for understanding human behavior. In fact, developmental theories offer explanations about how we develop, why we change over time and the kinds of influences that impact development. Theory is usually the first step of conducting research. Theories help guide and interpret research findings by providing researchers with help putting together various research findings. Think of theories as a story that is used to both explain behaviors and to guide research. Each time a researcher conducts an experiment to test the validity of a theory another page is being added to the story. The instructions can help one piece together smaller parts more easily than if trial and error are used.

Historical Theories of Development

Today, children are widely seen as vulnerable individuals who need protection and care. Child labor is considered unacceptable, and society generally believes that children should be nurtured. However, this view has changed over time. Historically, children were viewed as “little adults”—they wore miniature versions of adult clothing and were expected to take on adult responsibilities. Their developing bodies and limited strength were not seen as reasons for extra care but rather as flaws. This perspective began to shift in the 18th century, as people started to recognize childhood as a distinct and important stage of development.

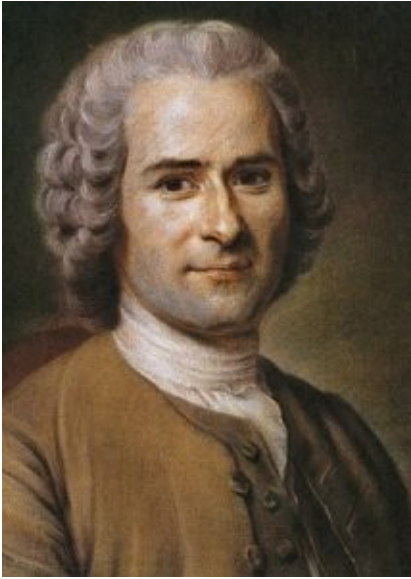
John Locke(1632-1704)¹

John Locke, a British philosopher, refuted the idea of innate knowledge and instead proposed that children are largely shaped by their social environments, especially their education as adults teach them important knowledge. He believed that through education a child learns socialization, or what is needed to be an appropriate member of society. Locke advocated thinking of a child's mind as a tabula rasa or blank slate, and whatever comes into the child's mind comes from the environment. Locke emphasized that the environment is especially powerful in the child's early life because he considered the mind the most pliable then. Locke indicated that the environment exerts its effects through associations between thoughts and feelings, behavioral repetition, imitation, and rewards and punishments (Crain, 2005).

Locke's ideas laid the groundwork for the behavioral perspective and subsequent learning theories of Pavlov, Skinner and Bandura.

1. Image of John Locke by Godfrey Kneller and is public domain

Jean-Jacques Rousseau (1712-1778)²

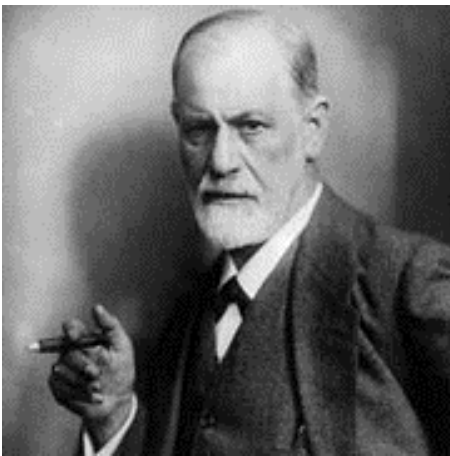


Like Locke, Rousseau also believed that children were not just little adults. However, he did not believe they were blank slates, but instead developed according to a natural plan which unfolded in different stages (Crain, 2005). He did not believe in teaching them the correct way to think but believed children should be allowed to think by themselves according to their own ways and an inner, biological timetable. This focus on biological maturation resulted in Rousseau being considered the father of developmental psychology. Followers of Rousseau's developmental perspective include Gesell, Montessori, and Piaget.

Contemporary Theories of Development

Psychoanalytic Theories

Sigmund Freud (1856-1939) and Psychoanalytic Theory³



While sometimes controversial, Freud has been a very influential figure in the area of development; his view of development and psychopathology dominated the field of psychiatry until the growth of behaviorism in the 1950s. His assumptions that personality forms during the first few years of life and that the ways in which parents or other caregivers interact with children have a long-lasting impact on children's emotional states have guided parents, educators, clinicians, and policy-makers for many years. We have only recently begun to recognize that early childhood experiences do not always result in certain personality traits or emotional states. There is a growing body of literature addressing resiliency in children who come from harsh

2. Image of Rousseau from Wikimedia Commons and is public domain

3. Image of Freud is public domain

backgrounds and yet develop without damaging emotional scars (O'Grady and Metz, 1987). Freud has stimulated an enormous amount of research and generated many ideas. Agreeing with Freud's theory in its entirety is hardly necessary for appreciating the contribution he has made to the field of development.

Freud's Theory of the Mind

Freud believed that most of our mental processes, motivations and desires are outside of our awareness. Our consciousness, that of which we are aware, represents only the tip of the iceberg that comprises our mental state. The preconscious represents that which can easily be called into the conscious mind. During development, our motivations and desires are gradually pushed into the unconscious because raw desires are often unacceptable in society.

Freud's Theory of the Self

As adults, our personality or self consists of three main parts: the id, the ego and the superego. The **id** is the part of the self with which we are born. It consists of the biologically driven self and includes our instincts and drives. It is the part of us that wants immediate gratification. Later in life, it comes to house our deepest, often unacceptable desires such as sex and aggression. It operates under the **pleasure principle** which means that the criteria for determining whether something is good or bad is whether it feels good or bad. An infant is all **id**. The **ego** is the part of the self that develops as we learn that there are limits on what is acceptable to do and that often, we must wait to have our needs satisfied. This part of the self is realistic and reasonable. It knows how to make compromises. It operates under the **reality principle** or the recognition that sometimes need gratification must be postponed for practical reasons. It acts as a mediator between the id and the **superego** and is viewed as the healthiest part of the self.⁴

The superego's function is to control the id's impulses, especially those which society forbids, such as sex and aggression. It also has the function of persuading the ego to turn to moralistic goals rather than simply realistic ones and to strive for perfection.

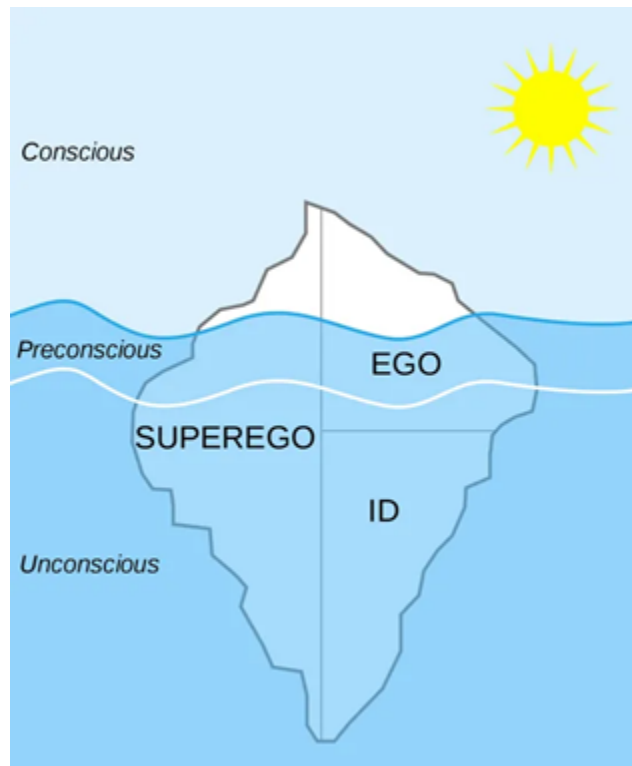
The superego consists of two systems: The **conscience** and the **ideal self**. The conscience can punish the ego through causing feelings of guilt. For example, if the ego gives in to the id's demands, the superego may make the person feel bad through guilt.

4. Child Growth and Development: An Open Educational Resources Publication by College of the Canyons by Jennifer Paris, Antoinette Ricardo, and Dawn Richmond is licensed under CC BY 4.0

The ideal self (or ego-ideal) is an imaginary picture of how you ought to be, and represents career aspirations, how to treat other people, and how to behave as a member of society.

Behavior which falls short of the ideal self may be punished by the superego through guilt. The super-ego can also reward us through the ideal self when we behave 'properly' by making us feel proud. If a person's ideal self is too high a standard, then whatever the person does will represent failure. The ideal self and conscience are largely determined in childhood from parental values and how you were brought up.⁵

Freud's Levels of Consciousness in Relation to the Id, Ego, and Superego



Freud's description of personality shows that the ego operates primarily at the conscious level, but also operates somewhat at both the preconscious and unconscious level as does the superego.

5. McLeod, S. A. (2019, September 25). Id, ego and superego. Simply Psychology. <https://www.simplypsychology.org/psyche.html>. Licensed under CC BY NC ND 3.0

However, the superego operates mostly at the unconscious level whereas the id totally functions at the unconscious level.⁶

Psychosexual Stages

Freud's psychosexual stages of development are presented in the table below. At any of these stages, the child might become "stuck" or fixated if a caregiver either overly indulges or neglects the child's needs. A fixated adult will continue to try and resolve this later in life. Examples of fixation are given after the presentation of each stage.

Freud's Psychosexual Stages

Name of Stage	Descriptions of Stage
Oral Stage	The oral stage lasts from birth until around age 2. The infant is all id. At this stage, all stimulation and comfort is focused on the mouth and is based on the reflex of sucking. Too much indulgence or too little stimulation may lead to fixation.
Anal Stage	The anal stage coincides with potty training or learning to manage biological urges. The ego is beginning to develop in this stage. Anal fixation may result in a person who is compulsively clean and organized or one who is sloppy and lacks self-control.
Phallic Stage	The phallic stage occurs in early childhood and marks the development of the superego and a sense of masculinity or femininity as culture dictates.
Latency	Latency occurs during middle childhood when a child's urges quiet down and friendships become the focus. The ego and superego can be refined as the child learns how to cooperate and negotiate with others.
Genital Stage	The genital stage begins with puberty and continues through adulthood. Now the preoccupation is that of sex and reproduction.

6. Image from McLeod, S. A. (2019, September 25). Id, ego and superego. Simply Psychology. <https://www.simplypsychology.org/psyche.html>. Licensed under CC BY NC ND 3.0 Text by Maria Pagano

Strengths and Weaknesses of Freud's Theory

Freud's theory has been heavily criticized for several reasons. One is that it is very difficult to test scientifically. How can parenting in infancy be traced to personality in adulthood? Are there other variables that might better explain development? The theory is also considered to be sexist in suggesting that women who do not accept an inferior position in society are somehow psychologically flawed. Freud focuses on the darker side of human nature and suggests that much of what determines our actions is unknown to us. So why do we study Freud? As mentioned above, despite the criticisms, Freud's assumptions about the importance of early childhood experiences in shaping our psychological selves have found their way into child development, education, and parenting practices. Freud's theory has heuristic value in providing a framework from which elaborate and modify subsequent theories of development. Many later theories, particularly behaviorism and humanism, were challenges to Freud's views.

Erik Erikson (1902-1994) and Psychosocial Theory⁷



Erikson suggested that our relationships and society's expectations motivate much of our behavior in his theory of **psychosocial development**. Erikson was a student of Freud's but emphasized the importance of the ego, or conscious thought, in determining our actions. In other words, he believed that we are not driven by unconscious urges. We know what motivates us and we consciously think about how to achieve our goals. He is considered the father of developmental psychology because his model gives us a guideline for the entire life span and suggests certain primary psychological and social concerns throughout life.

Erikson expanded on his Freud's by emphasizing the importance of culture in parenting practices and motivations and adding three stages of adult development (Erikson, 1950; 1968).

He believed that we are aware of what motivates us throughout life and the ego has greater importance in guiding our actions than does the id. We make conscious choices in life and these choices focus on meeting certain social and cultural needs rather than purely biological ones. Humans are motivated, for instance, by the need to feel that the world is a trustworthy place, that we are capable individuals, that we can make a contribution to society, and that we have lived a meaningful life. These are all psychosocial problems.

Erikson divided the lifespan into eight stages. In each stage, we have a major psychosocial task to accomplish

7. Image of Erikson is public domain

or crisis to overcome. Erikson believed that our personality continues to take shape throughout our lifespan as we face these challenges in living. Here is a brief overview of the eight stages:

Erik Erikson's Psychosocial Theory

Name of Stage	Description of Stage
Trust vs. mistrust (0-1)	The infant must have basic needs met in a consistent way in order to feel that the world is a trustworthy place.
Autonomy vs. shame and doubt (1-2)	Mobile toddlers have newfound freedom they like to exercise and by being allowed to do so, they learn some basic independence.
Initiative vs. Guilt (3-5)	Preschoolers like to initiate activities and emphasize doing things "all by myself."
Industry vs. inferiority (6-11)	School aged children focus on accomplishments and begin making comparisons between themselves and their classmates
Identity vs. role confusion (adolescence)	Teenagers are trying to gain a sense of identity as they experiment with various roles, beliefs, and ideas.
Intimacy vs. Isolation (young adulthood)	In our 20s and 30s we are making some of our first long-term commitments in intimate relationships.
Generativity vs. stagnation (middle adulthood)	The 40s through the early 60s we focus on being productive at work and home and are motivated by wanting to feel that we've made a contribution to society.
Integrity vs. Despair (late adulthood)	We look back on our lives and hope to like what we see-that we have lived well and have a sense of integrity because we lived according to our beliefs.

These eight stages form a foundation for discussions on emotional and social development during the life span. Keep in mind, however, that these stages or "crises" can occur more than once. For instance, a person may struggle with a lack of trust beyond infancy under certain circumstances. Erikson's theory has been criticized for focusing so heavily on stages and assuming that the completion of one stage is prerequisite for the next crisis of development. His theory also focuses on the social expectations that are found in certain cultures, but not in

all. For instance, the idea that adolescence is a time of searching for identity might translate well in the middle-class culture of the United States, but not as well in cultures where the transition into adulthood coincides with puberty through rites of passage and where adult roles offer fewer choices.



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<https://wisconsin.pressbooks.pub/adolescentpsychology/?p=288#h5p-4>

Behaviorist

While Freud and Erikson looked at what was going on in the mind, behaviorists rejected any reference to mind and viewed overt and observable behavior as the proper subject matter of psychology. Through the scientific study of behavior, it was hoped that laws of learning could be derived that would promote the prediction and control of behavior.

Ivan Pavlov (1870-1937) and Classical Conditioning⁸ and Classical Conditioning with Animals



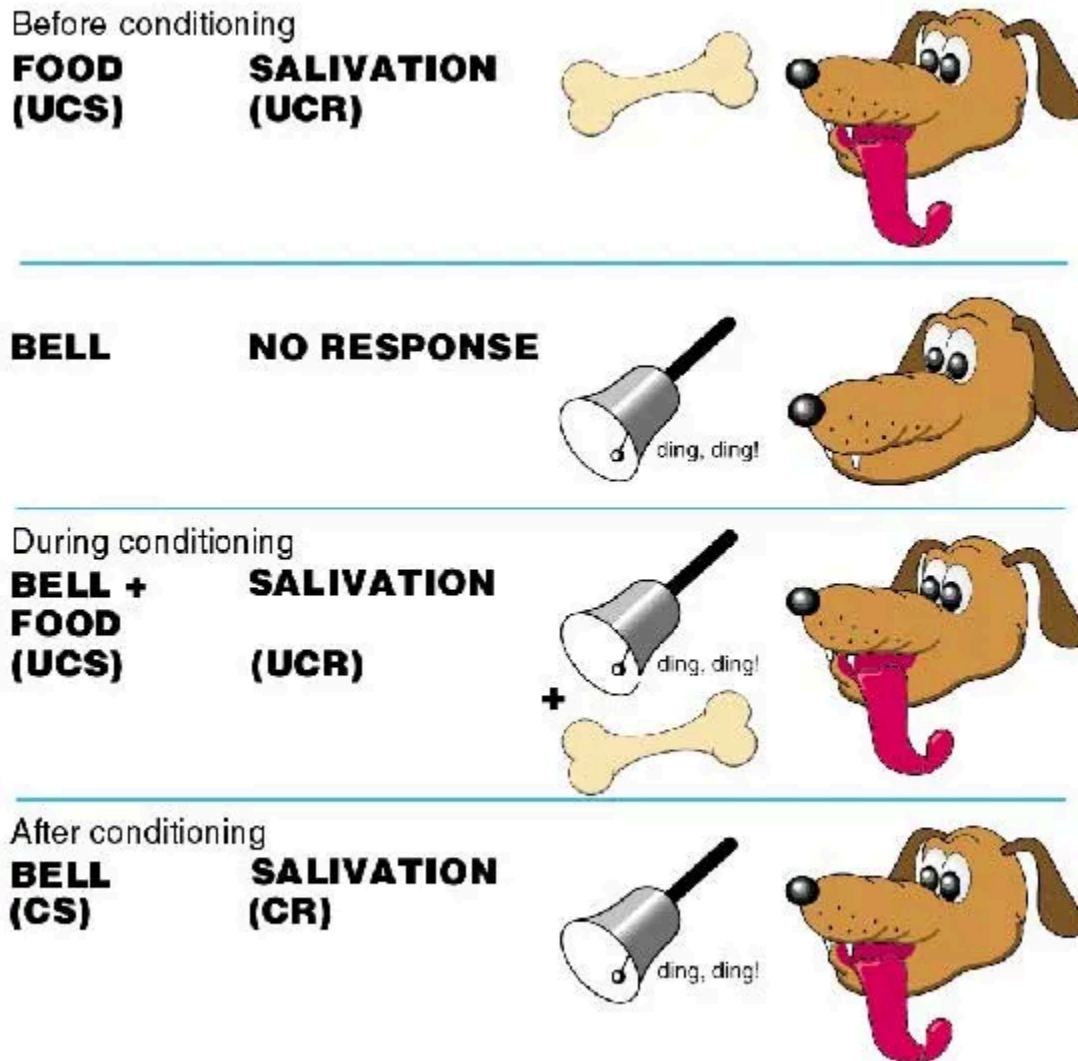
Ivan Pavlov was a Russian physiologist interested in studying digestion. As he recorded the amount of salivation his laboratory dogs produced as they ate, he noticed that they began to salivate before the food arrived as the researcher walked down the hall and toward the cage. One possible explanation for this phenomenon would be that the dog learned that food comes after the bell.

Pavlov began to experiment with this concept of **classical conditioning**. He began to ring a bell, for instance, prior to introducing the food. Sure enough, after making this connection several times, the dogs could be made to salivate to the sound of a bell. Once the bell had become an event to which the dogs had learned to salivate, it was called a **conditioned stimulus**. The act of salivating to a bell was a response that had also been learned, now termed in Pavlov's jargon, a **conditioned response**. Notice that the response, salivation, is the same whether it is conditioned or unconditioned (unlearned or natural). What

8. Image of Pavlov is in the public domain

changed is the stimulus to which the dog salivates. One is natural (unconditioned) and one is learned (conditioned).

Summary of Classical Conditioning Process (Animals)



Pavlovian Conditioning of a dog to salivate upon hearing a bell.

To summarize, classical conditioning (later developed by Watson, 1913) involves learning to associate an unconditioned stimulus that already brings about a particular response (i.e., a reflex) with a new (conditioned) stimulus, so that the new stimulus brings about the same response.

The **unconditioned stimulus** (or UCS) is the object or event that originally produces the reflexive /natural response. The response to this is called the **unconditioned response** (or UCR). The **neutral stimulus** (NS) is a new stimulus that does not produce a response. Once the neutral stimulus has become associated with the

unconditioned stimulus, it becomes a **conditioned stimulus** (CS). The **conditioned response** (CR) is the response to the conditioned stimulus.⁹

Now, let's think about how classical conditioning is used on us. One of the most widespread applications of classical conditioning principles was brought to us by the psychologist, John B. Watson.¹⁰

John B. Watson (1878-1958) and Classical Conditioning¹¹ and Classical Conditioning in Humans



Watson believed that most of our fears and other emotional responses are classically conditioned. He had gained a good deal of popularity in the 1920s with his expert advice on parenting offered to the public. He tried to demonstrate the power of classical conditioning with his famous experiment with an 18-month-old boy named “Little Albert”. Watson sat Albert down and introduced a variety of seemingly scary objects to him: a burning piece of newspaper, a white rat, etc. But Albert remained curious and reached for all of these things. Watson knew that one of our only inborn fears is the fear of loud noises so he proceeded to make a loud noise each time he introduced one of Albert’s favorites, a white rat. After hearing the loud noise several times paired with the rat,

Albert soon came to fear the rat and began to cry when it was introduced. Watson filmed this experiment for posterity and used it to demonstrate that he could help parents achieve any outcomes they desired, if they would only follow his advice. Watson wrote columns in newspapers and in magazines and gained a lot of popularity among parents eager to apply science to household order.¹²

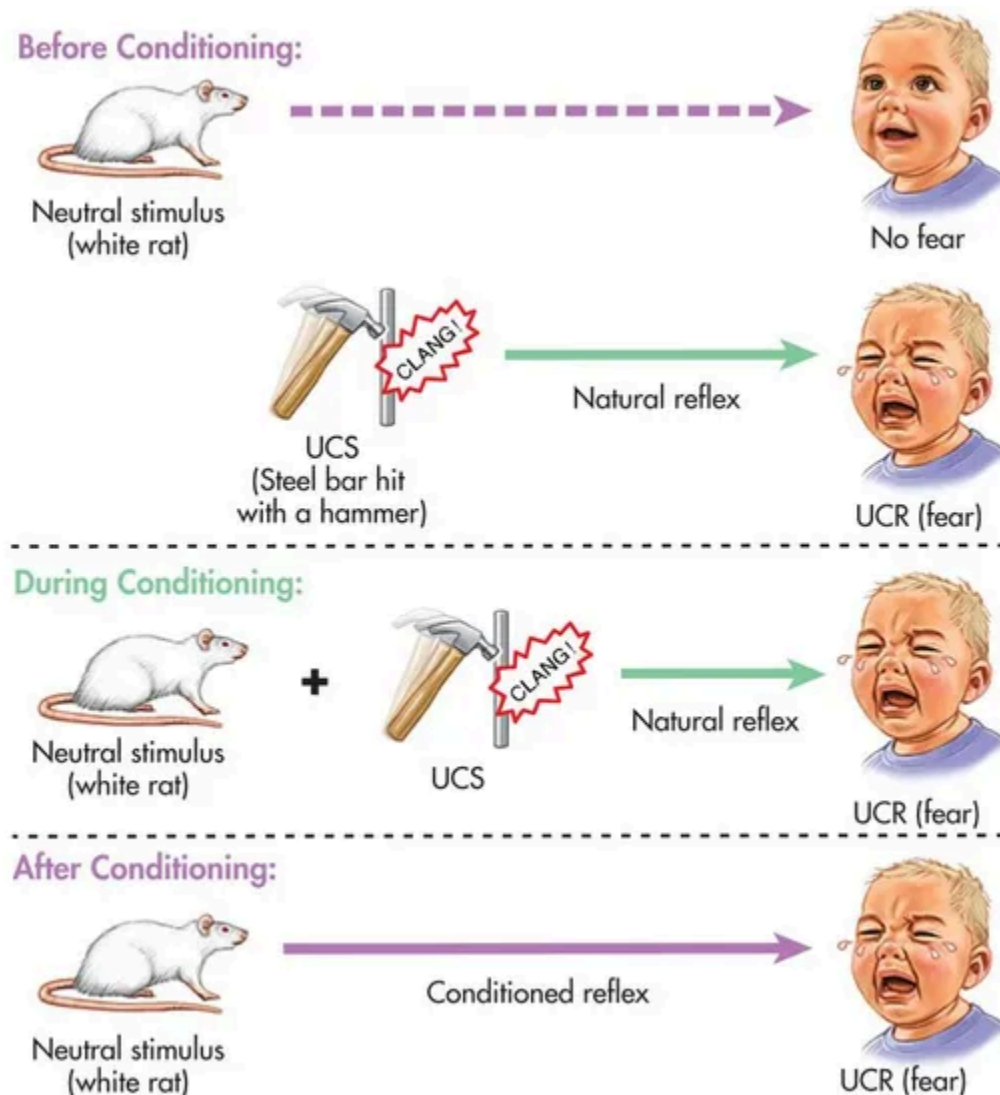
9. Text and image by McLeod, S. A. (2018, October 08). Pavlov’s dogs. Simply Psychology. <https://www.simplypsychology.org/pavlov.html> Licensed under CC BY NC ND 3.0

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Summary of Classical Conditioning Process (Humans)



Watson's conditioning of Little Albert to fear a white rat.¹³

Operant conditioning, on the other hand, looks at the way the consequences of a behavior increase or decrease the likelihood of a behavior occurring again. So, let's look at this a bit more.¹⁴

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B.F. Skinner (1904-1990) and Operant Conditioning¹⁵ and Operant Conditioning in Animals and Humans



Skinner (1904-1990), who brought us the principles of **operant conditioning**, suggested that **reinforcement** is a more effective means of encouraging a behavior than is punishment. By focusing on strengthening desirable behavior, we have a greater impact than if we emphasize what is undesirable.

Reinforcement is the process by which a consequence increases the probability of a behavior that it follows. A **reinforcer** is a specific stimulus or situation that encourages the behavior that it follows. Intrinsic or **primary reinforcers** are reinforcers that have innate reinforcing qualities. These kinds of reinforcers are not learned and satisfy a biological need. Water, food, sleep, shelter, sex, pleasure, and touch, among others, are primary reinforcers. Swimming in a cool lake on a very hot day would be innately reinforcing because the water would cool the person off (a physical need), as well as provide pleasure. Extrinsic or **secondary reinforcers** have no inherent value and only have reinforcing qualities when linked with primary reinforcers. They can be traded in for what is ultimately desired. Praise, when linked to affection, is one example of a secondary reinforcer. Another example is money, which is only worth something when you can use it to buy other things—either things that satisfy basic needs (food, water, shelter—all primary reinforcers) or other secondary reinforcers. Extrinsic or **secondary reinforcers** are things that have a value not immediately understood.

Positive reinforcement occurs when the *addition* of a stimulus strengthens behavior. For example, positively reinforcing a child with the addition of a cookie for cleaning up will likely make encourage that behavior in the future. **Negative reinforcement**, on the other hand, occurs when *removing* a desired stimulus (or preventing access to it) strengthens behavior. For example, an alarm clock makes a very unpleasant, loud sound when it goes off in the morning. As a result, one gets up and turns it off. Therefore, getting up from bed is negatively reinforced through the termination of the aversive sound.

Punishment is the process by which there decrease in the probability of behavior as a result of the consequence that follows it. Positive punishment occurs when the *addition* of an unpleasant or painful

15. Image of Skinner is public domain

stimulus weakens behavior. For example, if a child is naughty and receives a spanking, the child will be less likely to misbehave in the future. Negative punishment, on the other hand, weakens a behavior through the *removal* of a desirable stimulus or preventing access to it. For example, a child who misbehaves and as a result has their favorite toy will be less likely to misbehave in the future. Punishment is often less effective than reinforcement for several reasons. It doesn't indicate the desired behavior, it may result in suppressing rather than stopping a behavior, (in other words, the person may not do what is being punished when you're around, but may do it often when you leave), and a focus on punishment can result in not noticing when the person does well.

Examples of Operant Conditioning Using Positive and Negative Reinforcement and Positive and Negative Punishers

	POSITIVE	NEGATIVE
	(Receive a Stimulus)	(Stimulus Gets Taken Away)
REINFORCER (Probability of Behavior Increases)	Infant says "Mama" and mother claps her hands, smiles, and says, "very good, yes Mama!" The infant likes seeing the mother perform this way so continues to say "Mama."	Infant's diaper is wet or dirty, so infant cries. Someone comes and changes the diaper, thereby reducing the discomfort. The next time the child is uncomfortable, the child will cry.
PUNISHER (Probability of Behavior Decreases)	Child pulls the dog's tail and the dog growls at the child. The child becomes frightened and does not pull the dog's tail again.	Child behaves badly and his toy is taken away. The child learns that particular behavior is unacceptable and doesn't want to lose the toy again, so the behavior is decreased or eliminated.

Not all behaviors are learned through association or reinforcement. Many of the things we do are learned by watching others. This is addressed in social learning theory.¹⁶

Schedules of Reinforcement

Imagine a rat in a "Skinner box." In operant conditioning, if no food pellet is delivered immediately after the lever is pressed then after several attempts the rat stops pressing the lever (how long would someone continue to go to work if their employer stopped paying them?). The behavior has been extinguished.

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Behaviorists discovered that different patterns or **schedules of reinforcement** had different effects on the speed of learning and extinction. Ferster and Skinner (1957) devised different ways of delivering reinforcement and found that this had effects on

1. The Response Rate – The rate at which the rat pressed the lever (i.e., how hard the rat worked).
2. The Extinction Rate – The rate at which lever pressing dies out (i.e., how soon the rat gave up).

Skinner found that the type of reinforcement which produces the slowest rate of extinction (i.e., people will go on repeating the behavior for the longest time without reinforcement) is **variable-ratio reinforcement**. The type of reinforcement which has the quickest rate of extinction is continuous reinforcement.

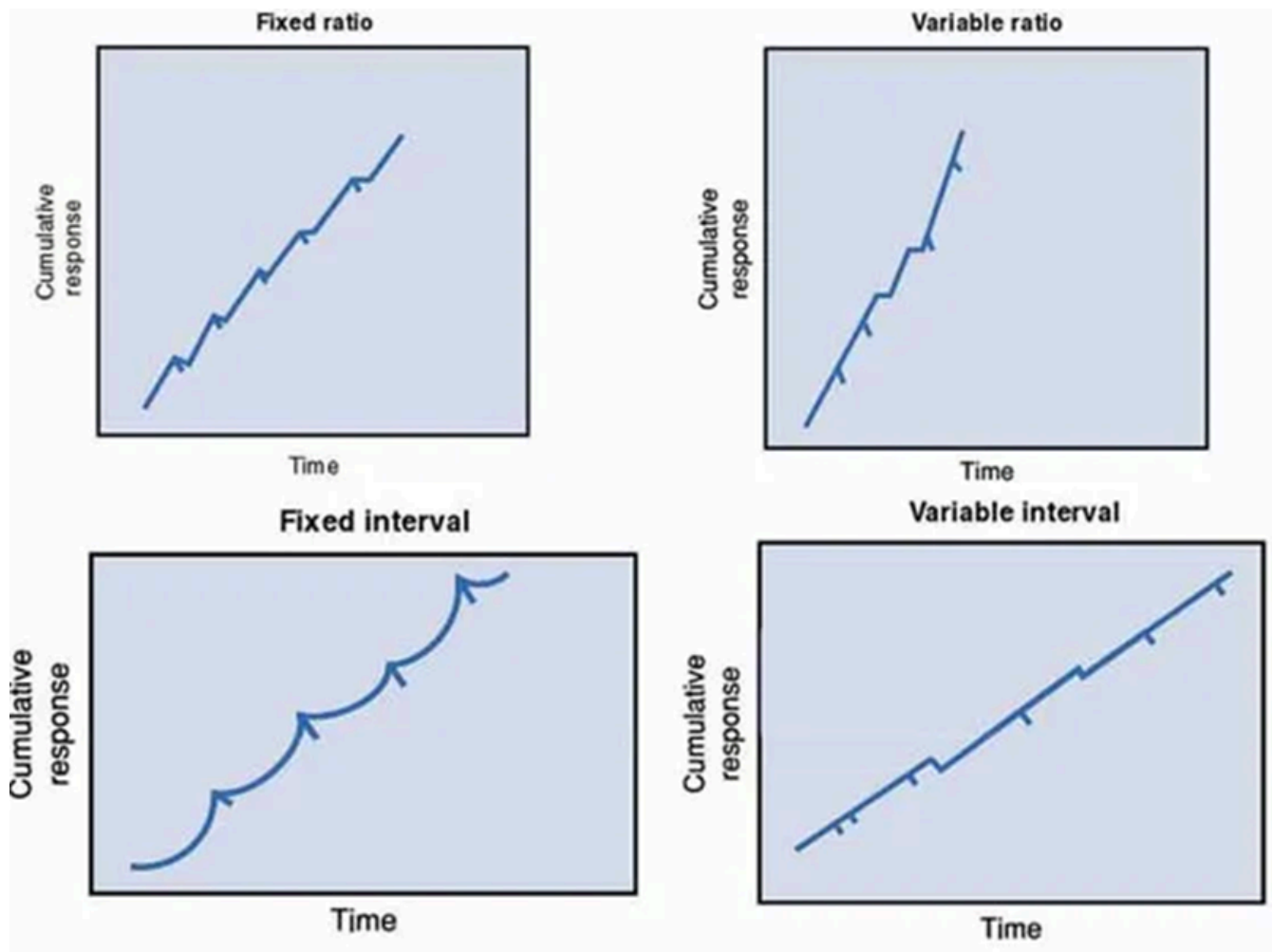
Response rate			
—	slow		fast
Extinction rate			
slow			Variable Interval Reinforcement: Providing one correct response has been made, reinforcement is given after an unpredictable amount of time has passed, e.g., on average every 5 minutes. An example is a self-employed person being paid at unpredictable times.
medium		Fixed Interval Reinforcement: One reinforcement is given after a fixed time interval providing at least one correct response has been made. An example is being paid by the hour. Another example would be every 15 minutes (half hour, hour, etc.) a pellet is delivered (providing at least one lever press has been made) then food delivery is shut off.	Fixed Ratio Reinforcement: Behavior is reinforced only after the behavior occurs a specified number of times. e.g., one reinforcement is given after every so many correct responses, e.g., after every 5th response. For example, a child receives a star for every five words spelled correctly.

fast	continuous reinforcement An animal/human is positively reinforced every time a specific behavior occurs, e.g., every time a lever is pressed a pellet is delivered, and then food delivery is shut off.		Variable Ratio Reinforcement: Behavior is reinforced after an unpredictable number of times. For examples gambling or fishing.

17

Graphic Representation of Schedules of Reinforcement

17. McLeod, S. A. (2018, January, 21). *Skinner - operant conditioning*. Simply Psychology. <https://www.simplypsychology.org/operant-conditioning.html> Licensed under CC BY NC ND 3.0



Each dash indicates the point where reinforcement is given.¹⁸

18. McLeod, S. A. (2018, January, 21). *Skinner - operant conditioning*. Simply Psychology. <https://www.simplypsychology.org/operant-conditioning.html> Licensed under CC BY NC ND 3.0

Albert Bandura (1925-2021) and Social Learning Theory¹⁹ and Social Learning Theory



Albert Bandura is a leading contributor to **social learning theory**. He calls our attention to the ways in which many of our actions are not learned through conditioning; rather, they are learned by watching others (1977). Young children frequently learn behaviors through **imitation**.

Sometimes, particularly when we do not know what else to do, we learn by observing others **model** their behavior and then imitating or copying that behavior. A kindergartner on his or her first day of school might eagerly look at how others are acting and try to act the same way to fit in more quickly. Adolescents struggling with their identity rely heavily on their peers to act as role-models. Sometimes we do things because we've seen it pay off for someone else. They were operantly conditioned, but we engage in the behavior because we hope it will pay off for us as well. This is referred to as vicarious reinforcement (Bandura, Ross and Ross, 1963).

Bandura (1986) suggests that there is interplay between the environment and the individual. We are not just the product of our surroundings, rather we influence our surroundings. Parents not only influence their child's environment, perhaps intentionally through the use of reinforcement, etc., but children influence parents as well. Parents may respond differently with their first child than with their fourth. Perhaps they try to be the perfect parents with their firstborn, but by the time their last child comes along they have very different expectations both of themselves and their child. Our environment creates us, and we create our environment.

20

19. Image of Albert Bandura is licensed under CC BY-SA 4.0

20. Exploring Behavior by Lumen Learning is licensed under CC BY 4.0 Rasmussen, Eric (2017, Oct 19). Screen Time and Kids: Insights from a New Report. Retrieved from <https://www.pbs.org/parents/thrive/screen-time-and-kids-insights-from-a-new-report>

Bandura and the Bobo Doll Experiment & Today's Children and the Media

Other social influences: TV or not TV? Bandura (et als. 1963) began a series of studies to look at the impact of television, particularly commercials, on the behavior of children. Are children more likely to act out aggressively when they see this behavior modeled? What if they see it being reinforced? Bandura began by conducting an experiment in which he showed children a film of a woman hitting an inflatable clown or “bobo” doll. Then the children were allowed in the room where they found the doll and immediately began to hit it. This was without any reinforcement whatsoever. Not only that, but they found new ways to behave aggressively. It's as if they learned an aggressive role.

Children view far more television today than in the 1960s; so much, in fact, that they have been referred to as Generation M (media). The amount of screen time varies by age. As of 2017, children 0-8 spend an average of 2 hours and 19 minutes. Children 8-12 years of age spend almost 6 hours a day on screen media. And 13- to 18-year-olds spend an average of just under 9 hours a day in entertainment media use.

The prevalence of violence, sexual content, and messages promoting foods high in fat and sugar in the media are certainly cause for concern and the subjects of ongoing research and policy review. Many children spend even more time on the computer viewing content from the internet. The amount of time spent connected to the internet continues to increase with the use of smartphones that essentially serve as mini-computers. And the ways children and adolescents interact with the media continues to change. The popularity of YouTube and the various social media platforms are examples of this. What might be the implications of this?³¹

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Cognitive Developmental Theories

Jean Piaget (1896-1980) and Theory of Cognitive Development²³



Jean Piaget is one of the most influential cognitive theorists, and in the later modules we will discuss his work and his legacy in much more detail. Piaget was inspired to explore children's ability to think and reason by watching his own children's development. He was one of the first to recognize and map out the ways in which children's thought differs from that of adults. His interest in this area began when he was asked to test the IQ of children and began to notice that there was a pattern in their wrong answers. He believed that children's intellectual skills change over time through maturation. Children of

differing ages interpret the world differently.

Piaget believed our desire to understand the world comes from a need for cognitive equilibrium. This is an agreement or balance between what we sense in the outside world and what we know in our minds. If we experience something that we cannot understand, we try to restore the balance by either changing our thoughts or by altering the experience to fit into what we do understand. Perhaps you meet someone who is very different from anyone you know. How do you make sense of this person? You might use them to establish a new category of people in your mind or you might think about how they are similar to someone else.

A **schema** or schemes are categories of knowledge. They are like mental boxes of concepts. A child has to learn many concepts. They may have a scheme for "under" and "soft" or "running" and "sour". All of these are schema. Our efforts to understand the world around us lead us to develop new schema and to modify old ones.

One way to make sense of new experiences is to focus on how they are similar to what we already know.

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This is **assimilation**. So, the person we meet who is very different may be understood as being “sort of like my brother” or “his voice sounds a lot like yours.” Or a new food may be assimilated when we determine that it tastes like chicken!

Another way to make sense of the world is to change our mind. We can make a cognitive **accommodation** to this new experience by adding new schema. This food is unlike anything I’ve tasted before. I now have a new category of foods that are bitter-sweet in flavor, for instance. This is accommodation. Do you accommodate or assimilate more frequently? Children accommodate more frequently as they build new schema. Adults tend to look for similarity in their experience and assimilate. They may be less inclined to think “outside the box.”

Piaget suggested different ways of understanding that are associated with maturation. He divided this understanding into the following four stages which will be discussed in much more detail in Chapter 7:

Piaget's Stages of Cognitive Development²⁴

Stage	Approximate Age	Characteristics
Sensorimotor	Birth to about 2 years of age.	- Child has little competence in representing the environment with language, symbols, and images. - No awareness of objects or people, not immediately in front of them. The infant lacks object permanence. - The infant begins to understand objects around them and the way those objects can be manipulated and acquired through an understanding of spatial cause and effect.
Preoperational	2 to 7 years	- Language can be used to describe people, events, and emotions. - Can apply the use of symbolic thought to pretend play. - Child thinking and speech are egocentric. For example, a three-year old may hide their face when they are in trouble, even though they are in plain view the child believes that their inability to see others also results in others inability to see them. - Child believe that all things, including inanimate objects have a conscious existence. For example, they will be mad at an object if they run into it and hurt themselves because they think the object harmed them on purpose.
Concrete Operational	7 to 11 years	- The child thinks in a more logical manner and can overcome egocentric thought and speech. - Begins to better understand time and space.
Formal Operational	11 years to adulthood	- Can use abstract thought and logical thinking to solve problems. - Can use hypothetical-deductive reasoning to solve problems.

Criticisms of Piaget's Theory

Piaget has been criticized for overemphasizing the role that physical maturation plays in cognitive development and in underestimating the role that culture and interaction (or experience) plays in cognitive development.

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Looking across cultures reveals considerable variation in what children are able to do at various ages. Piaget may have underestimated what children are capable of given the right circumstances.²⁵

Lev Vygotsky (1896-1934) and Sociocultural Theory²⁶



Lev Vygotsky was a Russian psychologist who wrote in the early 1900s but whose work was discovered in the United States in the 1960s but became more widely known in the 1980s. Vygotsky differed with Piaget (this difference will be discussed in more detail in Chapter 7) in that he believed that a person not only has a set of abilities, but also a set of potential abilities that can be realized if given the proper guidance from others. His **sociocultural theory** emphasizes the importance of culture and interaction in the development of cognitive abilities. He believed that through guided participation known as **scaffolding**, with a teacher or capable peer, a child can learn cognitive skills within a certain range known as the **zone of proximal development**.²⁷

Have you ever taught a child to perform a task? Maybe it was brushing their teeth or preparing food. Chances are you spoke to them and described what you were doing while you demonstrated the skill and let them work along with you all through the process. You gave them assistance when they seemed to need it, but once they knew what to do-you stood back and let them go. This is scaffolding and can be seen demonstrated throughout the world. This approach to teaching has also been adopted by educators. Rather than assessing students on what they are doing, they should be understood in terms of what they are capable of doing with the proper guidance. You can see how Vygotsky would be very popular with modern day educators.²⁸

Comparing Piaget and Vygotsky

Vygotsky concentrated more on the child's immediate social and cultural environment and his or her interactions with adults and peers. While Piaget saw the child as actively discovering the world through individual interactions with it, Vygotsky saw the child as more of an apprentice, learning through a social

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environment of others who had more experience and were sensitive to the child's needs and abilities. We will elaborate on the two theories in later modules²⁹



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<https://wisconsin.pressbooks.pub/adolescentpsychology/?p=288#h5p-6>

Information Processing

Information Processing is not the work of a single theorist but based on the ideas and research of several cognitive scientists studying how individuals perceive, analyze, manipulate, use, and remember information. This approach assumes that humans gradually improve in their processing skills; that is, cognitive development is continuous rather than stage-like. The more complex mental skills of adults are built from the primitive abilities of children. We are born with the ability to notice stimuli, store, and retrieve information. Brain maturation enables advancements in our information processing system. At the same time, interactions with the environment also aid in our development of more effective strategies for processing information.³⁰

Urie Bronfenbrenner (1917-2005) and Ecological Systems Theory³¹



Bronfenbrenner offers us one of the most comprehensive theories of human development. Bronfenbrenner studied Freud, Erikson, Piaget, and learning theorists and believed that all those theories could be enhanced by adding the dimension of context. What is being taught and how society interprets situations depends on who is involved in the life of a child and on when and where a child lives. Bronfenbrenner's

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ecological systems model explains the direct and indirect influences on an individual's development.³² The individual is impacted by several systems including:

- **Microsystem** includes the individual's setting and those who have direct, significant contact with the person, such as parents or siblings. The input of those is modified by the cognitive and biological state of the individual as well. These influence the person's actions, which in turn influence systems operating on him or her.
- **Mesosystem** includes the larger organizational structures, such as school, the family, or religion. These institutions impact the microsystems just described. The philosophy of the school system, daily routine, assessment methods, and other characteristics can affect the child's self-image, growth, sense of accomplishment, and schedule thereby impacting the child, physically, cognitively, and emotionally.
- **Exosystem** includes the larger contexts of community. A community's values, history, and economy can impact the organizational structures it houses. Mesosystems both influence and are influenced by the exosystem.
- **Macrosystem** includes the cultural elements, such as global economic conditions, war, technological trends, values, philosophies, and a society's responses to the global community.
- **Chronosystem** is the historical context in which these experiences occur. This relates to the different generational time periods previously discussed, such as the baby boomers and millennials.

In sum, a child's experiences are shaped by larger forces, such as the family, schools, religion, culture, and time period. Bronfenbrenner's model helps us understand all the different environments that impact each one of us simultaneously. Despite its comprehensiveness, Bronfenbrenner's ecological system's theory is not easy to use. Taking into consideration all the different influences makes it difficult to research and determine the impact of all the different variables (Dixon, 2003). Consequently, psychologists have not fully adopted this approach, although they recognize the importance of the ecology of the individual.³³

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Bronfenbrenner's Ecological Systems Theory³⁴



Conclusion

Many early theories of human development were created and popularized in the early 1900s. These are referred to as stage theories because they present development as occurring in stages. The assumption is that once one stage is completed, a person moves into the next stage and that stages tend to occur only once. Some examples of stage theories that we will be studying include Freud's psychosexual stages, Erikson's psychosocial stages, and Piaget's stages of cognitive development, to name a few.

These theories are appealing in a way because they provide the ability to predict what will happen next and they allow us to attribute behavior to a person's being 'in a stage'. These theories offered the security of understanding human behavior in a time of rapid change during industrialization in the early 1900s. Science

34. Image by Ian Joslin is licensed under CC BY 4.0

seemed to be laying a predictable groundwork we could rely upon. But these early theories also implied that those who did not progress through stages in the predictable way were delayed somehow and this led to the idea that development had to occur in a patterned way.

Today we understand that development does not occur in a straight line. Sometimes we change in many directions depending on our experiences and surroundings. For example, there can be growth and decline in cognitive functioning at any age depending on nutrition, health, activity, and stimulation. And that both nature (heredity) and nurture (the environment) shape our abilities throughout life. Some things about us are continuous such as our temperament or sense of self, perhaps. And we may revisit a stage of life more than once. For instance, Erikson suggests that we struggle with trust as infants and then begin to focus more on independence or autonomy. But if we are in circumstances in which our independence is jeopardized, such as becoming physically dependent, we may struggle with trust again. Keep these thoughts in mind as we explore stage theories in our next lesson.

The study of human development is based on research. The next chapter looks at some of the different types of research methods used to understand development. In other words, how do we know what we know?³⁵

Media Attributions

- Private: John Locke
- Private: Roussou
- Private: Image 4 Freud
- Private: Image 5 Iceburg Id Ego and Superego
- Private: Image 6 Freud's Psychosexual Stages
- Private: Image 7 Erikson
- Private: Image 8 Table Eriksons Psychosocial Theory
- Private: Item 9 Pavlov
- Private: Item 10 Classical Conditioning Chart
- Private: Item 11 Watson
- Private: Item 12 Classical Conditioning Human
- Private: Item 13 Skinner
- Private: Item 14 Schedules of Reinforcement
- Private: Item 15 Bandura
- Private: Item 16 Blurb on Bandura and Bobo Doll Experiment
- Private: Item 17 Piaget

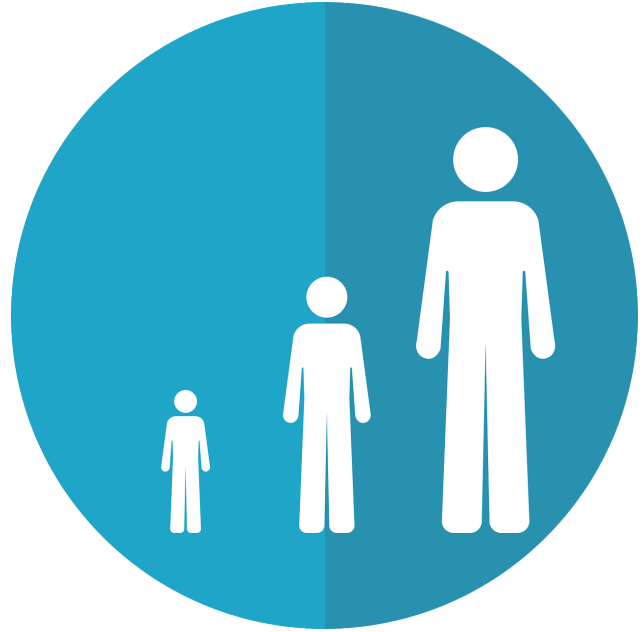
- Private: Item 18B New Version of Piagetian Stages Chart
- Private: Item 19 Vygotsky
- Private: Item 20 Bronfenbrenner
- Private: Item 21 Bronfenbrenner Ecological System

4.

Development has been presented as a theoretical perspective, proposing several fundamental, theoretical, and methodological principles about the nature of human development. An attempt by researchers has been made to examine whether research on the nature of development suggests a specific metatheoretical worldview. Several beliefs, taken together, form the “family of perspectives” that contribute to this particular view.

German psychologist Paul Baltes (1987), a leading expert on development, established one of the most widely accepted approaches to studying development called the **lifespan perspective**. This approach is based on several key assumptions:

- Development occurs across one’s entire life, or is *lifelong*.
- Development is *multidimensional*, meaning it involves the dynamic interaction of factors like physical, emotional, and psychosocial development
- Development is *multidirectional* and results in gains and losses throughout life
- Development is *plastic*, meaning that characteristics are malleable or changeable.
- Development is influenced by *contextual* and socio-cultural influences.
- Development is *multidisciplinary*.



Development is Lifelong

Lifelong development means that change is not completed in infancy or childhood or at any specific age; it encompasses the entire lifespan, from conception to death. The study of development traditionally focused almost exclusively on the changes occurring from conception to adolescence and the gradual decline in old age; it was believed that the five or six decades after adolescence yielded little to no developmental change at all. The current view reflects the possibility that specific changes in development can occur later in life, without having been established at birth. Later events in one’s life can transform the early events of one’s childhood.

This belief clearly emphasizes that all stages of the lifespan contribute to the regulation of the nature of human development.

Many diverse patterns of change, such as direction, timing, and order, can vary among individuals and affect how they develop. For example, the developmental timing of events can affect individuals in different ways because of their current level of maturity and understanding. As individuals move through life, they are faced with many challenges, opportunities, and situations that impact their development. Remembering that development is a lifelong process helps us gain a broader perspective on the meaning and impact of each event.

Development is Multidimensional

By multidimensionality, Baltes is referring to the fact that a complex interplay of factors influences development across the lifespan, including biological, cognitive, and socioemotional changes. Baltes argues that a dynamic interaction of these factors is what affects an individual's development.

For example, in adolescence, puberty consists of physiological and physical changes with changes in hormone levels, the development of primary and secondary sex characteristics, alterations in height and weight, and several other bodily changes. But these are not the only types of changes taking place; there are also cognitive changes, including the development of advanced cognitive faculties such as the ability to think abstractly. There are also emotional and social changes involving regulating emotions, interacting with peers, and possibly dating. The fact that the term puberty encompasses such a broad range of domains illustrates the multidimensionality component of development (think back to the physical, cognitive, and psychosocial domains of human development we discussed earlier).

Development is Multidirectional

Baltes states that the development of a particular domain does not occur in a strictly linear fashion but that the development of certain traits can be characterized as having the capacity for both an increase and a decrease in efficacy over the course of an individual's life.

If we use the example of puberty again, we can see that certain domains may improve or decline in effectiveness during this time. For example, self-regulation is one domain of puberty that undergoes profound multidirectional changes during the adolescent period. During childhood, individuals have difficulty effectively regulating their actions and impulsive behaviors. Scholars have noted that this lack of effective regulation often results in children engaging in behaviors without fully considering the consequences of their actions. Throughout puberty, neuronal changes modify this unregulated behavior by increasing the ability to regulate emotions and impulses. Inversely, the ability of adolescents to engage in spontaneous activity and creativity, both domains commonly associated with impulse behavior, decreases over the adolescent period in response to changes in cognition. Neuronal changes to the limbic system and prefrontal cortex of the

brain, which begin in puberty, lead to the development of self-regulation, and the ability to consider the consequences of one's actions (though recent brain research reveals that this connection will continue to develop into early adulthood).

Extending on the premise of multidirectionality, Baltes also argued that development is influenced by the “joint expression of features of growth (gain) and decline (loss)” (Baltes, 1987). This relation between developmental gains and losses occurs in a direction to selectively optimize particular capacities. This requires the sacrificing of other functions, a process known as selective optimization with compensation. According to the process of selective optimization, individuals prioritize particular functions above others, reducing the adaptive capacity of particulars for specialization and improved the efficacy of other modalities.

The acquisition of effective self-regulation in adolescents illustrates this gain/loss concept. As adolescents gain the ability to regulate their actions effectively, they may be forced to sacrifice other features to selectively optimize their reactions. For example, individuals may sacrifice their capacity to be spontaneous or creative if they are constantly required to make thoughtful decisions and regulate their emotions. Adolescents may also be forced to sacrifice their fast reaction times toward processing stimuli in favor of being able to consider the consequences of their actions fully.

Development is Plastic

Plasticity denotes intrapersonal variability and focuses heavily on the potentials and limits of the nature of human development. The notion of plasticity emphasizes that there are many possible developmental outcomes and that the nature of development is much more open and pluralistic than originally implied by traditional views; there is no single pathway that must be taken in an individual's development across the lifespan. Plasticity is imperative to current research because the potential for intervention is derived from the notion of plasticity in development. Undesired development or behaviors could potentially be prevented or changed.

As an example, recently, researchers have been analyzing how other senses compensate for the loss of vision in blind individuals. Without visual input, blind humans have demonstrated that tactile and auditory functions still fully develop, and they can use tactile and auditory cues to perceive the world around them. One experiment designed by Röder and colleagues (1999) compared the auditory localization skills of people who are blind with people who are sighted by having participants locate sounds presented either centrally or peripherally (lateral) to them. Both congenitally blind adults and sighted adults could locate a sound presented in front of them with precision, but people who are blind were superior in locating sounds presented laterally. Currently, brain-imaging studies have revealed that the sensory cortices in the brain are reorganized after visual deprivation. These findings suggest that when vision is absent in development, the auditory cortices in the brain recruits areas that are normally devoted to vision, thus becoming further refined.

Development is Contextual

In Baltes' theory, the paradigm of contextualism refers to the idea that three systems of biological and environmental influences work together to influence development. Development occurs in context and varies from person to person, depending on factors such as a person's biology, family, school, church, profession, nationality, and ethnicity. Baltes identified three types of influences that operate throughout the life course: normative age-graded influences, normative history-graded influences, and non-normative influences. Baltes wrote that these three influences operate throughout the life course, their effects accumulate with time, and, as a dynamic package, they are responsible for how lives develop.

Normative age-graded influences are those biological and environmental factors that have a strong correlation with chronological age, such as puberty or menopause, or age-based social practices such as beginning school or entering retirement. **Normative history-graded influences** are associated with a specific time period that defines the broader environmental and cultural context in which an individual develops. For example, development and identity are influenced by historical events of the people who experience them, such as the Great Depression, WWII, Vietnam, the Cold War, the War on Terror, or advances in technology.

This has been exemplified in numerous studies, including Nesselroade and Baltes', showing that the level and direction of change in adolescent personality development were influenced as strongly by the socio-cultural settings at the time (in this case, the Vietnam War) as age-related factors. The study involved individuals of four different adolescent age groups who all showed significant personality development in the same direction (a tendency to occupy themselves with ethical, moral, and political issues rather than cognitive achievement). Similarly, Elder showed that the Great Depression was a setting that significantly affected the development of adolescents and their corresponding adult personalities by showing a similar common personality development across age groups. Baltes' theory also states that the historical socio-cultural setting had an effect on the development of an individual's intelligence. The areas of influence that Baltes thought most important to the development of intelligence were health, education, and work. The first two areas, health, and education, significantly affect adolescent development because healthy children who are educated effectively will tend to develop a higher level of intelligence. The environmental factors, health, and education have been suggested by Neiss and Rowe to have as much effect on intelligence as inherited intelligence.

Non-normative influences are unpredictable and not tied to a certain time in a person's development or to a historical period. They are the unique experiences of an individual, whether biological or environmental, that shape the development process. These could include milestones like earning a master's degree or getting a certain job offer or other events like going through a divorce or coping with the death of a child.

The most important aspect of contextualism as a paradigm is that the three systems of influence work together to affect development. Concerning adolescent development, the age-graded influences would help to explain the similarities within a cohort, the history-graded influences would help to explain the differences between cohorts, and the non-normative influences would explain the idiosyncrasies of each adolescent's

individual development. When all influences are considered together, it provides a broader explanation of an adolescent's development.

Other Contextual Influences on Development: Cohort, Socioeconomic Status, and Culture

What is meant by the word “context”? It means that we are influenced by when and where we live. Our actions, beliefs, and values are a response to the circumstances surrounding us. Sternberg describes contextual intelligence as the ability to understand what is called for in a situation (Sternberg, 1996). The key here is to understand that behaviors, motivations, emotions, and choices are all part of a bigger picture. Our concerns are such because of who we are socially, where we live, and when we live; they are part of a social climate and set of realities that surround us. Important social factors include cohort, social class, gender, race, ethnicity, and age. Let's begin by exploring two of these: cohort and social class.

A **cohort** is a group of people who are born at roughly the same time period in a particular society. Cohorts share histories and contexts for living. Members of a cohort have experienced the same historical events and cultural climates which have an impact on the values, priorities, and goals that may guide their lives. Consider the differences in experiences of someone from the ‘Silent’ generation that lived with constant scarcity and rationing during WWII versus the economic prosperity that followed for the ‘Baby Boomer’ generation and how those historical contexts influence their development.

watch it



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://wisconsin.pressbooks.pub/adolescentpsychology/?p=29#oembed-1>

Video 1.4.1. *Generations Throughout History* describes the normative history-graded influences that shaped the development of seven generations over the past 125 years of United States history. Can you identify your generation? Does the description seem accurate?

Another context that affects our lives is our social standing, socioeconomic status, or social class. **Socioeconomic status** is a way to identify families and households based on their shared levels of

education, income, and occupation. While there is certainly individual variation, members of a social class tend to share similar lifestyles, patterns of consumption, parenting styles, stressors, religious preferences, and other aspects of daily life. We also find differences between social classes in these and other areas of development. Often, those in low socioeconomic groups, people living in poverty, are disadvantaged, lack opportunities, and have different life experiences than those with more financial stability and wealth.

Poverty describes the state of not having access to material resources, wealth, or income, and also includes the lack of opportunity to improve one's standard of living and acquire resources. **Life chances** is a term used to describe someone's access to marketplace resources—essentially, how likely it is in their environment that they might be able to find employment or have a social safety net. Someone who is living in poverty but has high life chances may be able to improve their economic standing, but someone with low life chances will likely have a consistently low standard of living. The term for a person's ability to change their economic status in a society is known as **social mobility**.

When families have low social mobility, they may become trapped in poverty for generations; we refer to this as the **cycle of poverty**. Typically, these families have either limited or nonexistent social and economic resources. There are many disadvantages that collectively work in a circular process to make it virtually impossible for individuals to break the cycle of poverty. They are less likely to have financial capital, education, job skills, reliable transportation, and social capital (connections to people with specialized knowledge or in power). Without these resources, poverty-stricken individuals experience disadvantages that, in turn, increase their poverty.

Additionally, those living in poverty suffer disproportionately from hunger, poor nutrition, and exhibit disproportionately high rates of physical and mental health issues. These illnesses can be disabling, preventing people in poverty from working, thus reducing one's opportunities to improve their social and economic status.

Finally, poverty increases the risk of homelessness. People who are homeless have low access to neighborhood resources, high-status social contacts, or basic services such as a phone line, limiting their ability to improve their economic position, again perpetuating poverty.

Culture is often referred to as a blueprint or guideline shared by a group of people that specifies how to live. It includes ideas about what is right and wrong, what to strive for, what to eat, how to speak, what is valued, as well as what kinds of emotions are called for in certain situations. Culture teaches us how to live in a society and allows us to advance because each new generation can benefit from the solutions found and passed down from previous generations.

Culture is learned from parents, schools, churches, media, friends, and others throughout a lifetime. The kinds of traditions and values that evolve in a particular culture serve to help members function in their society and value their society. We tend to believe that our own culture's practices and expectations are the right ones. This belief that our own culture is superior is called **ethnocentrism** and is a normal by-product of growing up in a culture. It becomes a roadblock, however, when it inhibits understanding of cultural practices from other

societies. Cultural relativity is an appreciation for cultural differences and the understanding that cultural practices are best understood from the standpoint of that particular culture.

Culture is a crucial context for human development, and understanding development requires being able to identify which features of development are culturally based. This understanding is somewhat new and still being explored. So much of what developmental theorists have described in the past has been culturally bound and difficult to apply to various cultural contexts. For example, Erikson's theory that teenagers struggle with identity assumes that all teenagers live in a society in which they have many options and must make an individual choices about their future. In many parts of the world, one's identity is determined by family status or society's dictates. In other words, there is no choice to make.

Even the most biological events can be viewed in cultural contexts that are incredibly varied. Consider two very different cultural responses to menstruation in young girls. In the United States, girls in public schools often receive information on menstruation around 5th grade, get a kit containing feminine hygiene products, and receive some sort of education about sexual health. Contrast this with some developing countries where menstruation is not publicly addressed, or where girls on their period are forced to miss school due to limited access to feminine products or unjust attitudes about menstruation.

How Does socioeconomic status affect language development?

The achievement gap refers to the persistent difference in grades, test scores, and graduation rates that exist among students of different ethnicities, races, and—in certain subjects—sexes (Winerman, 2011). Research suggests that these achievement gaps are strongly influenced by differences in socioeconomic factors that exist among the families of these children. Low-income children perform significantly more poorly than their middle- and high-income peers on a number of educational variables: They have significantly lower standardized test scores, graduation rates, and college entrance rates, and they have much higher school dropout rates. Many of these problems start before the children even enter school.

Psychologists Betty Hart and Todd Risley (2006) spent their careers looking at early language ability and progression of children at various income levels. In one longitudinal study, researchers found that although all the parents in the study engaged and interacted with their children, middle- and high-income parents interacted with their children differently than low-income parents. The researchers found that middle- and high-income parents talk to their children significantly more, starting when the children are infants. By age 3, high-income children knew almost double the number of words known by low-income children, and they heard about 30 million more words than their low-income counterparts (Hart & Risley, 2003). These gaps become more pronounced by

kindergarten, with high-income children scoring 60% higher on achievement tests than their low-income peers (Lee & Burkam, 2002).

There are solutions to this problem. Experts are working with low-income families to encourage them to speak more to their children and designing preschools in which students from diverse economic backgrounds are placed in the same classroom (Schechter & Byeb, 2007).

Development is Multidisciplinary

Any single discipline's account of development across the lifespan would not be able to express all aspects of this theoretical framework. That is why it is suggested explicitly by lifespan researchers that a combination of disciplines is necessary to understand development. Psychologists, sociologists, neuroscientists, anthropologists, educators, economists, historians, medical researchers, and others may all be interested and involved in research related to the normative age-graded, normative history-graded, and nonnormative influences that help shape development. Many disciplines contribute important concepts that integrate knowledge, which may ultimately result in the formation of a new and enriched understanding of development across the lifespan.

THINK IT OVER

- Consider your cohort. Can you identify it? Does it have a name, and if so, what does the name imply? To what extent does your cohort shape your values, thoughts, and aspirations? (Some cohort labels popularized in the media for generations in the United States include Baby Boomers, Generation X, Millennials, and Generation Z.)
- Think of other ways culture may have affected your development. How might cultural differences influence interactions between teachers and students, nurses and patients, or other relationships?

5.

assimilation: new information is incorporated into existing schema

accommodation: existing schema is modified to fit new information

chronosystem: the role that time plays in influencing individual development.

continuous development: the idea that development is a progressive and cumulative process, gradually improving on existing skills

cohort: a group of people who are born at roughly the same period in a particular society. Cohorts share histories and contexts for living[/glossary-definition

conditioned stimuli: a previously neutral stimulus that eventually triggers a conditioned response

conditioned response: This is the learned response to the conditioned stimulus. In the dog example, the dog salivating at the sound of the bell is the conditioned response.

culture: blueprint or guideline shared by a group of people that specifies how to live; passed down from generation to generation; learned from parents and others

cycle of poverty: when families with low social mobility become trapped in poverty for generations

discontinuous development: idea that development takes place in unique stages and occurs at specific times or ages

ego: operating on the reality principle, mediates between the id's demands and the external world.

exosystem: environments in which the individual is not an active participant but still impacts development.

id: the primal, instinctual part driven by the pleasure principle, seeking immediate gratification.

life chances: someone's access to marketplace resources

lifespan perspective: an approach to studying development which emphasizes that development is lifelong, multidimensional, multidirectional, plastic, contextual, and multidisciplinary

macrosystem: the broader society and cultural forces that contribute to individual development

mesosystem: interactions between different microsystems in the child's life.

microsystem: things that have direct contact with the child in their immediate environment.

nature: the influences of biology and genetics on behavior

neutral stimuli: Initially, the stimulus doesn't produce the desired response. For example, the sound of a bell to a dog is initially neutral.

non-normative influences: unpredictable influences not tied to a certain developmental time, personally or historical period

normative age-graded influences: biological and environmental factors that have a strong correlation with chronological age

normative history-graded influences: influences associated with a specific time period that define the broader bio-cultural context in which an individual develops

nurture: environmental, social, and cultural influences of behavior

poverty: the state of not having access to material resources, wealth, or income

punishment: the process of decreasing pattern of behavior as a result of the consequence that follows it.

reinforcement: the process of increasing pattern of behavior as a result of the consequence that follows it.

scaffolding: the guidance and support offered from a more knowledgeable individual to help a learner to bridge the gap between what they already know and their zone of proximal development.

schema: a mental framework that helps organize and interpret information around the world

social mobility: the ability to change one's economic status in a society

socioeconomic status: a way to identify families and households based on their shared levels of education, income, and occupation

superego: acts as a moral compass, striving for perfection and judging the ego's actions.

tabula rasa: the idea that individuals are born without built-in mental content, and all knowledge is derived from experience and perception.

unconditioned stimuli: This stimulus naturally and automatically triggers a response. For example, food in Pavlov's experiment is the UCS, as it naturally makes dogs salivate.

zone of proximal development: the gap between what a learner can do independently and what they can achieve with guidance and support from a more knowledgeable individual.

6.

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PART II

PSYCHOLOGICAL RESEARCH

Learning Objectives

- Explain how the scientific method is used in researching development
- Compare various types and objectives of developmental research
- Describe methods for collecting research data (including observation, survey, case study, content analysis, and secondary content analysis)
- Explain correlational research
- Describe the value of experimental research
- Compare the advantages and disadvantages of developmental research designs (cross-sectional, longitudinal, and sequential)
- Describe challenges associated with conducting research in lifespan development

How do we know what changes and stays the same (and when and why) in development? We rely on research that utilizes the scientific method so that we can have confidence in the findings. How data are collected and analyzed vary by the type of information sought. The design of the study will affect the data and the conclusions that can be drawn from them about actual age changes.

Research in Development

An essential part of learning any science is having a basic knowledge of the techniques used in gathering information. The hallmark of scientific investigation is that of following a set of procedures designed to keep questioning or skepticism alive while describing, explaining, or testing any phenomenon. Not long ago, a friend said to me that he did not trust academicians or researchers because they always seem to change their stories. That, however, is precisely what science is all about; it involves continuously renewing our understanding of the subjects in question and an ongoing investigation of how and why events occur. Science is a vehicle for going on a never-ending journey. In the area of development, we have seen changes in recommendations for nutrition, in explanations of psychological states as people age, and in parenting advice. So think of learning about human development as a lifelong endeavor.

Personal Knowledge

How do we know what we know? Take a moment to identify two things that you know about adolescence. Now, how do you know? Chances are you know these things based on your own history (experiential reality), what others have told you, or cultural ideas (agreement reality) (Seccombe and Warner, 2004). There are several problems with personal inquiry, or drawing conclusions based on our personal experiences. Read the following sentence aloud:

Paris in the
the spring

Are you sure that is what it said? Read it again.

If you read it differently the second time (adding the second “the”), you just experienced one of the problems with relying on personal inquiry; that is, the tendency to see what we believe. Our assumptions very often guide our perceptions; consequently, when we believe something, we tend to see it even if it is not there. Have you heard the saying, “seeing is believing”? Well, the truth is just the opposite: believing is seeing. This problem may just be a result of cognitive ‘blindness,’ or it may be part of a more conscious attempt to support our own views. Confirmation bias is the tendency to look for evidence that we are right, and in so doing, we ignore contradictory evidence.

Philosopher Karl Popper suggested that the distinction between that which is scientific and that which is unscientific is that science is falsifiable; scientific inquiry involves attempts to reject or refute a theory or set of assumptions (Thornton, 2005). A theory that cannot be falsified is not scientific. And much of what we do in personal inquiry involves drawing conclusions based on what we have personally experienced or validating our own experience by discussing what we think is true with others who share the same views.

Science offers a more systematic way to make comparisons and guard against bias. One technique used to avoid sampling bias is to select participants for a study in a random way. This means using a technique to ensure that all members have an equal chance of being selected. Simple random sampling may involve using a set of random numbers as a guide in determining who is to be selected. For example, if we have a list of 400 people and wish to randomly select a smaller group or sample to be studied, we use a list of random numbers and select the case that corresponds with that number (Case 39, 3, 217, etc.). This is preferable to asking only those individuals with whom we are familiar to participate in a study; if we conveniently chose only people we know, we know nothing about those who had no opportunity to be selected. There are many more elaborate techniques that can be used to obtain samples that represent the composition of the population we are studying. But even though a randomly selected representative sample is preferable, it is not always used because of costs and other limitations. As a consumer of research, however, you should know how the sample was obtained and keep this in mind when interpreting results. It is possible that what was found was limited to that sample or similar individuals and not generalizable to everyone else.

7.

The general scientific approach has three fundamental features (Stanovich & Stanovich, 2010). The first is *systematic empiricism*. Empiricism refers to learning based on observation, and scientists learn about the natural world systematically, by carefully planning, making, recording, and analyzing observations of it. The second feature of the scientific approach is that it is concerned with *empirical questions*. These are questions about the way the world actually is and, therefore, can be answered by systematically observing it. The third feature is that it creates *public knowledge*. After asking empirical questions, making observations, and drawing their conclusions, scientists publish their work. This usually means writing an article for publication in a professional journal, in which they put their research question in the context of previous research, describe in detail the methods they used to answer their question, and clearly present their results and conclusions. Publication is an essential feature of science for two reasons. One is that science is a social process—a large-scale collaboration among many researchers distributed across both time and space. Our current scientific knowledge of most topics is based on many different studies conducted by many different researchers who have shared their work with each other over the years. The second is that publication allows science to be self-correcting. Individual scientists understand that despite their best efforts, their methods can be flawed, and their conclusions incorrect. Publication allows others in the scientific community to detect and correct these errors so that, over time, scientific knowledge increasingly reflects the way the world actually is.

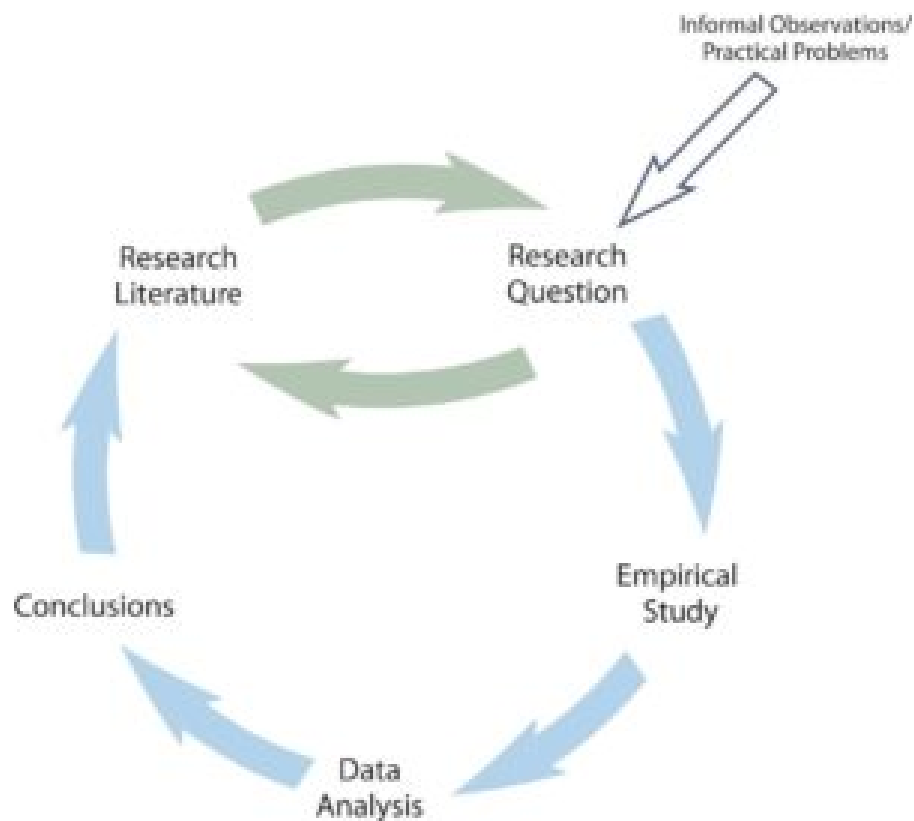


Figure 2.2.1. Simple model of scientific research in psychology.

Figure 2.2.1 is a simple model of scientific research in psychology and presents a more specific model of scientific research in psychology. The researcher (who more often than not is really a small group of researchers) formulates a research question, conducts a study designed to answer the question, analyzes the resulting data, draws conclusions about the answer to the question, and publishes the results so that they become part of the research literature. Because the research literature is one of the primary sources of new research questions, this process can be thought of as a cycle. New research leads to new questions, which leads to new research, and so on. The model also indicates that research questions can originate outside of this cycle, either with informal observations or with practical problems that need to be solved. But even in these cases, the researcher would start by checking the research literature to see if the question had already been answered and to refine it based on what previous research had already found.



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://wisconsin.pressbooks.pub/adolescentpsychology/?p=34#oembed-1>

Video 2.2.1. The Scientific Method explains the basic steps taken for most scientific inquiry.

8.

Understanding Theories

Scientific knowledge is advanced through a process known as the scientific method. Basically, ideas (in the form of theories and hypotheses) are tested against the real world (in the form of empirical observations), and those empirical observations lead to more ideas that are tested against the real world, and so on. In this sense, the scientific process is circular. The types of reasoning within the circle are called deductive and inductive. In **deductive reasoning**, ideas are tested against the empirical world; in **inductive reasoning**, empirical observations lead to new ideas (Figure 2.4). These processes are inseparable, like inhaling and exhaling, but different research approaches place different emphasis on the deductive and inductive aspects.

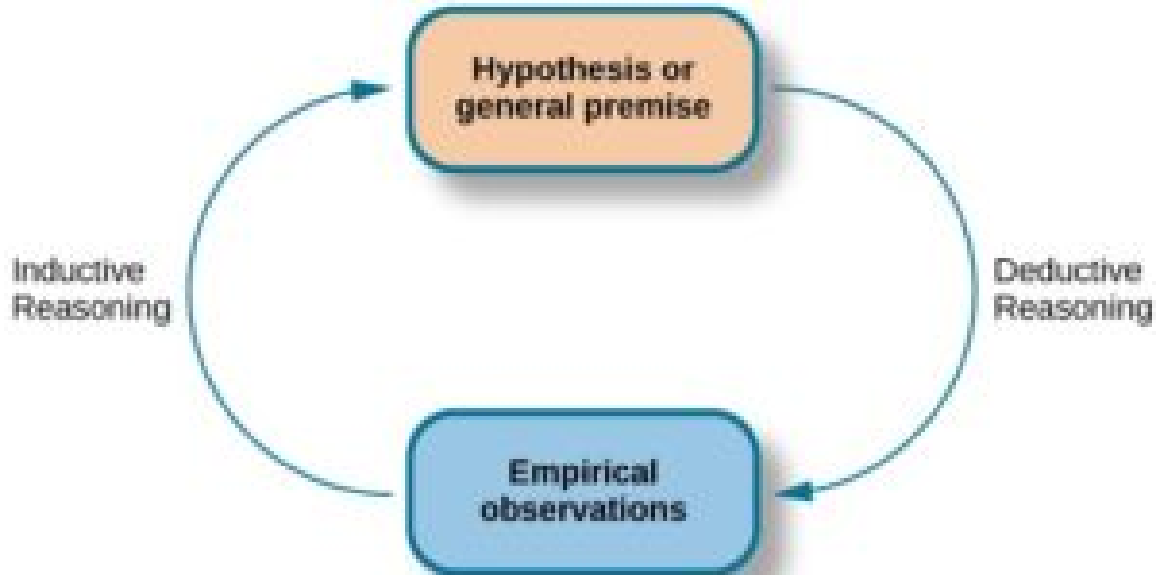


Figure 3.2.1. Psychological research relies on both inductive and deductive reasoning.

In the scientific context, deductive reasoning begins with a generalization—one hypothesis—that is then used to reach logical conclusions about the real world. If the hypothesis is correct, then the logical conclusions reached through deductive reasoning should also be correct. A deductive reasoning argument might go something like this: All living things require energy to survive (this would be your hypothesis). Ducks are living things. Therefore, ducks require energy to survive (logical conclusion). In this example, the hypothesis is correct; therefore, the conclusion is correct as well. Sometimes, however, an incorrect hypothesis may lead to a logical but incorrect conclusion. Consider this argument: all ducks are born with the ability to see. Quackers is a duck. Therefore, Quackers was born with the ability to see. Scientists use deductive reasoning to test their hypotheses empirically. Returning to the example of the ducks, researchers might design a study to test the

hypothesis that if all living things require energy to survive, then ducks will be found to require energy to survive.

Deductive reasoning starts with a generalization that is tested against real-world observations; however, inductive reasoning moves in the opposite direction. Inductive reasoning uses empirical observations to construct broad generalizations. Unlike deductive reasoning, conclusions drawn from inductive reasoning may or may not be correct, regardless of the observations on which they are based. For instance, you may notice that your favorite fruits—apples, bananas, and oranges—all grow on trees; therefore, you assume that all fruit must grow on trees. This would be an example of inductive reasoning, and the existence of strawberries, blueberries, and kiwi demonstrate that this generalization is not correct despite it being based on several direct observations. Scientists use inductive reasoning to formulate theories, which in turn generate hypotheses that are tested with deductive reasoning. In the end, science involves both deductive and inductive processes.

For example, case studies are heavily weighted on the side of empirical observations. Thus, case studies are closely associated with inductive processes as researchers gather massive amounts of observations and seek interesting patterns (new ideas) in the data. Experimental research, on the other hand, puts great emphasis on deductive reasoning.

What is a Theory?

We have briefly discussed theory in the previous module. A **theory** is a well-developed set of ideas that propose an explanation for observed phenomena. Developmental theories offer explanations about how we develop, why we change over time and the kinds of influences that impact development. They are repeatedly checked against the world, but they tend to be too complex to be tested all at once; instead, researchers create hypotheses to test specific aspects of a theory.

A **hypothesis** is a testable prediction about how the world will behave if our idea is correct, and it is often worded as an if-then statement (e.g., if I study all night, I will get a passing grade on the test). The hypothesis is critical because it bridges the gap between the realm of ideas and the real world. As specific hypotheses are tested, theories are modified and refined to reflect and incorporate the result of these tests (Figure 2.1).

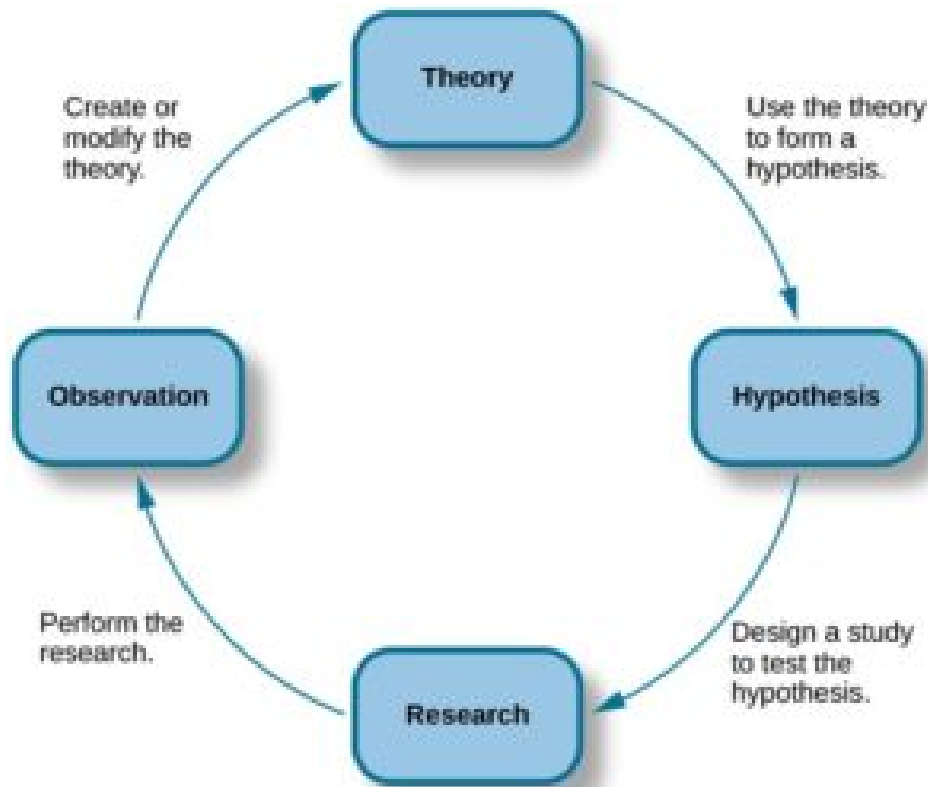


Figure 2.2.1. The scientific method of research includes proposing hypotheses, conducting research, and creating or modifying theories based on results.

To see how this process works, let us consider a specific theory and a hypothesis that might be generated from that theory. The James-Lange theory of emotion asserts that emotional experience relies on the physiological arousal associated with the emotional state. If you walked out of your home and discovered a very aggressive snake waiting on your doorstep, your heart would begin to race and your stomach churn. According to the James-Lange theory, these physiological changes would result in your feeling of fear. A hypothesis that could be derived from this theory might be that *a person who is unaware of the physiological arousal that the sight of the snake elicits will not feel fear.*

A scientific hypothesis is also **falsifiable** or capable of being shown to be incorrect. For example, Sigmund Freud had lots of interesting ideas to explain various human behaviors; however, a major criticism of Freud's theories is that many of his ideas cannot be empirically tested and thus are not falsifiable. Despite this, Freud's theories are widely taught in introductory psychology texts because of their historical significance for personality psychology and psychotherapy, and these remain the root of all modern forms of therapy.

In contrast, the James-Lange theory does generate falsifiable hypotheses, such as the one described above. Some individuals who suffer significant injuries to their spinal columns are unable to feel the bodily changes that often accompany emotional experiences. Therefore, we could test the hypothesis by determining how emotional experiences differ between individuals who can detect these changes in their physiological arousal and those who do not. In fact, this research has been conducted, and while the emotional experiences of

people deprived of an awareness of their physiological arousal may be less intense, they still experience emotion (Chwalisz, Diener, & Gallagher, 1988).

Scientific research's dependence on falsifiability allows for high confidence in the information that it produces. Typically, by the time information is accepted by the scientific community, it has been tested repeatedly. However, in the early years of studying development, theories were often based on philosophy and inductive reasoning, and could not always provide empirical evidence to support these ideas. In the late 1800s, a transformation occurred when philosophy met physiology and adopted the scientific methods used by the physical sciences to explore questions about behavior and the mind.



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Video 2.2.1. *Hypothesis vs Theory* explains the differences between the two.

9.

There are many research methods available to psychologists in their efforts to understand, describe, and explain behavior. Some methods rely on observational techniques. Other approaches involve interactions between the researcher and the individuals who are being studied—ranging from a series of simple questions to extensive, in-depth interviews—to well-controlled experiments. The main categories of psychological research are descriptive, correlational, and experimental research. Each of these research methods has unique strengths and weaknesses, and each method may only be appropriate for certain types of research questions.

Descriptive research, as its name implies, is aimed to describe a phenomenon. It is distinct from **correlational research**, in which researchers formally test whether a relationship exists between two or more variables. **Experimental research** goes a step further beyond descriptive and correlational research and randomly assigns people to different conditions, using hypothesis testing to make inferences about causal relationships between variables. We will discuss each of these methods more in-depth later.

Descriptive Studies

Research studies that do not test specific relationships between variables are called **descriptive studies**. For this method, the research question or hypothesis can be about a single variable (e.g., How accurate are people's first impressions?) or can be a broad and exploratory question (e.g., What is it like to be a working mother diagnosed with depression?). The variable of the study is measured and reported without any further relationship analysis. A researcher might choose this method if they only needed to report information, such as a tally, an average, or a list of responses. Descriptive research can answer interesting and important questions, but what it cannot do is answer questions about relationships between variables.



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Video 2.3.1. *Descriptive Research Design* provides explanation and examples for quantitative descriptive research. A closed-captioned version of this video is available [here](#).

Correlational Studies

Correlation means that there is a relationship between two or more variables (such as ice cream consumption and crime), but this relationship does not necessarily imply cause and effect. When two variables are correlated, it simply means that as one variable changes, so does the other. We can measure correlation by calculating a statistic known as a correlation coefficient. A **correlation coefficient** is a number from -1 to +1 that indicates the strength and direction of the relationship between variables. The correlation coefficient is usually represented by the letter r .

The number portion of the correlation coefficient indicates the strength of the relationship. The closer the number is to 1 (be it negative or positive), the more strongly related the variables are, and the more predictable changes in one variable will be as the other variable changes. The closer the number is to zero, the weaker the relationship and the less predictable the relationship between the variables becomes. For instance, a correlation coefficient of 0.9 indicates a far stronger relationship than a correlation coefficient of 0.3. If the variables are not related to one another at all, the correlation coefficient is 0. The example above about ice cream and crime is an example of two variables that we might expect to have no relationship to each other.

The sign—positive or negative—of the correlation coefficient indicates the direction of the relationship (Figure 2.7.1). A **positive correlation** means that the variables move in the same direction. Put another way, it means that as one variable increases so does the other, and conversely, when one variable decreases so does the other. A **negative correlation** means that the variables move in opposite directions. If two variables are negatively correlated, a decrease in one variable is associated with an increase in the other and vice versa.

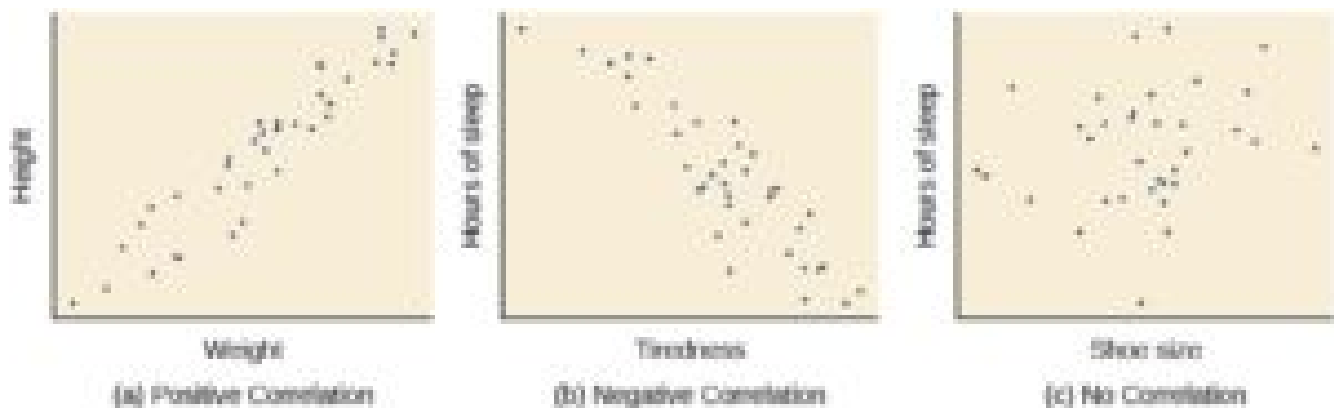


Figure 2.3.2. Scatterplots are a graphical view of the strength and direction of correlations. The stronger the correlation, the closer the data points are to a straight line. In these examples, we see that there is (a) a positive correlation between weight and height, (b) a negative correlation between tiredness and hours of sleep, and (c) no correlation between shoe size and hours of sleep.

The example of ice cream and crime rates is a positive correlation because both variables increase when temperatures are warmer. Other examples of positive correlations are the relationship between an individual's height and weight or the relationship between a person's age and number of wrinkles. One might expect a

negative correlation to exist between someone's tiredness during the day and the number of hours they slept the previous night: the amount of sleep decreases as the feelings of tiredness increase. In a real-world example of negative correlation, student researchers at the University of Minnesota found a weak negative correlation ($r = -0.29$) between the average number of days per week that students got fewer than 5 hours of sleep and their GPA (Lowry, Dean, & Manders, 2010). Keep in mind that a negative correlation is not the same as no correlation. For example, we would probably find no correlation between hours of sleep and shoe size.



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Video 2.3.1. *Correlational Research Design* provides explanation and examples for correlational research. A closed-captioned version of this video is available [here](#).

Exercises

Manipulate this [interactive scatterplot](#) to practice your understanding of positive and negative correlations.

As mentioned earlier, correlations have predictive value. Imagine that you are on the admissions committee of a major university. You are faced with a massive number of applications, but you are able to accommodate only a small percentage of the applicant pool. How might you decide who should be admitted? You might try to correlate your current students' college GPA with their scores on standardized tests like the SAT or ACT. By observing which correlations were strongest for your current students, you could use this information to predict the relative success of those students who have applied for admission into the university.

Correlation Does Not Indicate Causation

Correlational research is useful because it allows us to discover the strength and direction of relationships that exist between two variables. However, correlation is limited because establishing the existence of a relationship tells us little about **cause and effect**. While variables are sometimes correlated because one does cause the other, it could also be that some other factor, a **confounding variable**, is actually causing the systematic

movement in our variables of interest. In the ice cream/crime rate example mentioned earlier, temperature is a confounding variable that could account for the relationship between the two variables.

Even when we cannot point to clear confounding variables, we should not assume that a correlation between two variables implies that one variable causes changes in another. This can be frustrating when a cause-and-effect relationship seems clear and intuitive. Think back to our discussion of the research done by the American Cancer Society and how their research projects were some of the first demonstrations of the link between smoking and cancer. It seems reasonable to assume that smoking causes cancer, but if we were limited to correlational research, we would be overstepping our bounds by making this assumption.

Unfortunately, people mistakenly make claims of causation as a function of correlations all the time. Such claims are especially common in advertisements and news stories. For example, recent research found that people who eat cereal on a regular basis achieve healthier weights than those who rarely eat cereal (Frantzen, Treviño, Echon, Garcia-Dominic, & DiMarco, 2013; Barton et al., 2005). Guess how the cereal companies report this finding. Does eating cereal really cause an individual to maintain a healthy weight, or are there other possible explanations, such as, someone at a healthy weight is more likely to regularly eat a healthy breakfast than someone who is obese or someone who avoids meals in an attempt to diet? While correlational research is invaluable in identifying relationships among variables, a significant limitation is the inability to establish causality. Psychologists want to make statements about cause and effect, but the only way to do that is to conduct an experiment to answer a research question. The next section describes how scientific experiments incorporate methods that eliminate or control for alternative explanations, which allow researchers to explore how changes in one variable cause changes in another variable.



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Video 2.3.2. *Correlation and Causality* provides explanation for why correlation does not imply causality.

Illusory Correlations

The temptation to make erroneous cause-and-effect statements based on correlational research is not the only way we tend to misinterpret data. We also tend to make the mistake of illusory correlations, especially with unsystematic observations. **Illusory correlations**, or false correlations, occur when people believe that relationships exist between two things when no such relationship exists. One well-known illusory correlation is the supposed effect that the moon's phases have on human behavior. Many people passionately assert that

human behavior is affected by the phase of the moon, and specifically, that people act strangely when the moon is full (Figure 2).



Figure 2. Many people believe that a full moon makes people behave oddly. (credit: Cory Zanker)

There is no denying that the moon exerts a powerful influence on our planet. The ebb and flow of the ocean's tides are tightly tied to the gravitational forces of the moon. Many people believe, therefore, that it is logical that we are affected by the moon as well. After all, our bodies are largely made up of water. A meta-analysis of nearly 40 studies consistently demonstrated, however, that the relationship between the moon and our behavior does not exist (Rotton & Kelly, 1985). While we may pay more attention to odd behavior during the full phase of the moon, the rates of odd behavior remain constant throughout the

lunar cycle. Why are we so apt to believe in illusory correlations like this? Often we read or hear about them and simply accept the information as valid. Or, we have a hunch about how something works and then look for evidence to support that hunch, ignoring evidence that would tell us our hunch is false; this is known as **confirmation bias**. Other times, we find illusory correlations based on the information that comes most easily to mind, even if that information is severely limited. And while we may feel confident that we can use these relationships to better understand and predict the world around us, illusory correlations can have significant drawbacks. For example, research suggests that illusory correlations—in which certain behaviors are inaccurately attributed to certain groups—are involved in the formation of prejudicial attitudes that can ultimately lead to discriminatory behavior (Fiedler, 2004).

As you've learned, the only way to establish that there is a cause-and-effect relationship between two variables is to conduct a scientific experiment. Experiment has a different meaning in the scientific context than in everyday life. In everyday conversation, we often use it to describe trying something for the first time, such as experimenting with a new hairstyle or new food. However, in the scientific context, an experiment has precise requirements for design and implementation.



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Video 2.3.3. *Experimental Research Design* provides explanation and examples for correlational research. A closed-captioned version of this video is available [here](#).

Experimental Research

The Experimental Hypothesis

In order to conduct an experiment, a researcher must have a specific hypothesis to be tested. As you've learned, hypotheses can be formulated either through direct observation of the real world or after careful review of previous research. For example, if you think that children should not be allowed to watch violent programming on television because doing so would cause them to behave more violently, then you have basically formulated a hypothesis—namely, that watching violent television programs causes children to behave more violently. How might you have arrived at this particular hypothesis? You may have younger relatives who watch cartoons featuring characters using martial arts to save the world from evildoers, with an impressive array of punching, kicking, and defensive postures. You notice that after watching these programs for a while, your young relatives mimic the fighting behavior of the characters portrayed in the cartoon. Seeing behavior like this right after a child watches violent television programming might lead you to hypothesize that viewing violent television programming leads to an increase in the display of violent behaviors. These sorts of personal observations are what often lead us to formulate a specific hypothesis, but we cannot use limited personal observations and anecdotal evidence to test our hypothesis rigorously. Instead, to find out if real-world data supports our hypothesis, we have to conduct an experiment.

Designing an Experiment

The most basic experimental design involves two groups: the experimental group and the control group. The two groups are designed to be the same except for one difference— experimental manipulation. The **experimental group** gets the experimental manipulation—that is, the treatment or variable being tested (in this case, violent TV images)—and the **control group** does not. Since experimental manipulation is the only difference between the experimental and control groups, we can be sure that any differences between the two are due to experimental manipulation rather than chance.

In our example of how violent television programming might affect violent behavior in children, we have the experimental group view violent television programming for a specified time and then measure their violent behavior. We measure the violent behavior in our control group after they watch nonviolent television programming for the same amount of time. It is important for the control group to be treated similarly to the experimental group, with the exception that the control group does not receive the experimental manipulation.

Therefore, we have the control group watch non-violent television programming for the same amount of time as the experimental group.

We also need to define precisely, or operationalize, what is considered violent and nonviolent. An **operational definition** is a description of how we will measure our variables, and it is important in allowing others to understand exactly how and what a researcher measures in a particular experiment. In operationalizing violent behavior, we might choose to count only physical acts like kicking or punching as instances of this behavior, or we also may choose to include angry verbal exchanges. Whatever we determine, it is important that we operationalize violent behavior in such a way that anyone who hears about our study for the first time knows exactly what we mean by violence. This aids peoples' ability to interpret our data as well as their capacity to repeat our experiment should they choose to do so.

Once we have operationalized what is considered violent television programming and what is considered violent behavior from our experiment participants, we need to establish how we will run our experiment. In this case, we might have participants watch a 30-minute television program (either violent or nonviolent, depending on their group membership) before sending them out to a playground for an hour where their behavior is observed and the number and type of violent acts are recorded.

Ideally, the people who observe and record the children's behavior are unaware of who was assigned to the experimental or control group, in order to control for experimenter bias. **Experimenter bias** refers to the possibility that a researcher's expectations might skew the results of the study. Remember, conducting an experiment requires a lot of planning, and the people involved in the research project have a vested interest in supporting their hypotheses. If the observers knew which child was in which group, it might influence how much attention they paid to each child's behavior as well as how they interpreted that behavior. By being blind to which child is in which group, we protect against those biases. This situation is a **single-blind study**, meaning that the participants are unaware as to which group they are in (experiment or control group) while the researcher knows which participants are in each group.

In a **double-blind study**, both the researchers and the participants are blind to group assignments. Why would a researcher want to run a study where no one knows who is in which group? Because by doing so, we can control for both experimenter and participant expectations. If you are familiar with the phrase **placebo effect**, you already have some idea as to why this is an important consideration. The placebo effect occurs when people's expectations or beliefs influence or determine their experience in a given situation. In other words, simply expecting something to happen can actually make it happen.



The placebo effect is commonly described in terms of testing the effectiveness of a new medication. Imagine that you work in a pharmaceutical company, and you think you have a new drug that is effective in treating depression. To demonstrate that your medication is effective, you run an experiment with two groups: The experimental group receives the medication, and the control group does not. But you don't want participants to know whether they received the drug or not.

Why is that? Imagine that you are a participant in this study, and you have just taken a pill that you think will improve your mood. Because you expect the pill to have an effect, you might feel better simply because you took the pill and not because of any drug actually contained in the pill—this is the placebo effect.

To make sure that any effects on mood are due to the drug and not due to expectations, the control group receives a placebo (in this case, a sugar pill). Now everyone gets a pill, and once again, neither the researcher nor the experimental participants know who got the drug and who got the sugar pill. Any differences in mood between the experimental and control groups can now be attributed to the drug itself rather than to experimenter bias or participant expectations.



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Video 2.3.4. *Introduction to Experimental Design* introduces fundamental elements for experimental research design.

<https://assessments.lumenlearning.com/assessments/2731>

Independent and Dependent Variables

In a research experiment, we strive to study whether changes in one thing cause changes in another. To achieve this, we must pay attention to two important variables, or things that can be changed, in any experimental study: the independent variable and the dependent variable. An **independent variable** is manipulated or controlled by the experimenter. In a well-designed experimental study, the independent variable is the only important difference between the experimental and control groups. In our example of how violent television programs affect children's display of violent behavior, the independent variable is the type of program—violent or nonviolent—viewed by participants in the study (Figure 2.3). A **dependent variable** is what the researcher

measures to see how much effect the independent variable had. In our example, the dependent variable is the number of violent acts displayed by the experimental participants.

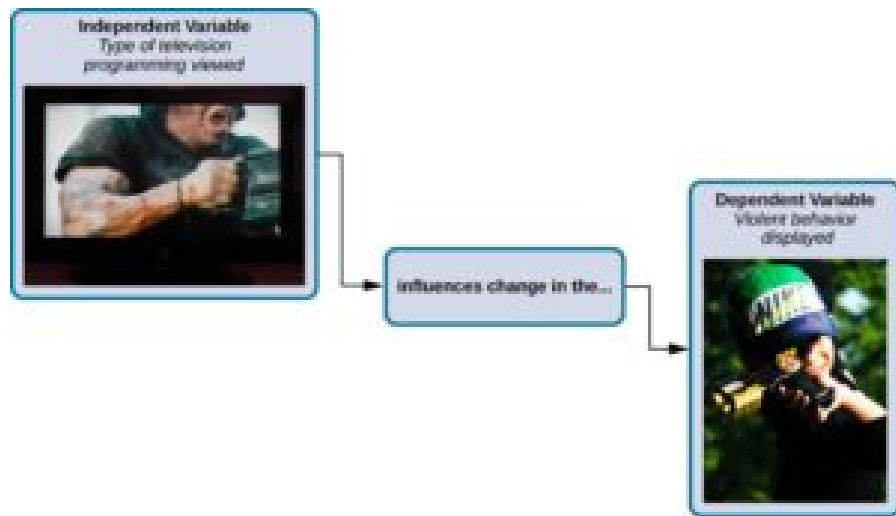


Figure 2.3.3. In an experiment, manipulations of the independent variable are expected to result in changes in the dependent variable.

We expect that the dependent variable will change as a function of the independent variable. In other words, the dependent variable *depends* on the independent variable. A good way to think about the relationship between the independent and dependent variables is with this question: What effect does the independent variable have on the dependent variable? Returning to our example, what effect does watching a half-hour of violent television programming or nonviolent television programming have on the number of incidents of physical aggression displayed on the playground?

Selecting and Assigning Experimental Participants

Now that our study is designed, we need to obtain a sample of individuals to include in our experiment. Our study involves human participants, so we need to determine who to include. **Participants** are the subjects of psychological research, and as the name implies, individuals who are involved in psychological research actively participate in the process. Often, psychological research projects rely on college students to serve as participants. In fact, the vast majority of research in psychology subfields has historically involved students as research participants (Sears, 1986; Arnett, 2008). But are college students truly representative of the general population? College students tend to be younger, more educated, more liberal, and less diverse than the general population. Although using students as test subjects is an accepted practice, relying on such a limited pool of research participants can be problematic because it is difficult to generalize findings to the larger population.

Our hypothetical experiment involves children, and we must first generate a sample of child participants. Samples are used because populations are usually too large to reasonably involve every member in our particular experiment (Figure 2.4). If possible, we should use a random sample (there are other types of

samples, but for the purposes of this chapter, we will focus on random samples). A **random sample** is a subset of a larger population in which every member of the population has an equal chance of being selected. Random samples are preferred because if the sample is large enough we can be reasonably sure that the participating individuals are representative of the larger population. This means that the percentages of characteristics in the sample—sex, ethnicity, socioeconomic level, and any other characteristics that might affect the results—are close to those percentages in the larger population.

In our example, let's say we decide our population of interest is fourth graders. But all fourth graders is a very large population, so we need to be more specific; instead, we might say our population of interest is all fourth graders in a particular city. We should include students from various income brackets, family situations, races, ethnicities, religions, and geographic areas of town. With this more manageable population, we can work with the local schools in selecting a random sample of around 200 fourth-graders that we want to participate in our experiment.

In summary, because we cannot test all of the fourth graders in a city, we want to find a group of about 200 that reflects the composition of that city. With a representative group, we can generalize our findings to the larger population without fear of our sample being biased in some way.

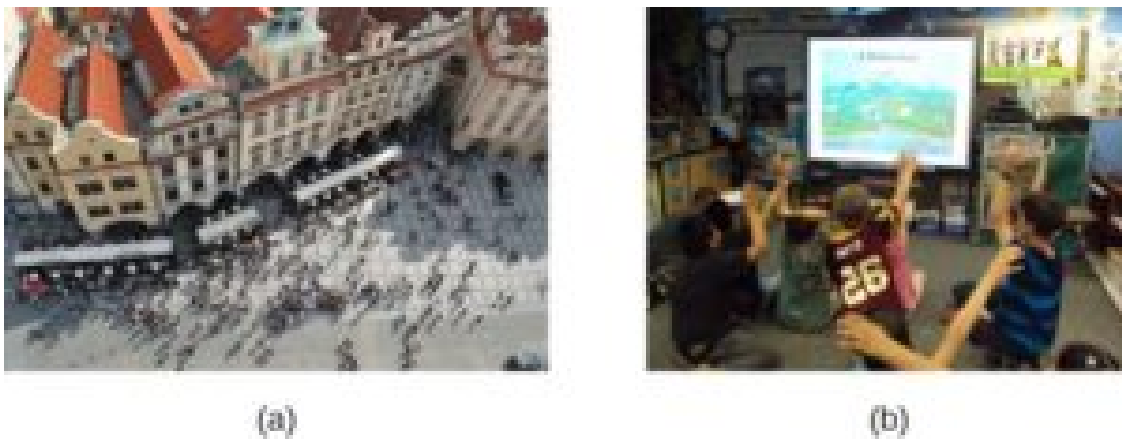


Figure 2.3.4. Researchers may work with (a) a large population or (b) a sample group that is a subset of the larger population.

Now that we have a sample, the next step of the experimental process is to split the participants into experimental and control groups through random assignment. With **random assignment**, all participants have an equal chance of being assigned to either group. There is statistical software that will randomly assign each of the fourth graders in the sample to either the experimental or the control group.

Random assignment is critical for sound experimental design. With sufficiently large samples, random assignment makes it unlikely that there are systematic differences between the groups. So, for instance, it would be improbable that we would get one group composed entirely of males, a given ethnic identity, or a given religious ideology. This is important because if the groups were systematically different before the experiment began, we would not know the origin of any differences we find between the groups: Were the differences preexisting, or were they caused by manipulation of the independent variable? Random assignment

allows us to assume that any differences observed between experimental and control groups result from the manipulation of the independent variable.

Exercises

Use this [online tool](#) to generate randomized numbers instantly and to learn more about random sampling and assignments.

Issues to Consider

While experiments allow scientists to make cause-and-effect claims, they are not without problems. True experiments require the experimenter to manipulate an independent variable, and that can complicate many questions that psychologists might want to address. For instance, imagine that you want to know what effect sex (the independent variable) has on spatial memory (the dependent variable). Although you can certainly look for differences between males and females on a task that taps into spatial memory, you cannot directly control a person's sex. We categorize this type of research approach as quasi-experimental and recognize that we cannot make cause-and-effect claims in these circumstances.

Experimenters are also limited by ethical constraints. For instance, you would not be able to conduct an experiment designed to determine if experiencing abuse as a child leads to lower levels of self-esteem among adults. To conduct such an experiment, you would need to randomly assign some experimental participants to a group that receives abuse, and that experiment would be unethical.

Furthermore, to establish a causal relationship between the independent and dependent variables, the only difference between the experimental group and the control group should be the independent variable itself. However, in practice, it is often difficult to control for all potential differences between the two groups. This can lead to a **third variable problem**, where the observed effect is actually caused by an unaccounted-for variable rather than the independent variable. For example, if children in the experimental group watch a violent TV program that is less engaging than the nonviolent program shown to the control group, their increased aggressive behavior may be due to boredom rather than exposure to violence. In this case, boredom serves as the third variable that confounds the results.

Interpreting Experimental Findings

Once data is collected from both the experimental and the control groups, a **statistical analysis** is conducted to find out if there are meaningful differences between the two groups. The statistical analysis determines how likely any difference found is due to chance (and thus not meaningful). In psychology, group

differences are considered meaningful, or significant, if the odds that these differences occurred by chance alone are 5 percent or less. Stated another way, if we repeated this experiment 100 times, we would expect to find the same results at least 95 times out of 100.

The greatest strength of experiments is the ability to assert that any significant differences in the findings are caused by the independent variable. This occurs because random selection, random assignment, and a design that limits the effects of both experimenter bias and participant expectancy should create groups that are similar in composition and treatment. Therefore, any difference between the groups is attributable to the independent variable, and now we can finally make a causal statement. If we find that watching a violent television program results in more violent behavior than watching a nonviolent program, we can safely say that watching violent television programs causes an increase in the display of violent behavior.

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Summary on Research Design

Up to this point, we have discussed three major research designs. Each design serves different purposes and comes with its own set of advantages and disadvantages. Psychologists carefully choose the research design that best fits the specific question they are trying to answer, ensuring that the method aligns with the goals of the study.

Table 2.3.1. Comparison of research design methods

Research design	Goal	Advantages	Disadvantages
Descriptive	To create a snapshot of the current state of affairs	Provides a relatively complete picture of what is occurring at a given time. Allows the development of questions for further study.	Does not assess relationships among variables. May be unethical if participants do not know they are being observed.
Correlational	To assess the relationships between and among two or more variables	Allows testing of expected relationships between and among variables and the making of predictions. Can assess these relationships in everyday life events.	Cannot be used to draw inferences about the causal relationships between and among the variables.
Experimental	To assess the causal impact of one or more experimental manipulations on a dependent variable	Allows drawing of conclusions about the causal relationships among variables.	Cannot experimentally manipulate many important variables. May be expensive and time-consuming.

Source: Stangor, 2011.

10.

Developmental Research Designs

Sometimes, especially in developmental research, the researcher is interested in examining changes over time and will need to consider a research design that will capture these changes. Remember, *research methods* are tools that are used to collect information, while **research design** is the strategy or blueprint for deciding how to collect and analyze information. Research design dictates which methods are used and how. There are three types of developmental research designs: cross-sectional, longitudinal, and sequential.



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Video 2.4.1. *Developmental Research Design* summarizes the benefits of challenges of the three developmental design models.

Cross-Sectional Designs

The majority of developmental studies use cross-sectional designs because they are less time-consuming and less expensive than other developmental designs. **Cross-sectional research** designs are used to examine behavior in participants of different ages who are tested at the same point in time. Let's suppose that researchers are interested in the relationship between intelligence and aging. They might have a hypothesis that intelligence declines as people get older. The researchers might choose to give a particular intelligence test to individuals who are 20 years old, individuals who are 50 years old, and individuals who are 80 years old at the same time and compare the data from each age group. This research is cross-sectional in design because the researchers plan to examine the intelligence scores of individuals of different ages within the same study at the same time; they are taking a "cross-section" of people at one point in time. Let's say that the comparisons find that the 80-year-old adults score lower on the intelligence test than the 50-year-old adults, and the 50-year-old adults score lower on the intelligence test than the 20-year-old adults. Based on these data, the researchers might conclude that individuals become less intelligent as they get older. Would that be a valid (accurate) interpretation of the results?

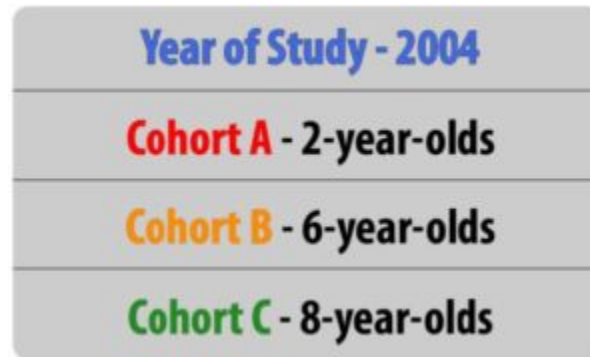


Figure 2.4.1. Example of cross-sectional research design

No, that would not be a valid conclusion because the researchers did not follow individuals as they aged from 20 to 50 to 80 years old. One of the primary limitations of cross-sectional research is that the results yield information about age *differences* not necessarily *changes* over time. That is, although the study described above can show that the 80-year-olds scored lower on the intelligence test than the 50-year-olds, and the 50-year-olds scored lower than the 20-year-olds, the data used for this conclusion were collected from different individuals (or groups). It could be, for instance, that when these 20-year-olds get older, they will still score just as high on the intelligence test as they did at age 20. Similarly, maybe the 80-year-olds would have scored relatively low on the intelligence test when they were young; the researchers don't know for certain because they did not follow the same individuals as they got older.

With each cohort being members of a different generation, it is also possible that the differences found between the groups are not due to age, *per se*, but due to **cohort effects**. Differences between these cohorts' IQ results could be due to differences in life experiences specific to their generation, such as differences in education, economic conditions, advances in technology, or changes in health and nutrition standards, and not due to age-related changes.

Another disadvantage of cross-sectional research is that it is limited to one time of measurement. Data are collected at one point in time, and it's possible that something could have happened in that year in history that affected all of the participants, although possibly each cohort may have been affected differently.

Longitudinal Research Designs



Longitudinal research involves beginning with a group of people who may be of the same age and background (cohort) and measuring them repeatedly over a long period of time. One of the benefits of this type of research is that people can be followed through time and be compared with themselves when they were younger; therefore, changes with age over time are measured. What would be the advantages and disadvantages of longitudinal research? Problems with this type of research

include being expensive, taking a long time, and subjects dropping out over time.

Longitudinal research designs are used to examine behavior in the same individuals over time. For instance, with our example of studying intelligence and aging, a researcher might conduct a longitudinal study to examine whether 20-year-olds become less intelligent with age over time. To this end, a researcher might give an intelligence test to individuals when they are 20 years old, again when they are 50 years old, and then again when they are 80 years old. This study is longitudinal in nature because the researcher plans to study the same individuals as they age. Based on these data, the pattern of intelligence and age might look different than from the cross-sectional research; it might be found that participants' intelligence scores are higher at age 50 than at age 20 and then remain stable or decline a little by age 80. How can that be when cross-sectional research revealed declines in intelligence with age?

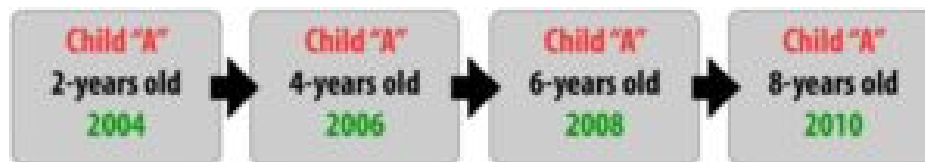


Figure 2.4.2. Example of a longitudinal research design

Since longitudinal research happens over a period of time (which could be short term, as in months, but is often longer, as in years), there is a risk of attrition. **Attrition** occurs when participants fail to complete all portions of a study. Participants may move, change their phone numbers, die, or simply become disinterested in participating over time. Researchers should account for the possibility of attrition by enrolling a larger sample into their study initially, as some participants will likely drop out over time. There is also something known as **selective attrition**—this means that certain groups of individuals may tend to drop out. It is often the least healthy, least educated, and lower socioeconomic participants who tend to drop out over time. That means that the remaining participants may no longer be representative of the whole population, as they are, in general, healthier, better educated, and have more money. This could be a factor in why our hypothetical research found a more optimistic picture of intelligence and aging as the years went by. What can researchers

do about selective attrition? At each time of testing, they could randomly recruit more participants from the same cohort as the original members to replace those who have dropped out.

The results from longitudinal studies may also be impacted by repeated assessments. Consider how well you would do on a math test if you were given the exact same exam every day for a week. Your performance would likely improve over time, not necessarily because you developed better math abilities, but because you were continuously practicing the same math problems. This phenomenon is known as a practice effect. Practice effects occur when participants become better at a task over time because they have done it again and again (not due to natural psychological development). So our participants may have become familiar with the intelligence test each time (and with the computerized testing administration).

Another limitation of longitudinal research is that the data are limited to only one cohort. As an example, think about how comfortable the participants in the 2010 cohort of 20-year-olds are with computers. Since only one cohort is being studied, there is no way to know if findings would be different from other cohorts. In addition, changes that are found as individuals age over time could be due to age or to time of measurement effects. That is, the participants are tested at different periods in history, so the variables of age and time of measurement could be confounded (mixed up). For example, what if there is a major shift in workplace training and education between 2020 and 2040, and many of the participants experience a lot more formal education in adulthood, which positively impacts their intelligence scores in 2040? Researchers wouldn't know if the intelligence scores increased due to growing older or due to a more educated workforce over time between measurements.

Finally, the length of a longitudinal study can introduce additional challenges, particularly due to theoretical and methodological changes over time. These changes can make the findings harder to interpret or generalize. For example, imagine we assess participants' intelligence at age 20 and then again at age 50. Over the course of 30 years, intelligence research may evolve significantly, leading to the development of new testing tools. As a result, the intelligence test used at age 50 may differ substantially from the one used at age 20. Any differences in scores between the two time points might not reflect actual changes in the participant's cognitive ability, but rather differences in the instruments themselves.

Sequential Research Designs

Sequential research designs include elements of both longitudinal and cross-sectional research designs. Similar to longitudinal designs, sequential research features participants who are followed over time; similar to cross-sectional designs, sequential research includes participants of different ages. This research design is also distinct from those that have been discussed previously in that individuals of different ages are enrolled into a study at various points in time to examine age-related changes, development within the same individuals as they age, and to account for the possibility of cohort and/or time of measurement effects

Consider, once again, our example of intelligence and aging. In a study with a sequential design, a researcher might recruit three separate groups of participants (Groups A, B, and C). Group A would be recruited when

they are 20 years old in 2010 and would be tested again when they are 50 and 80 years old in 2040 and 2070, respectively (similar in design to the longitudinal study described previously). Group B would be recruited when they are 20 years old in 2040 and would be tested again when they are 50 years old in 2070. Group C would be recruited when they are 20 years old in 2070, and so on.

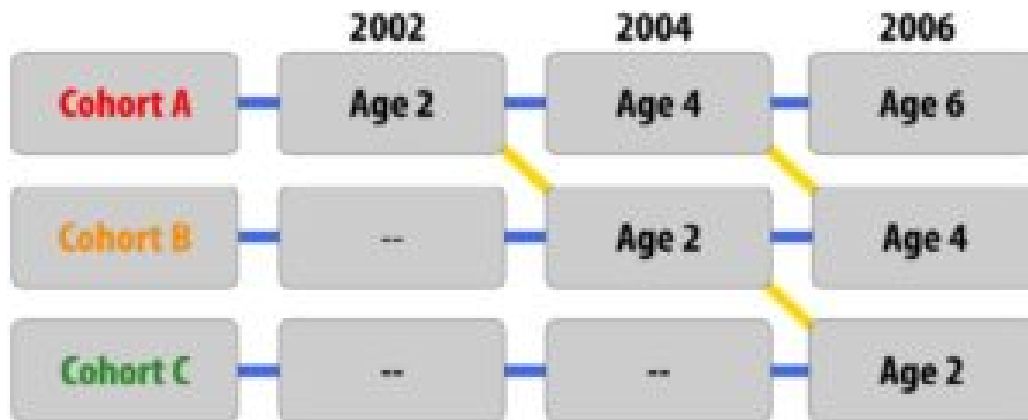


Figure 2.4.3. Example of sequential research design

Studies with sequential designs are powerful because they allow for both longitudinal and cross-sectional comparisons—changes and/or stability with age over time can be measured and compared with differences between age and cohort groups. This research design also allows for the examination of cohort and time of measurement effects. For example, the researcher could examine the intelligence scores of 20-year-olds at different times in history and different cohorts (follow the yellow diagonal lines in figure 3). This might be examined by researchers who are interested in sociocultural and historical changes (because we know that lifespan development is multidisciplinary). One way of looking at the usefulness of the various developmental research designs was described by Schaie and Baltes (1975): cross-sectional and longitudinal designs might reveal change patterns while sequential designs might identify developmental origins for the observed change patterns.

Since they include elements of longitudinal and cross-sectional designs, sequential research has many of the same strengths and limitations as these other approaches. For example, sequential work may require less time and effort than longitudinal research (if data are collected more frequently than over the 30-year spans in our example) but more time and effort than cross-sectional research. Although practice effects may be an issue if participants are asked to complete the same tasks or assessments over time, attrition may be less problematic than what is commonly experienced in longitudinal research since participants may not have to remain involved in the study for such a long period of time.

Comparing Developmental Research Designs

When considering the best research design to use in their research, scientists think about their main research

question and the best way to come up with an answer. A table of advantages and disadvantages for each of the described research designs is provided here to help you as you consider what sorts of studies would be best conducted using each of these different approaches.

Table 2.4.1. Advantages and disadvantages of different research designs

	Advantages	Disadvantages
Cross-Sectional	• Examines changes between participants of different ages at the same point in time • Provides information on age differences • Efficient and cost-effective	• Cannot examine change over time • Limited to one time in history • Cohort differences confounded with age differences
Longitudinal	• Examines changes within individuals over time • Provides a developmental analysis	• Expensive • Takes a long time • Participant attrition • Possibility of practice effects • Limited to one cohort • Time in history effects confounded with age changes
Sequential	• Examines changes within individuals over time • Examines changes between participants of different ages at the same point in time • Can be used to examine cohort effects • Can be used to examine time in history effects	• May be expensive • May take a long time • Possibility of practice effects • Some participant attrition

11.

Methods of Data Collection

Regardless of the method of research, data collection will be necessary. The method of data collection selected will primarily depend on the type of information the researcher needs for their study; however, other factors, such as time, resources, and even ethical considerations can influence the selection of a data collection method. All of these factors need to be considered when selecting a data collection method because each method has unique strengths and weaknesses. We will discuss the uses and assessment of the most common data collection methods: observation, surveys, case studies, and tests.

Observation

The observational method involves the watching and recording of a specific behavior of participants. In general, observational studies have the strength of allowing the researcher to see for themselves how people behave. However, observations may require more time and manpower than other data collection methods, often resulting in smaller samples of participants. Researchers may spend significant time waiting to observe a behavior, or the behavior may never occur during observation. It is important to remember that people tend to change their behavior when they know they are being watched (known as the **Observer effect**). Additionally, researchers may come into observation with certain expectation on the participant's behavior, which also influences how they interpret participant's behavior (known as the **Observer bias**).

Observations may be done in a naturalist setting to reduce the likelihood of the Observer effect. During **naturalistic observations**, the participants are in their natural environment and are usually unaware that they are being observed. For example, observing students participating in their class would be a naturalist observation. The downside of a naturalistic setting is that the research doesn't have control over the environment. Imagine that the researcher goes to the classroom to observe those students, and there is a substitute teacher. The change in instructor that day could impact student behavior and skew the data.

If controlling the environment is a concern, a **structured observation** may be carried out in a laboratory setting. In the laboratory environment, the researcher can manage confounding factors or distractions that might impact the participants' behavior. Of course, there are expenses associated with maintaining a laboratory setting, increasing the cost of the study, that would not be associated with naturalist observations. And, again, the observer effect may impact behavior.

Surveys



Surveys are familiar to most people because they are so widely used. This method enhances accessibility to subjects because they can be conducted in person, over the phone, through the mail, or online, and are commonly used by researchers to gather information on many variables in a relatively short period of time.

Most surveys involve asking a standard set of questions to a group of participants. In a highly structured survey, subjects are forced to choose from a response set such as “strongly disagree, disagree, undecided, agree, strongly agree”; or “0, 1-5, 6-10, etc.” One of the benefits of having forced-choice items is that each response is coded so that the results can be quickly entered and analyzed using statistical software. While this type of survey typically yields surface information on a wide variety of factors, it may not allow for an in-depth understanding of human behavior.

Of course, surveys can be designed in a number of ways. Some surveys ask open-ended questions, allowing each participant to devise their own response, allowing for a variety of answers. This variety may provide deeper insight into the subject than forced-choice questions, but makes comparing answers challenging. Imagine a survey question that asked participants to report how they are feeling today. If there were 100 participants, there could be 100 different answers, which is more challenging and takes more time to code and analyze.

Surveys are useful in examining stated values, attitudes, opinions, and reporting on practices. However, they are based on self-report, and this can limit accuracy. For a variety of reasons, people may not provide honest or complete answers. Participants may be concerned with projecting a particular image through their responses (**social desirability bias**), they may be uncomfortable answering the questions, inaccurately assess their behavior, or they may lack awareness of the behavior being assessed. So, while surveys can provide a lot of information for many participants quickly and easily, self-reporting may not be as accurate as other methods. When it comes to young children, experimenters sometimes need to rely on parental or teacher report as the children are too young to be able to understand or answer a survey, which could introduce additional bias on the data.

Case Studies

In observational research, scientists conduct a clinical or case study when they focus on one person or just a few individuals. A case study allows the researcher to have a very deep understanding of the individuals and the particular phenomenon being studied. An example of a case study is Genie, who grew up in isolation with minimum human interaction until she was discovered by authorities at the age of 13 year old and 7 months in 1970. A case study on Genie is appropriate because understanding what she can and cannot do allow us to see

the importance of early years in childhood. For example, Genie was never able to acquire any language as her first language, which suggests that there is a critical period of language learning early on in our life.

However, the major benefit of this particular approach is also a weakness. As mentioned earlier, this approach is often used when studying individuals who are interesting to researchers because they have a rare characteristic. Therefore, the individuals who serve as the focus of case studies are not like most other people. Thus, we can only obtain very subjective accounts from case studies. For example, it is difficult to determine whether Genie's failure to learn language was solely due to her extreme isolation and lack of stimulation, or if she may have had underlying cognitive or neurological challenges that made language acquisition difficult for her. As a result, if scientists ultimately want to explain all behavior, focusing attention on such a special group of people can make it difficult to generalize any observations to the larger population as a whole.

Tests



Many variables studied by psychologists—perhaps the majority—are not so straightforward or simple to measure. These kinds of variables are called constructs and include personality traits, emotional states, attitudes, and abilities. Psychological constructs cannot be observed directly. One reason is that they often represent *tendencies* to think, feel, or act in certain ways. For example, to say that a particular college student is highly extroverted does not necessarily mean that she is behaving in an extroverted way right now. Another reason psychological constructs cannot be observed directly is that they often involve internal processes, like thoughts or feelings. For these psychological constructs, we need another means of collecting data. Tests will serve this purpose.

A good test will aid researchers in assessing a particular psychological construct. What is a good test? Researchers want a test that is standardized, reliable, and valid. A standardized test is one that is administered, scored, and analyzed in the same way for each participant. This minimizes differences in test scores due to confounding factors, such as variability in the testing environment or scoring process, and assures that scores are comparable. **Reliability** refers to the consistency of a measure. Researchers consider three types of consistency: over time (test-retest reliability), across items (internal consistency), and across different researchers (interrater reliability). **Validity** is the extent to which the scores from a measure represent the variable they are intended to. When a measure has good test-retest reliability and internal consistency, researchers should be more confident that the scores represent what they are supposed to.

There are various types of tests used in psychological research. Self-report measures are those in which participants report their own thoughts, feelings, and actions, such as the Rosenberg Self-Esteem Scale or the Big Five Personality Test. Some tests measure performance, ability, aptitude, or skill, like the Stanford-Binet

Intelligence Scale or the SATs. There are also tests that measure physiological states, including electrical activity or blood flow in the brain.



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://wisconsin.pressbooks.pub/adolescentpsychology/?p=40#video-40-1>

Video 2.5.1. *Methods of Data Collection* explains various means for gathering data for quantitative and qualitative research. A closed-captioned version of this video is available [here](#).

Reliability and Validity

Reliability and **validity** are two important considerations that must be made with any type of data collection. Reliability refers to the ability to consistently produce a given result. In the context of psychological research, this would mean that any instruments or tools used to collect data do so in consistent, reproducible ways. Unfortunately, being consistent in measurement does not necessarily mean that you have measured something correctly. To illustrate this concept, consider a kitchen scale that would be used to measure the weight of cereal that you eat in the morning. If the scale is not properly calibrated, it may consistently under- or overestimate the amount of cereal that's being measured. While the scale is highly reliable in producing consistent results (e.g., the same amount of cereal poured onto the scale produces the same reading each time), those results are incorrect. This is where validity comes into play. Validity refers to the extent to which a given instrument or tool accurately measures what it's supposed to measure. While any valid measure is by necessity reliable, the reverse is not necessarily true. Researchers strive to use instruments that are both highly reliable and valid.

<https://lumenlearning.h5p.com/content/1290477372809028568>

Everyday Connection: How Valid Is the SAT?

Standardized tests like the SAT are supposed to measure an individual's aptitude for a college education, but how reliable and valid are such tests? Research conducted by the College Board suggests that scores on the SAT have high predictive validity for first-year college students' GPA (Kobrin, Patterson, Shaw, Mattern, & Barbuti, 2008). In this context, predictive validity refers to the test's ability to effectively predict the GPA of college freshmen. Given that many institutions of

higher education require the SAT for admission, this high degree of predictive validity might be comforting.

However, the emphasis placed on SAT scores in college admissions has generated some controversy on a number of fronts. For one, some researchers assert that the SAT is a biased test that places minority students at a disadvantage and unfairly reduces the likelihood of being admitted into a college (Santelices & Wilson, 2010). Additionally, some research has suggested that the predictive validity of the SAT is grossly exaggerated in how well it is able to predict the GPA of first-year college students. In fact, it has been suggested that the SAT's predictive validity may be overestimated by as much as 150% (Rothstein, 2004). Many institutions of higher education are beginning to consider de-emphasizing the significance of SAT scores in making admission decisions (Rimer, 2008).

In 2014, College Board president David Coleman expressed his awareness of these problems, recognizing that college success is more accurately predicted by high school grades than by SAT scores. To address these concerns, he has called for significant changes to the SAT exam (Lewin, 2014).

12.

Analyzing Data: Correlational and Experimental Research

Did you know that as sales of ice cream increase, so does the overall rate of crime? Is it possible that indulging in your favorite flavor of ice cream could send you on a crime spree? Or, after committing a crime, do you think you might decide to treat yourself to a cone? There is no question that a relationship exists between ice cream and crime (e.g., Harper, 2013), but does one thing actually caused the other to occur.

It is much more likely that both ice cream sales and crime rates are related to the temperature outside. When the temperature is warm, there are lots of people out of their houses, interacting with each other, getting annoyed with one another, and sometimes committing crimes. Also, when it is warm outside, we are more likely to seek a refreshing treat like ice cream. How do we determine if there is indeed a relationship between two things? And when there is a relationship, how can we discern whether it is attributable to coincidence or causation? We do this through statistical analysis of the data. Which analysis we use will depend on several conditions outlined next.

Introduction to Statistical Thinking

Does drinking coffee actually increase your life expectancy? A recent study (Freedman, Park, Abnet, Hollenbeck, & Sinha, 2012) found that men who drank at least six cups of coffee a day had a 10% lower chance of dying (women 15% lower) than those who drank none. Does this mean you should pick up or increase your own coffee habit? Modern society has become awash in studies such as this; you can read about several such studies in the news every day. Conducting such a study well, and interpreting the results of such studies requires understanding basic ideas of **statistics**, the science of gaining insight from data. Key components to a statistical investigation are:

- Planning the study: Start by asking a testable research question and deciding how to collect data. For example, how long was the study period of the



Figure 2.6.1. People around the world differ in their preferences for drinking coffee versus drinking tea. Would the results of the coffee study be the same in Canada as in China? [Image: Duncan, <https://goo.gl/vbMyTm>, CC BY-NC 2.0, <https://goo.gl/l8UUGY>]

coffee study? How many people were recruited for the study, how were they recruited, and from where? How old were they? What other variables were recorded about the individuals? Were changes made to the participants' coffee habits during the course of the study?

- Examining the data: What are appropriate ways to examine the data? What graphs are relevant, and what do they reveal? What descriptive statistics can be calculated to summarize relevant aspects of the data, and what do they reveal? What patterns do you see in the data? Are there any individual observations that deviate from the overall pattern, and what do they reveal? For example, in the coffee study, did the proportions differ when we compared the smokers to the non-smokers?
- Inferring from the data: What are valid statistical methods for drawing inferences “beyond” the data you collected? In the coffee study, is the 10%–15% reduction in risk of death something that could have happened just by chance?
- Drawing conclusions: Based on what you learned from your data, what conclusions can you draw? Who do you think these conclusions apply to? (Were the people in the coffee study older? Healthy? Living in cities?) Can you draw a **cause-and-effect** conclusion about your treatments? (Are scientists now saying that the coffee drinking is the cause of the decreased risk of death?)

Notice that the numerical analysis (“crunching numbers” on the computer) comprises only a small part of overall statistical investigation. In this section, you will see how we can answer some of these questions and what questions you should be asking about any statistical investigation you read about.



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://wisconsin.pressbooks.pub/adolescentpsychology/?p=42#oembed-1>

Video 2.6.1. *Types of Statistical Studies* explains the differences between correlational and experimental research.

<https://assessments.lumenlearning.com/assessments/2708>

Distributional Thinking

When data are collected to address a particular question, an important first step is to think of meaningful ways to organize and examine the data. Let's take a look at an example.

Example 1: Researchers investigated whether cancer pamphlets are written at an appropriate level to be read and understood by cancer patients (Short, Moriarty, & Cooley, 1995). Tests of reading ability were given to 63 patients. In addition, readability level was determined for a **sample** of 30 pamphlets, based on characteristics

such as the lengths of words and sentences in the pamphlet. The results, reported in terms of grade levels, are displayed in Figure 2.6.2.

Patients' reading levels	< 3	3	4	5	6	7	8	9	10	11	12	> 12	Total
Count (number of patients)	6	4	4	3	3	2	6	5	4	7	2	17	63

Pamphlet's readability levels	6	7	8	9	10	11	12	13	14	15	16	Total
Count (number of pamphlets)	3	3	8	4	1	1	4	2	1	2	1	30

Figure 2.6.2. Frequency tables of patient reading levels and pamphlet readability levels.

Testing these two variables reveal two fundamental aspects of statistical thinking:

- Data *vary*. More specifically, values of a variable (such as reading level of a cancer patient or readability level of a cancer pamphlet) vary.
- Analyzing the pattern of variation, called the **distribution** of the variable, often reveals insights.

Addressing the research question of whether the cancer pamphlets are written at appropriate levels for the cancer patients requires comparing the two distributions. A naïve comparison might focus only on the centers of the distributions. Both medians turn out to be ninth grade, but considering only medians ignores the variability and the overall distributions of these data. A more illuminating approach is to compare the entire distributions, for example with a graph, as in Figure 2.6.3.

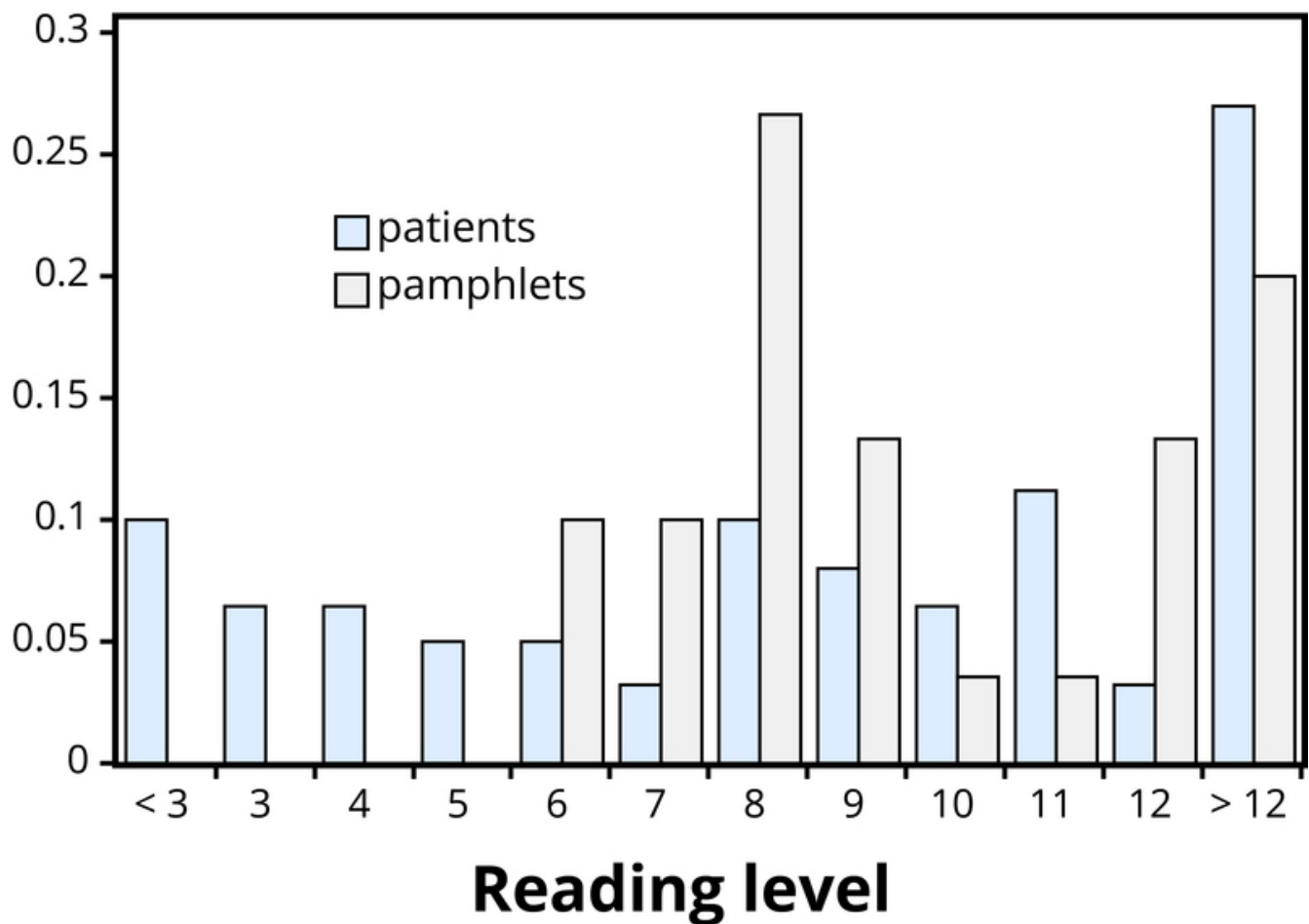


Figure 2.6.3. Comparison of patient reading levels and pamphlet readability levels.

Figure 2.6.3 makes clear that the two distributions are not well aligned at all. The most glaring discrepancy is that many patients (17/63, or 27%, to be precise) have a reading level below that of the most readable pamphlet. These patients will need help to understand the information provided in the cancer pamphlets. Notice that this conclusion follows from considering the distributions as a whole, not simply measures of center or variability, and that the graph contrasts those distributions more immediately than the frequency tables.

<https://assessments.lumenlearning.com/assessments/2741>

Statistical Significance

Even when we find patterns in data, often there is still uncertainty in various aspects of the data. For example, there may be potential for measurement errors (even your own body temperature can fluctuate by almost 1°F over the course of the day). Or we may only have a “snapshot” of observations from a more long-term process or only a small subset of individuals from the **population** of interest. In such cases, how can we determine

whether patterns we see in our small set of data is convincing evidence of a systematic phenomenon in the larger process or population? Let's take a look at another example.

Example 2: In a study reported in the November 2007 issue of *Nature*, researchers investigated whether pre-verbal infants take into account an individual's actions toward others in evaluating that individual as appealing or aversive (Hamlin, Wynn, & Bloom, 2007). In one component of the study, 10-month-old infants were shown a “climber” character (a piece of wood with “googly” eyes glued onto it) that could not make it up a hill in two tries. Then the infants were shown two scenarios for the climber's next try, one where the climber was pushed to the top of the hill by another character (“helper”), and one where the climber was pushed back down the hill by another character (“hinderer”). The infant was alternately shown these two scenarios several times. Then the infant was presented with two pieces of wood (representing the helper and the hinderer characters) and asked to pick one to play with.

The researchers found that of the 16 infants who made a clear choice, 14 chose to play with the helper toy. One possible explanation for this clear majority result is that the helping behavior of the one toy increases the infants' likelihood of choosing that toy. But are there other possible explanations? What about the color of the toy? Well, prior to collecting the data, the researchers arranged so that each color and shape (red square and blue circle) would be seen by the same number of infants. Or maybe the infants had right-handed tendencies and so picked whichever toy was closer to their right hand?

Well, prior to collecting the data, the researchers arranged it so half the infants saw the helper toy on the right and half on the left. Or, maybe the shapes of these wooden characters (square, triangle, circle) had an effect? Perhaps, but again, the researchers controlled for this by rotating which shape was the helper toy, the hinderer toy, and the climber. When designing experiments, it is important to *control* for as many variables as might affect the responses as possible. It is beginning to appear that the researchers accounted for all the other plausible explanations. But there is one more important consideration that cannot be controlled—if we did the study again with these 16 infants, they might not make the same choices. In other words, there is some *randomness* inherent in their selection process.

P-value

Maybe each infant had no genuine preference at all, and it was simply “random luck” that led to 14 infants picking the helper toy. Although this random component cannot be controlled, we can apply a *probability model* to investigate the pattern of results that would occur in the long run if random chance were the only factor.

If the infants were equally likely to pick between the two toys, then each infant had a 50% chance of picking the helper toy. It's like each infant tossed a coin, and if it landed heads, the infant picked the helper toy. So if we tossed a coin 16 times, could it land heads 14 times? Sure, it's possible, but it turns out to be very unlikely. Getting 14 (or more) heads in 16 tosses is about as likely as tossing a coin and getting 9 heads in a row. This probability is referred to as a **p-value**. The p-value represents the likelihood that experimental results

happened by chance. Within psychology, the most common standard for p-values is “ $p < .05$ ”. What this means is that there is less than a 5% probability that the results happened just by random chance, and therefore a 95% probability that the results reflect a meaningful pattern in human psychology. We call this **statistical significance**.

<https://assessments.lumenlearning.com/assessments/2743>

So, in the study above, if we assume that each infant was choosing equally, then the probability that 14 or more out of 16 infants would choose the helper toy is found to be 0.0021. We have only two logical possibilities: either the infants have a genuine preference for the helper toy, or the infants have no preference (50/50), and an outcome that would occur only 2 times in 1,000 iterations happened in this study. Because this p-value of 0.0021 is quite small, we conclude that the study provides very strong evidence that these infants have a genuine preference for the helper toy.

If we compare the p-value to some cut-off value, like 0.05, we see that the p-value is smaller. Because the p-value is smaller than that cut-off value, then we reject the hypothesis that only random chance was at play here. In this case, these researchers would conclude that *significantly* more than half of the infants in the study chose the helper toy, giving strong evidence of a genuine preference for the toy with the helping behavior.

<https://assessments.lumenlearning.com/assessments/2742>

Generalizability

One limitation to the study mentioned previously about the babies choosing the “helper” toy is that the conclusion only applies to the 16 infants in the study. We don’t know much about how those 16 infants were selected. Suppose we want to select a subset of individuals (a **sample**) from a much larger group of individuals (the **population**) in such a way that conclusions from the sample can be **generalized** to the larger population. This is the question faced by pollsters every day.

Example 3: The General Social Survey (GSS) is a survey on societal trends conducted every other year in the United States. Based on a sample of about 2,000 adult Americans, researchers make claims about what percentage of the U.S. population consider themselves to be “liberal,” what percentage consider themselves “happy,” what percentage feel “rushed” in their daily lives, and many other issues. The key to making these claims about the larger population of all American adults lies in how the sample is selected. The goal is to select a sample that is representative of the population, and a common way to achieve this goal is to select a **random sample** that gives every member of the population



Figure 2.6.4. Generalizability is an important research consideration: The results of studies with widely representative samples are more likely to generalize to the population. [Image: Barnacles Budget Accommodation]

an equal chance of being selected for the sample. In its simplest form, random sampling involves numbering every member of the population and then using a computer to randomly select the subset to be surveyed. Most polls don't operate exactly like this, but they do use probability-based sampling methods to select individuals from nationally representative panels.

<https://assessments.lumenlearning.com/assessments/2747>

In 2004, the GSS reported that 817 of 977 respondents (or 83.6%) indicated that they always or sometimes feel rushed. This is a clear majority, but we again need to consider variation due to *random sampling*. Fortunately, we can use the same probability model we did in the previous example to investigate the probable size of this error. (Note, we can use the coin-tossing model when the actual population size is much, much larger than the sample size, as then we can still consider the probability to be the same for every individual in the sample.) This probability model predicts that the sample result will be within 3 percentage points of the population value (roughly 1 over the square root of the sample size, the **margin of error**). A statistician would conclude, with 95% confidence, that between 80.6% and 86.6% of all adult Americans in 2004 would have responded that they sometimes or always feel rushed.

<https://assessments.lumenlearning.com/assessments/2748>

The key to the margin of error is that when we use a probability sampling method, we can make claims about how often (in the long run, with repeated random sampling) the sample result would fall within a certain distance from the unknown population value by chance (meaning by random sampling variation) alone. Conversely, non-random samples are often suspect to bias, meaning the sampling method systematically over-represents some segments of the population and under-represents others. We also still need to consider other sources of bias, such as individuals not responding honestly. These sources of error are not measured by the margin of error.

Cause and Effect Conclusions

In many research studies, the primary question of interest concerns differences between groups. Then the question becomes how were the groups formed (e.g., selecting people who already drink coffee vs. those who don't). In some studies, the researchers actively form the groups themselves. But then we have a similar question—could any differences we observe in the groups be an artifact of that group-formation process? Or maybe the difference we observe in the groups is so large that we can discount a “fluke” in the group-formation process as a reasonable explanation for what we find?

Example 4: A psychology study investigated whether people tend to display more creativity when they are thinking about intrinsic (internal) or extrinsic (external) motivations (Ramsey & Schafer, 2002, based on a study by Amabile, 1985). The subjects were 47 people with extensive experience with creative writing. Subjects began by answering survey questions about either intrinsic motivations for writing (such as the pleasure of self-expression) or extrinsic motivations (such as public recognition). Then all subjects were instructed to write a haiku, and those poems were evaluated for creativity by a panel of judges. The researchers conjectured

beforehand that subjects who were thinking about intrinsic motivations would display more creativity than subjects who were thinking about extrinsic motivations. The creativity scores from the 47 subjects in this study are displayed in Figure 2.6.5, where higher scores indicate more creativity.

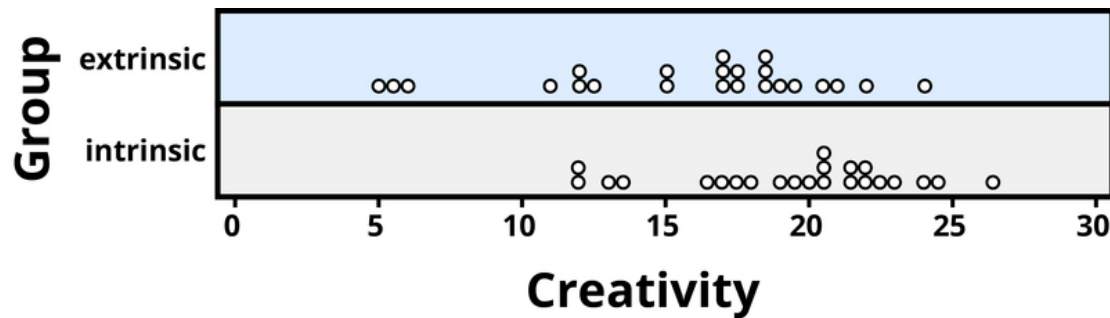


Figure 2.6.5. Creativity scores separated by type of motivation.

In this example, the key question is whether the type of motivation *affects* creativity scores. In particular, do subjects who were asked about intrinsic motivations tend to have higher creativity scores than subjects who were asked about extrinsic motivations?

Figure 2.6.5 reveals that both motivation groups saw considerable variability in creativity scores, and these scores have considerable overlap between the groups. In other words, it's certainly not always the case that those with extrinsic motivations have higher creativity than those with intrinsic motivations, but there may still be a statistical *tendency* in this direction. (Psychologist Keith Stanovich (2013) refers to people's difficulties with thinking about such probabilistic tendencies as “the Achilles heel of human cognition.”)

The mean creativity score is 19.88 for the intrinsic group, compared to 15.74 for the extrinsic group, which supports the researchers' conjecture. Yet comparing only the means of the two groups fails to consider the variability of creativity scores in the groups. We can measure variability with statistics using, for instance, the standard deviation: 5.25 for the extrinsic group and 4.40 for the intrinsic group. The standard deviations tell us that most of the creativity scores are within about 5 points of the mean score in each group. We see that the mean score for the intrinsic group lies within one standard deviation of the mean score for extrinsic group. So, although there is a tendency for the creativity scores to be higher in the intrinsic group, on average, the difference is not extremely large.

We again want to consider possible explanations for this difference. The study only involved individuals with extensive creative writing experience. Although this limits the population to which we can generalize, it does not explain why the mean creativity score was a bit larger for the intrinsic group than for the extrinsic group. Maybe women tend to receive higher creativity scores? Here is where we need to focus on how the individuals were assigned to the motivation groups. If only women were in the intrinsic motivation group and only men in the extrinsic group, then this would present a problem because we wouldn't know if the intrinsic group did better because of the different type of motivation or because they were women. However, the researchers guarded against such a problem by randomly assigning the individuals to the motivation groups. Like flipping

a coin, each individual was just as likely to be assigned to either type of motivation. Why is this helpful? Because this **random assignment** tends to balance out all the variables related to creativity we can think of, and even those we don't think of in advance, between the two groups. So we should have a similar male/female split between the two groups; we should have a similar age distribution between the two groups; we should have a similar distribution of educational background between the two groups; and so on. Random assignment should produce groups that are as similar as possible except for the type of motivation, which presumably eliminates all those other variables as possible explanations for the observed tendency for higher scores in the intrinsic group.

But does this always work? No, so by “luck of the draw” the groups may be a little different prior to answering the motivation survey. So then the question is, is it possible that an unlucky random assignment is responsible for the observed difference in creativity scores between the groups? In other words, suppose each individual's poem was going to get the same creativity score no matter which group they were assigned to, that the type of motivation in no way impacted their score. Then how often would the random-assignment process alone lead to a difference in mean creativity scores as large (or larger) than $19.88 - 15.74 = 4.14$ points?

We again want to apply to a probability model to approximate a **p-value**, but this time the model will be a bit different. Think of writing everyone's creativity scores on an index card, shuffling up the index cards, and then dealing out 23 to the extrinsic motivation group and 24 to the intrinsic motivation group, and finding the difference in the group means. We (better yet, the computer) can repeat this process over and over to see how often, when the scores don't change, random assignment leads to a difference in means at least as large as 4.41. Figure 2.6.6 shows the results from 1,000 such hypothetical random assignments for these scores.

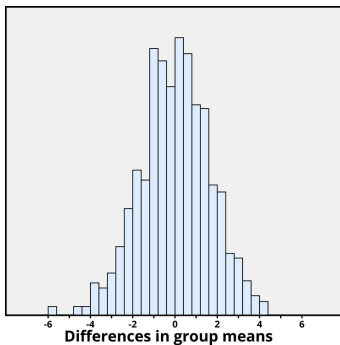


Figure 2.6.6. Differences in group means under random assignment alone.

Only 2 of the 1,000 simulated random assignments produced a difference in group means of 4.41 or larger. In other words, the approximate p-value is $2/1000 = 0.002$. This small p-value indicates that it would be very surprising for the random assignment process alone to produce such a large difference in group means. Therefore, as with Example 4, we have strong evidence that focusing on intrinsic motivations tends to increase creativity scores, as compared to thinking about extrinsic motivations.

Notice that the previous statement implies a cause-and-effect relationship between motivation and creativity score; is such a strong conclusion justified? Yes, because of the random assignment used in the study. That should have balanced out any other variables between the two groups, so now that the small p-value convinces us that the higher mean in the intrinsic group wasn't just a coincidence, the only reasonable explanation left is the difference in the type of motivation. Can we generalize this conclusion to everyone? Not necessarily—we could cautiously generalize this conclusion to individuals with extensive experience in creative writing similar to the individuals in this study, but we would still want to know more about how these individuals were selected to participate.

<https://assessments.lumenlearning.com/assessments/2709>

Conclusion



Figure 2.6.7. Researchers employ the scientific method that involves a great deal of statistical thinking: generate a hypothesis → design a study to test that hypothesis → conduct the study → analyze the data → report the results. [Image: widdowquinn]

Statistical thinking involves the careful design of a study to collect meaningful data to answer a focused research question, detailed analysis of patterns in the data, and drawing conclusions that go beyond the observed data. Random sampling is paramount to generalizing results from our sample to a larger population, and random assignment is key to drawing cause-and-effect conclusions. With both kinds of randomness, probability models help us assess how much random variation we can expect in our results, in order to determine whether our results could happen by chance alone and to estimate a margin of error.

So where does this leave us with regard to the coffee study mentioned previously (the Freedman, Park, Abnet, Hollenbeck, & Sinha, 2012 found that men who drank at least six cups of coffee a day had a 10% lower chance of dying

(women 15% lower) than those who drank none)? We can answer many of the questions:

- This was a 14-year study conducted by researchers at the National Cancer Institute.
- The results were published in the June issue of the *New England Journal of Medicine*, a respected, peer-reviewed journal.
- The study reviewed coffee habits of more than 402,000 people ages 50 to 71 from six states and two metropolitan areas. Those with cancer, heart disease, and stroke were excluded at the start of the study. Coffee consumption was assessed once at the start of the study.
- About 52,000 people died during the course of the study.
- People who drank between two and five cups of coffee daily showed a lower risk as well, but the amount of reduction increased for those drinking six or more cups.
- The sample sizes were fairly large and so the p-values are quite small, even though percent reduction in risk was not extremely large (dropping from a 12% chance to about 10%–11%).
- Whether coffee was caffeinated or decaffeinated did not appear to affect the results.
- This was an observational study, so no cause-and-effect conclusions can be drawn between coffee drinking and increased longevity, contrary to the impression conveyed by many news headlines about this study. In particular, it's possible that those with chronic diseases don't tend to drink coffee.

This study needs to be reviewed in the larger context of similar studies and consistency of results across studies, with the constant caution that this was not a randomized experiment. Whereas a statistical analysis can still “adjust” for other potential confounding variables, we are not yet convinced that researchers have identified them all or completely isolated why this decrease in death risk is evident. Researchers can now take the findings of this study and develop more focused studies that address new questions.

Learn More

Explore these outside resources to learn more about applied statistics:

- Video about p-values: [P-Value Extravaganza](#)
- [Interactive web applets for teaching and learning statistics](#)
- Inter-university Consortium for Political and Social Research [where you can find and analyze data.](#)
- [The Consortium for the Advancement of Undergraduate Statistics](#)

13.

Problematic Experiments

You may have heard of many psychological experiments that are quite shocking to you. For example, the Milgram's Obedience Experiment where participants were tricked to think that they are conducting electrical shocks to an innocent person. As you could imagine, the study has caused a lot of psychological distress to the participant during the experiment and could have long-lasting effect on their mental health.

It is important that we protect our participants's rights and follow ethical standards when we conduct psychological studies.



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://wisconsin.pressbooks.pub/adolescentpsychology/?p=198#oembed-1>

Video 3.7.1. video demonstrating Milgram's experiment

Institutional Review Board

The **Institutional Review Boards (IRBs)** was founded to review and approve all research projects that are conducted at universities, hospitals, and other institutions (each broad discipline or field, such as psychology or social work, often has its own code of ethics that must also be followed, regardless of institutional affiliation). An IRB is typically a panel of experts who read and evaluate proposals for research. IRB members want to ensure that the proposed research will be carried out ethically. For example, are the participants' **privacy** protected and can we maintain **confidentiality** of the data? Is the participation of the study **voluntary**? IRB members also want to ensure that the potential benefits of the research outweigh the risks and potential harm (psychological as well as physical harm) for participants.

What you may not know though, is that the IRB considers some groups of participants to be more vulnerable or at-risk than others. Whereas university students are generally not viewed as vulnerable or at-risk, infants and young children commonly fall into this category. What makes infants and young children more vulnerable during research than young adults? One reason infants and young children are perceived as being at increased risk is due to their limited cognitive capabilities, which makes them unable to state their willingness to participate in research or tell researchers when they would like to drop out of a study. For these reasons,

infants and young children require special accommodations as they participate in the research process. Similar issues and accommodations would apply to adults who are deemed to be of limited cognitive capabilities.

When thinking about special accommodations in developmental research, consider the **informed consent** process. If you have ever participated in scientific research, you may know through your own experience that adults commonly sign an informed consent statement (a contract stating that they agree to participate in research) after learning about a study. As part of this process, participants are informed of the procedures to be used in the research, along with any expected risks or benefits.

Infants and young children cannot verbally indicate their willingness to participate, much less understand the balance of potential risks and benefits. As such, researchers are oftentimes required to obtain *written informed consent from the parent or legal guardian of the child participant*, an adult who is almost always present as the study is conducted. In fact, children are not asked to indicate *whether they would like to be involved in a study at all (a process known as assent)* until they are approximately seven years old. Because infants and young children cannot easily indicate if they would like to discontinue their participation in a study, researchers must be sensitive to changes in the state of the participant (determining whether a child is too tired or upset to continue) as well as to parent desires (in some cases, parents might want to discontinue their involvement in the research). Even for older children, for them to participate in a research study, both the child and their parent or legal guardian must provide consent—typically, the parent gives **informed consent**, while the child provides **assent**, indicating their willingness to participate. As in adult studies, researchers must always strive to protect the rights and well-being of the minor participants and their parents when conducting developmental research.



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://wisconsin.pressbooks.pub/adolescentpsychology/?p=198#oembed-2>

Video 3.7.2. *How IRBs Protect Human Research Participants* explains the purpose of IRBs in assuring the health and safety of participants in research.

14.

What is Open Science?

Open Science refers to a movement that aims to make scientific research, data, and publications freely accessible to everyone, promoting transparency, collaboration, and reproducibility to increase the accessibility and impact of scientific knowledge.

Why do we need Open Science?

First, making research studies and related information freely accessible is nice. For example, having this open-source textbook for your class probably saved you a lot of money. With the same mindset, making research findings freely accessible to everyone will allow everyone to benefit from the research study.

Another reason for the need of Open Science has something to do with the poor research practices that have been conducted in the past. A previous study aimed to replicate all the research findings conducted in some of the most prominent journals in Psychology. As listed in the table below, only 36% of the findings published in those top-tier journals were replicated. This is concerning because it could mean that the research findings that we trusted and believed in actually do not exist in real life.

Journal	% Findings Replicated
Journal of Personality and Social Psychology: Social	23
Journal of Experimental Psychology: Learning, Memory, and Cognition	48
Psychological Science, social articles	29
Psychological Science, cognitive articles	53
Overall	36

Table 3.8.1. Percentage of research findings from journals replicated

Some of the reason behind this lack of replicability are due to questionable research practices including:

Low Statistical Power:

Low statistical power occurs when a study includes too small a sample size to detect meaningful effects. For example, imagine a study that tracks the intelligence of 10 individuals from age 20 to 50 and concludes that

people become more intelligent as they age. With only 10 participants, the sample is too small to draw reliable conclusions, and there's a high chance that the result is due to random variation or a special case rather than a true trend. As a result, the findings cannot be generalized to the broader population.

P-Hacking:

P-hacking refers to manipulating data analysis in order to obtain statistically significant results, even when there is no real effect. This can involve practices like running multiple statistical tests and only reporting the ones that yield significant results. Why is this problematic? Imagine each test has a 5% chance of producing a false positive result. If you run two tests, there's about a 10% chance of finding at least one false positive. If you run 20 tests, the likelihood of finding at least one significant result by chance alone becomes very high—even if no real effect exists. Unfortunately, it is not uncommon for researchers to conduct many tests but only report the significant ones, which misleads readers and distorts scientific understanding.

HARKing (Hypothesizing After Results are Known):

HARKing occurs when researchers formulate or change their hypothesis after seeing the results, and then present it as if it were their original prediction. For instance, suppose you initially hypothesize that eating ice cream before a test will improve performance. After collecting data, you find the opposite result—that performance worsens. Instead of reporting the original hypothesis, you revise it to say that you predicted the decline in performance. This practice is misleading, as it presents post-hoc reasoning as if it were an a priori prediction, giving a false impression of scientific foresight and increasing the risk of false conclusions.

Falsification of Results:

This refers to the deliberate fabrication or alteration of data to produce a desired outcome. It is one of the most serious violations of scientific integrity and can have wide-reaching consequences for public trust and future research.

Publication Bias:

Publication bias occurs when studies with significant results are more likely to be published than those with null or non-significant findings. This skews the body of published research and contributes to questionable practices like p-hacking, HARKing, and even falsification. For example, imagine 11 studies are conducted to examine whether eating ice cream before a test improves performance. Ten of these studies find no significant effect, while one does. Due to publication bias, only the one “positive” study gets published. As a result, readers—including the public and other researchers—may mistakenly believe there is strong evidence supporting the effect, when in fact the overall evidence suggests otherwise.

Toolboxes for Open Science

As defined above, **Open Science** refers to the movement aimed at making research studies and their findings openly accessible to everyone. There are several ways researchers can contribute to this effort and increase the transparency and accessibility of their work.

One approach is to share research materials, analysis code, and datasets publicly. This not only fosters

collaboration but also makes it easier for other researchers to replicate and verify findings. Writing detailed methods sections is another important practice, as it ensures that others can accurately understand and reproduce the procedures used in the study.

Researchers can also engage in **preregistration** or submit a **preregistered report**. In both cases, the research plan—including hypotheses, study design, and analysis strategies—is documented and submitted before data collection begins. This helps prevent questionable practices like p-hacking and HARKing by holding researchers accountable to their original research questions and plans.

Finally, practices such as publishing **preprints** (early versions of papers shared before peer review) and choosing **open access** publishing options allow research findings to be shared freely with the broader community, without financial or technical barriers. These practices make research more inclusive and ensure that scientific knowledge is accessible to students, educators, practitioners, and the general public.

15.

The previous sections describe research tools to assess development across the lifespan, as well as the ways that research designs can be used to track age-related changes and development over time. Before you begin conducting developmental research, however, you must also be aware that testing individuals of certain ages (such as infants and children) or making comparisons across ages (such as children compared to teens) comes with its own unique set of challenges. In the final section of this module, let's look at some of the main issues that are encountered when conducting developmental research, namely ethical concerns, recruitment issues, and participant attrition.

Recruitment

An additional challenge in developmental science is participant recruitment. Recruiting university students to participate in adult studies is typically easy. Many colleges and universities offer extra credit for participation in research and have locations such as bulletin boards and school newspapers where research can be advertised. Unfortunately, young children cannot be recruited by making announcements in Introduction to Psychology courses, by posting ads on campuses, or through online platforms such as Amazon Mechanical Turk. Given these limitations, how do researchers go about finding infants and young children to be in their studies?

The answer to this question varies along multiple dimensions. Researchers must consider the number of participants they need and the financial resources available to them, among other things. Location may also be an important consideration. Researchers who need large numbers of infants and children may attempt to recruit them by obtaining infant birth records from the state, county, or province in which they reside. Some areas make this information publicly available for free, whereas birth records must be purchased in other areas (and in some locations birth records may be entirely unavailable as a recruitment tool). If birth records are available, researchers can use the obtained information to call families by phone or mail them letters describing possible research opportunities. All is not lost if this recruitment strategy is unavailable, however. Researchers can choose to pay a recruitment agency to contact and recruit families for them. Although these methods tend to be quick and effective, they can also be quite expensive. More economical recruitment options include posting advertisements and fliers in locations frequented by families, such as mommy-and-me classes, local malls, and preschools or daycare centers. Researchers can also utilize online social media outlets like Facebook, which allows users to post recruitment advertisements for a small fee. Of course, each of these different recruitment techniques requires IRB approval. And if children are recruited and/or tested in school settings, permission would need to be obtained ahead of time from teachers, schools, and school districts (as well as informed consent from parents or guardians).

And what about the recruitment of adults? While it is easy to recruit young college students to participate in research, some would argue that it is too easy and that college students are samples of convenience. They are not randomly selected from the wider population, and they may not represent all young adults in our society (this was particularly true in the past with certain cohorts, as college students tended to be mainly white males of high socioeconomic status). In fact, in the early research on aging, this type of convenience sample was compared with another type of convenience sample—young college students tended to be compared with residents of nursing homes! Fortunately, it didn't take long for researchers to realize that older adults in nursing homes are not representative of the older population; they tend to be the oldest and sickest (physically and/or psychologically). Those initial studies probably painted an overly negative view of aging, as young adults in college were being compared to older adults who were not healthy, had not been in school nor taken tests in many decades, and probably did not graduate high school, let alone college. As we can see, recruitment and random sampling can be significant issues in research with adults, as well as infants and children. For instance, how and where would you recruit middle-aged adults to participate in your research?

Attrition

Another important consideration when conducting research with infants and young children is **attrition**. Although attrition is quite common in longitudinal research in particular (see the previous section on longitudinal designs for an example of high attrition rates and selective attrition in lifespan developmental research), it is also problematic in developmental science more generally, as studies with infants and young children tend to have higher attrition rates than studies with adults. For example, high attrition rates in ERP (event-related potential, which is a technique to understand brain function) studies oftentimes result from the demands of the task: infants are required to sit still and have a tight, wet cap placed on their heads



before watching still photographs on a computer screen in a dark, quiet room. In other cases, attrition may be due to motivation (or a lack thereof). Whereas adults may be motivated to participate in research in order to receive money or extra course credit, infants and young children are not as easily enticed. In addition, infants and young children are more likely to tire easily, become fussy, and lose interest in the study procedures than are adults. For these reasons, research studies should be designed to be as short as possible – it is likely better to break up a large study into multiple short sessions rather than cram all of the tasks into one long visit to the lab.

Researchers should also allow time for breaks in their study protocols so that infants can rest or have snacks as needed. Happy, comfortable participants provide the best data.

Conclusions

Developmental Psychology is a fascinating field of study – but care must be taken to ensure that researchers use appropriate methods to examine human behavior, use the correct experimental design to answer their questions, and be aware of the special challenges that are part-and-parcel of developmental research. After reading this module, you should have a solid understanding of these various issues and be ready to think more critically about research questions that interest you. For example, what types of questions do you have about lifespan development? What types of research would you like to conduct? Many interesting questions remain to be examined by future generations of developmental scientists – maybe you will make one of the next big discoveries!

16.

glossary

attrition: reduction in the number of research participants as some drop out over time

case study: exploring a single case or situation in great detail. Information may be gathered with the use of observation, interviews, testing, or other methods to uncover as much as possible about a person or situation

cohort: a group of people who are born at roughly the same period in a particular society. Cohorts share histories and contexts for living

content analysis: involves looking at media such as old texts, pictures, commercials, lyrics or other materials to explore patterns or themes in culture

control group: a comparison group that is equivalent to the experimental group, but is not given the independent variable

correlation: the relationship between two or more variables; when two variables are correlated, one variable changes as the other does

correlation coefficient: number from -1 to +1, indicating the strength and direction of the relationship between variables, and usually represented by r

correlational research: research that formally tests whether a relationship exists between two or more variables, however, correlation does not imply causation

cross-sectional research: used to examine behavior in participants of different ages who are tested at the same point in time; may confound age and cohort differences

dependent variable: the outcome or variable that is supposedly affected by the independent variable

descriptive studies: research focused on describing an occurrence

double-blind: a research design in which neither the participants nor the researchers know whether an individual is assigned to the experimental group or the control group

experimental group: the group of participants in an experiment who receive the independent variable

experimental research: research that involves randomly assigning people to different conditions and using hypothesis testing to make inferences about how these conditions affect behavior; the only method that measures cause and effect between variables

experiments: designed to test hypotheses in a controlled setting in efforts to explain how certain factors or events produce outcomes; the only research method that measures cause and effect relationships between variables

explanatory studies: research that tries to answer the question “why”

Hawthorne effect: individuals tend to change their behavior when they know they are being watched

hypotheses: specific statements or predictions about the relationship between variables

independent variable: something that is manipulated or introduced by the researcher to the experimental group; treatment or intervention

longitudinal research: studying a group of people who may be of the same age and background (cohort), and measuring them repeatedly over a long period of time; may confound age and time of measurement effects

negative correlation: two variables change in different directions, with one becoming larger as the other becomes smaller; a negative correlation is not the same thing as no correlation

observational studies: also called naturalistic observation, involves watching and recording the actions of participants

operationalized: concepts transformed into variables that can be measured in research

positive correlation: two variables change in the same direction, both becoming either larger or smaller

qualitative research: theoretical ideas are “grounded” in the experiences of the participants, who answer open-ended questions

quantitative research: involves numerical data that are quantified using statistics to understand and report what has been studied

reliability: when something yields consistent results

research design: the strategy or blueprint for deciding how to collect and analyze information; dictates which methods are used and how

scatterplot: a plot or mathematical diagram consisting of data points that represent two variables

secondary content analysis: archival research, involves analyzing information that has already been collected or examining documents or media to uncover attitudes, practices or preferences

selective attrition: certain groups of individuals may tend to drop out more frequently resulting in the remaining participants longer being representative of the whole population

sequential research design: combines aspects of cross-sectional and longitudinal designs, but also adding new cohorts at different times of measurement; allows for analyses to consider effects of age, cohort, time of measurement, and socio-historical change

survey: asking a standard set of questions to a group of subjects

validity: when something yields accurate results

variables: factors that change in value

17.

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PART III

PHYSICAL DEVELOPMENT DURING MIDDLE CHILDHOOD AND ADOLESCENCE

Learning Objectives

- Describe the basic principles of physical development
- Identify Motor Skill development in Middle Childhood
- Describe the physical changes that occur during puberty
- Identify ways in which the timing of puberty impacts other aspects of development
- Describe the changes and risks associated with sexual development
- Identify health concerns during middle childhood and adolescence

We follow the same basic principles of physical development starting from the prenatal period. However, significant changes continue to occur during middle childhood and adolescence. As children enter the formal school system, they are exposed to new environments that offer increased opportunities to develop and refine their motor skills. Activities such as writing, organized sports, and physical education provide structured settings in which children can practice and enhance both their fine and gross motor abilities. These experiences contribute to the ongoing development of coordination, strength, and control.

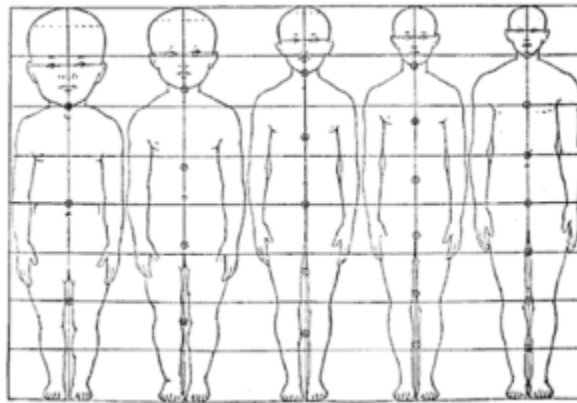
Physical changes of puberty mark the onset of adolescence (Lerner & Steinberg, 2009). For both boys and girls, these changes include a growth spurt in height, growth of pubic and underarm hair, and skin changes (e.g., pimples). Boys also experience growth in facial hair and a deepening of their voice. Girls experience breast development and begin menstruating. These pubertal changes are driven by hormones, particularly an increase in testosterone for boys and estrogen for girls. The physical changes that occur during adolescence are greater than those of any other time of life, with the exception of infancy. In some ways, however, the changes in adolescence are more dramatic than those that occur in infancy—unlike infants, adolescents are aware of the changes that are taking place and of what the changes mean. In this chapter, you will learn about the principles of physical development, motor skill development in middle childhood, pubertal changes in body

size, proportions, and sexual maturity, the social and emotional attitudes and reactions toward puberty, and some of the health concerns during middle childhood and adolescence.

18.

Principles of Physical Development

Growth is influenced by the two major trends, **cephalocaudal development** (from head to tow, where your brain is developed first) and **proximodistal development** (from the midline outward where your organs will be more developed than extremities such as your limbs and arms). In early childhood, the average child grows 2½ inches and between 5 to 7 pounds a year. Girls are slightly smaller and lighter than boys.



Hormonal influence

Hormones play a vital role in the body's physical development. They are chemical messengers released by the endocrine system and sent throughout the body to regulate various physiological processes and behaviors. In addition to influencing physical development, hormones also affect cognitive and socioemotional growth.

During early childhood, two hormones are especially important for physical growth. The first is **Human Growth Hormone (HGH)**, which supports growth in nearly all parts of the body except the central nervous system (CNS). Growth in the CNS is primarily influenced by the **Thyroid Stimulating Hormone (TSH)**. Together, these hormones help regulate the overall growth process during early developmental stages.

During puberty, the release of **sex hormones**—primarily **estrogen** in females and **testosterone** in males—plays a central role in the development of sexual organs and secondary sex characteristics. We will explore these changes in more detail later in this module.





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Video 3.1.1. Explaining the two systems that is responsible for producing and releasing hormone in our body.

Media Attributions

- Screenshot 2025-03-16 at 11.18.51 AM

19.

Children grow and develop at a rapid pace. The development of both gross and fine motor skills helps a child to develop and allow them to participate in more activities. Motor development occurs in an orderly sequence as infants move from reflexive reactions (e.g., sucking and rooting) to more advanced motor functioning. As motor skills develop, there are certain developmental milestones that young children should achieve. For each milestone there is an average age, as well as a range of ages in which the milestone should be reached.

Fine motor skills focus on the muscles in our fingers, toes, and eyes, and enable coordination of small actions (e.g., grasping a toy, writing with a pencil, and using a spoon). In middle childhood, fine motor skills are also being refined in activities such as pouring water into a container, drawing, coloring, and using scissors. Some children's songs promote fine motor skills as well (have you ever heard of the song "itsy, bitsy, spider"?). Mastering the fine art of cutting one's own fingernails or tying shoes will take a lot of practice and maturation.

Motor skills continue to develop during middle childhood, especially as children enter the school system and gain more opportunities to practice writing. For example, by the age of six, most children can write the alphabet, their name, and the numbers 1 through 10. However, it is not uncommon for them to use their whole arm while writing, which often results in large and uneven letters. As their fine motor skills continue to improve, their handwriting becomes more controlled and legible.



Gross motor skills focus on large muscle groups that control our head, torso, arms and legs and involve larger movements (e.g., balancing, running, and jumping). These skills begin to develop first. Examples include moving to bring the chin up when lying on the stomach, moving the chest up, and rocking back and forth on hands and knees. As children enter primary school, they have more opportunities to participate in organized

sports, which contributes to the development of their gross motor skills. In general, gross motor skills improve in four major areas during middle childhood: flexibility, balance, agility, and force.



Exercise and Sports

Middle childhood seems to be a great time to introduce children to organized sports, and in fact, many parents do. Nearly 3 million children play soccer in the United States (United States Youth Soccer, 2012). This activity promises to help children build social skills, improve athletically, and learn a sense of competition. However, it has been suggested that the emphasis on competition and athletic abilities can be counterproductive and lead children to grow tired of the game and want to quit. In many respects, it appears that children's activities are no longer children's activities once adults become involved and approach the games as adults rather than children. The U. S. Soccer Federation recently advised coaches to reduce the amount of drilling engaged in during practice and to allow children to play more freely and to choose their own positions. The hope is that this will build on their love of the game and foster their natural talents.

Sports are important for children. Children's participation in sports has been linked to:

- Higher levels of satisfaction with family and overall quality of life in children
- Improved physical and emotional development
- Better academic performance

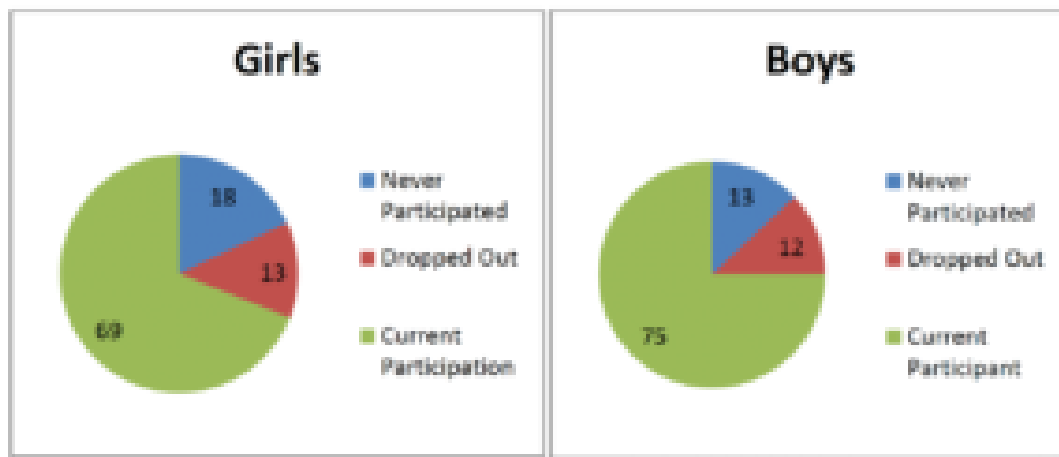
CDC (U.S. Department of Health and Human Services, 2018) recommends that children and adolescents between the age of 6 to 17 years old to have 60 minutes or more of moderate-to-vigorous intensity physical activity each day, including:

- **Aerobic activity:** Most of the daily 60 minutes or more should include activities such as walking, running, or anything that makes their hearts beat faster. At least 3 days a week should include vigorous-intensity activities.
- **Muscle-strengthening:** Includes activities like climbing or doing push-ups, at least 3 days a week.

- **Bone-strengthening:** Includes activities such as jumping or running, at least 3 days a week.

Yet, a study on children's sports in the United States (Sabo & Veliz, 2008) has found that gender, poverty, location, ethnicity, and disability can limit opportunities to engage in sports. Girls were more likely to have never participated in any type of sport (see Figure 3.2.1). They also found that fathers may not be providing their daughters as much support as they do their sons.

While boys rated their fathers as their biggest mentor who taught them the most about sports, girls rated coaches, and physical education teachers as their key mentors. Sabo and Veliz also found that children in suburban neighborhoods had much higher participation in sports than boys and girls living in rural or urban centers. In addition, Caucasian girls and boys participated in organized sports at higher rates than minority children (see Figure 3.2.2).



Total girls (n=1051). Total boys (n=1081)

t-test comparing gender and students who have never participated in sports. $t=-3.038^{**}$, $p=.002$, $df=2130$

Figure 3.2.1. Participation in organized sports (%) by gender.

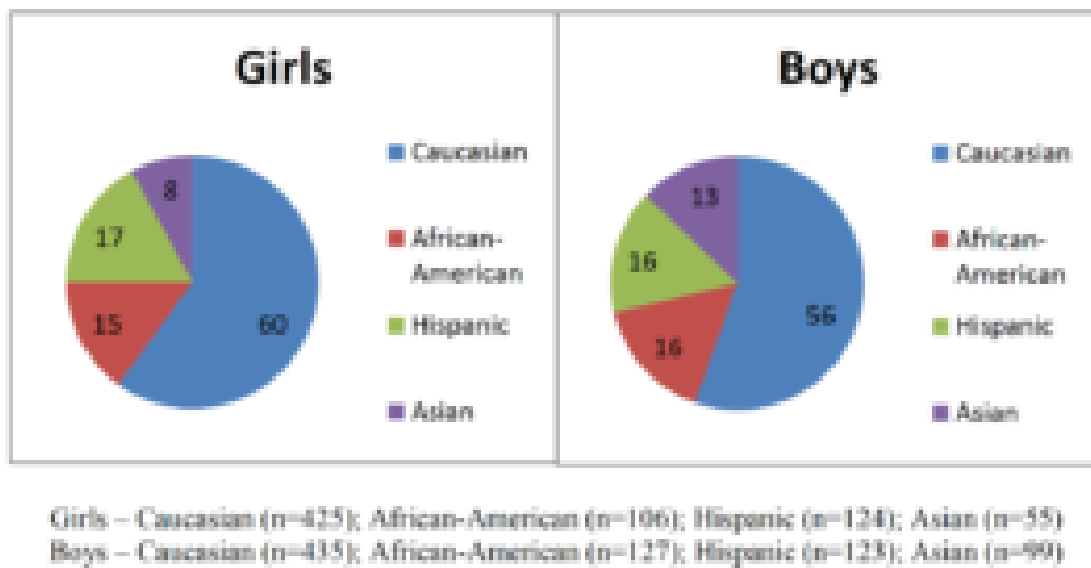


Figure 3.2.2. Participation in organized sports (%) by race and ethnicity.

Finally, Sabo and Veliz asked children who had dropped out of organized sports why they left. For both girls and boys, the number one answer was that it was no longer any fun (see Table 4.4.1). According to the Sports Policy and Research Collaborative (SPARC) (2013), almost 1 in 3 children drop out of organized sports, and while there are many factors involved in the decisions to drop out, one suggestion has been the lack of training that coaches of children's sports receive may be contributing to this attrition (Barnett, Smoll & Smith, 1992). Several studies have found that when coaches receive proper training, the drop-out rate is about 5% instead of the usual 30% (Fraser-Thomas, Côté, & Deakin, 2005; SPARC, 2013).

Table 3.2.1. Top reasons dropped out or stopped playing organized sports by gender

Girls		Boys	
I was not having fun	38%	I was not having fun	39%
I wanted to focus more on studying and grades	36%	I had a health problem or injury	29%
I had a health problem or injury	27%	I wanted to focus more on studying and grades	26%
I wanted to focus more on other clubs or activities	22%	I did not like or get along with the coach	22%
I did not like or get along with the coach	18%	I wanted to focus more on other clubs or activities	18%
I did not like or get along with others on the team	16%	I did not like or get along with others on the team	16%
I was not a good enough player	15%	I was not a good enough player	15%
My family worried about me getting hurt or injured while playing sports	14%	My family worried about me getting hurt or injured while playing sports	12%

Source: Sabo, D., & Veliz, P. (2008). *On Out and Play: Youth Sports in America*. East Meadow, NY: Women's Sports

Welcome to the World of E-Sports

The recent SPARC (2016) report on the “State of Play” in the United States highlights a disturbing trend. One in four children between the ages of 5 and 16 rate playing computer games with their friends as a form of exercise. In addition, **e-sports**, which as SPARC writes, is about as much a sport as poker, *involves children watching other children play video games*. over half of males, and about 20% of females, aged 12-19, say they are fans of e-sports.

Since 2008 there has also been a downward trend in the number of sports children are engaged in, despite a body of research evidence that suggests that specializing in only one activity can increase the chances of injury while playing multiple sports is protective (SPARC, 2016). A University of Wisconsin study found that 49% of athletes who specialized in a sport experienced an injury compared with 23% of those who played multiple sports (McGuine, 2016).

Physical Education

For many children, physical education in school is a key component in introducing children to sports. After years of schools cutting back on physical education programs, there has been a turnaround, prompted by concerns over childhood obesity and related health issues. Despite these changes, currently, only the state of Oregon and the District of Columbia meet PE guidelines of a minimum of 150 minutes per week of physical activity in elementary school and 225 minutes in middle school (SPARC, 2016).

Media Attributions

- 6yo handwriting
- primary school exercise

20.

Puberty Begins

Puberty is the period of rapid growth and sexual development that begins in adolescence and starts at some point between ages 8 and 14. While the sequence of physical changes in puberty is predictable, the onset and pace of puberty vary widely. Every person's individual timetable for puberty is different and is primarily influenced by heredity; however, environmental factors—such as diet and exercise—also exert some influence.

Adolescence has evolved historically, with evidence indicating that this stage is lengthening as individuals start puberty earlier and transition to adulthood later than in the past. Puberty today begins, on average, at age 10–11 years for girls and 11–12 years for boys. This average age of onset has decreased gradually over time since the 19th century by 3–4 months per decade, which has been attributed to a range of factors including better nutrition, obesity, increased father absence, and other environmental factors (Steinberg, 2013). Completion of formal education, financial independence from parents, marriage, and parenthood have all been markers of the end of adolescence and beginning of adulthood, and all of these transitions happen, on average, later now than in the past. In fact, the prolonging of adolescence has prompted the introduction of a new developmental period called emerging adulthood that captures these developmental changes out of adolescence and into adulthood, occurring approximately from ages 18 to 29 (Arnett, 2000).

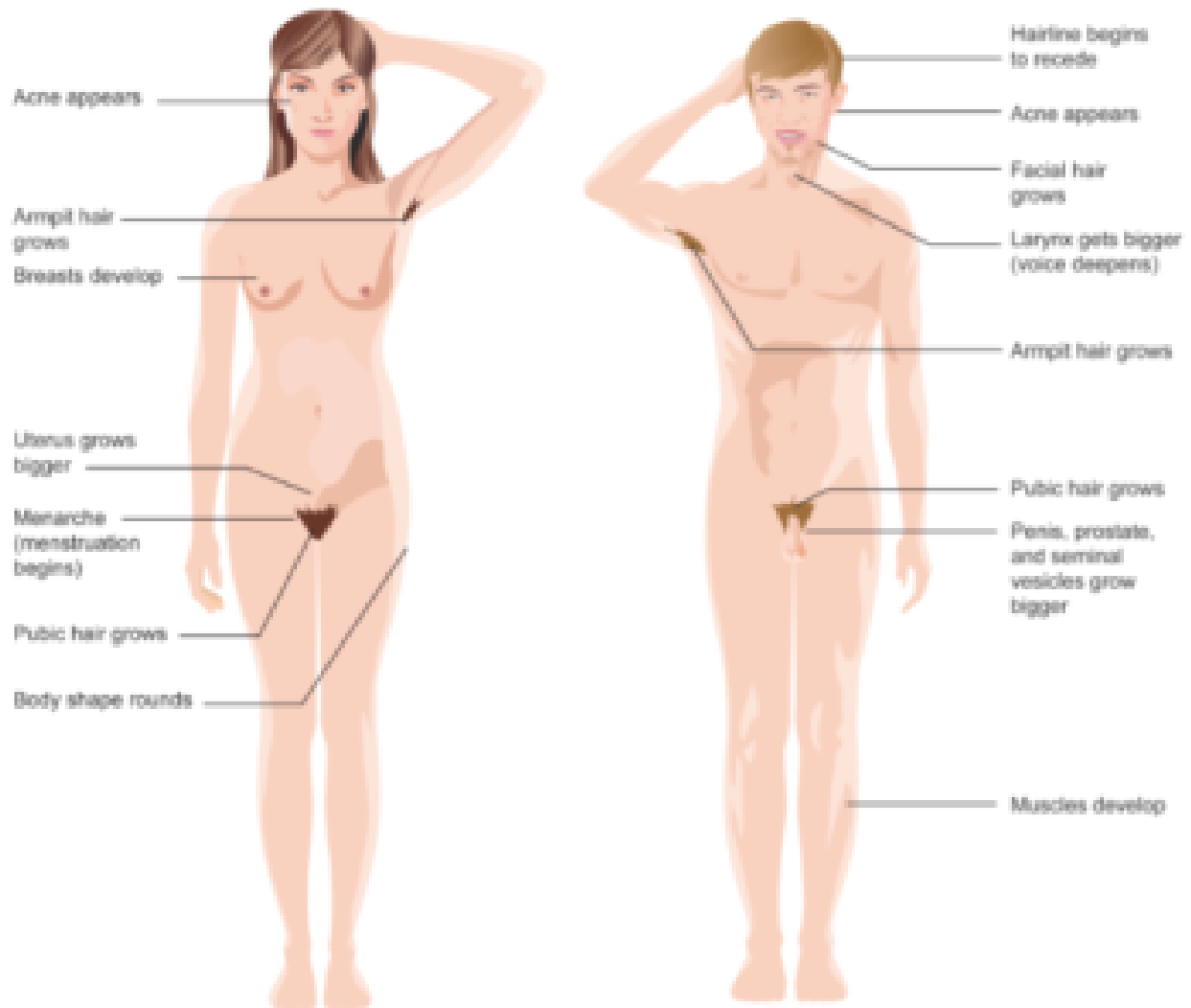


Figure 4.2.1. Major physical changes during puberty.

Hormonal Changes

Puberty involves distinctive physiological changes in an individual's height, weight, body composition, and circulatory and respiratory systems, and during this time, both the adrenal glands and sex glands mature. These changes are primarily influenced by hormonal activity. Many hormones contribute to the beginning of puberty, but most notably, a significant rush of **estrogen** for girls and **testosterone** for boys. Hormones play an *organizational role* (priming the body to behave in a certain way once puberty begins) and an *activational role* (triggering certain behavioral and physical changes). During puberty, the adolescent's hormonal balance shifts sharply towards an adult state; the process is triggered by the pituitary gland, which secretes a surge of hormonal agents into the bloodstream and initiates a chain reaction.

Puberty occurs over two distinct phases, and the first phase, **adrenarche**, begins at 6 to 8 years of age and involves increased production of adrenal androgens that contribute to a number of pubertal changes—such

as skeletal growth. The second phase of puberty, **gonadarche**, begins several years later and involves increased production of hormones governing physical and sexual maturation.

Sexual Maturation

During puberty, primary and secondary sex characteristics develop and mature. **Primary sex characteristics** are organs specifically needed for reproduction—the uterus and ovaries in females and testes in males. **Secondary sex characteristics** are physical signs of sexual maturation that do not directly involve sex organs, such as the development of breasts and hips in girls, and growth of facial hair and a deepened voice in boys. Both sexes experience the development of pubic and underarm hair, as well as increased development of sweat glands.

The male and female **gonads** are activated by the surge of the hormones discussed earlier, which puts them into a state of rapid growth and development. The testes primarily release testosterone, and the ovaries release estrogen; the production of these hormones increases gradually until sexual maturation is met.

For girls, observable changes begin with nipple growth and pubic hair. Then the body increases in height while fat forms, particularly on the breasts and hips. The first menstrual period (**menarche**) is followed by more growth, which is usually completed by four years after the first menstrual period began. Girls experience menarche usually around 12–13 years old. For boys, the usual sequence is growth of the testes, initial pubic-hair growth, growth of the penis, first ejaculation of seminal fluid (**spermarche**), appearance of facial hair, a peak growth spurt, deepening of the voice, and final pubic-hair growth. (Herman-Giddens et al., 2012). Boys experience spermarche, the first ejaculation, around 13–14 years old.

Physical Growth: The Growth Spurt

During puberty, both sexes experience a rapid increase in height and weight (referred to as a **growth spurt**) over about 2-3 years resulting from the simultaneous release of growth hormones, thyroid hormones, and androgens. Males experience their growth spurt about two years later than females. For girls, the growth spurt begins between 8 and 13 years old (average 10-11), with adult height reached between 10 and 16 years old. Boys begin their growth spurt slightly later, usually between 10 and 16 years old (average 12-13), and reach their adult height between 13 and 17 years old. Both nature (i.e., genes) and nurture (e.g., nutrition, medications, and medical conditions) can influence both height and weight.

Before puberty, there are nearly no differences between males and females in the distribution of fat and muscle. During puberty, males grow muscle much faster than females, and females experience a higher increase in body fat, and bones become harder and more brittle. An adolescent's heart and lungs increase in both size and capacity during puberty; these changes contribute to increased strength and tolerance for exercise.

Reactions Toward Puberty and Physical Development

The accelerated growth in different body parts happens at different times, but for all adolescents, it has a fairly regular sequence. The first places to grow are the extremities (head, hands, and feet), followed by the arms and legs, and later the torso and shoulders. This non-uniform growth is one reason why an adolescent body may seem out of proportion. Additionally, because rates of physical development vary widely among teenagers, puberty can be a source of pride or embarrassment.

Most adolescents want nothing more than to fit in and not be distinguished from their peers in any way, shape, or form (Mendle et al., 2016). So when a child develops earlier or later than his or her peers, there can be long-lasting effects on mental health. Simply put, beginning puberty earlier than peers presents significant challenges, particularly for girls. The picture for early-developing boys isn't as clear, but evidence suggests that they, too, eventually might suffer ill effects from maturing ahead of their peers. The biggest challenges for boys, however, seem to be more related to late development.

Early maturing boys tend to be stronger, taller, and more athletic than their later maturing peers. They are usually more popular, confident, and independent, but they are also at a greater risk for substance abuse and early sexual activity (Flannery, Rowe, & Gulley, 1993; Kaltiala-Heino, Rimpela, Rissanen, & Rantanen, 2001). Additionally, more recent research found that while early-maturing boys initially had lower levels of depression than later-maturing boys, over time, they showed signs of increased anxiety, negative self-image, and interpersonal stress. (Rudolph, Troop-Gordon, Lambert, & Natsuaki, 2014).

Early maturing girls may be teased or overtly admired, which can cause them to feel self-conscious about their developing bodies. These girls are at increased risk of a range of psychosocial problems, including depression, substance use, and early sexual behavior (Graber, 2013). These girls are also at a higher risk for eating disorders, which we will discuss in more detail later in this module (Ge, Conger, & Elder, 2001; Graber, Lewinsohn, Seeley, & Brooks-Gunn, 1997; Striegel-Moore & Cachelin, 1999).

Late maturing boys and girls (i.e., they develop more slowly than their peers) may feel self-conscious about their lack of physical development. Negative feelings are particularly a problem for late maturing boys, who are at a higher risk for depression and conflict with parents (Graber et al., 1997) and more likely to be bullied (Pollack & Shuster, 2000).



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://wisconsin.pressbooks.pub/adolescentpsychology/?p=78#oembed-1>

Video 3.3.1. *Development in Adolescence* provides an overview of physical changes during adolescence and psychosocial impacts.

21.

Sexual Development

Developing sexually is an expected and natural part of growing into adulthood. Healthy sexual development involves more than sexual behavior. It is the combination of physical sexual maturation (puberty, age-appropriate sexual behaviors), the formation of a positive sexual identity, and a sense of sexual well-being (discussed more in-depth later in this module). During adolescence, teens strive to become comfortable with their changing bodies and to make healthy, safe decisions about which sexual activities, if any, they wish to engage in.

Earlier in the physical development section, we discussed **primary and secondary sex characteristics**. During puberty, every primary sex organ (the ovaries, uterus, penis, and testes) increases dramatically in size and matures in function. During puberty, reproduction becomes possible. Simultaneously, secondary sex characteristics develop. These characteristics are not required for reproduction, but they do signify masculinity and femininity. At birth, boys and girls have similar body shapes, but during puberty, males widen at the shoulders, and females widen at the hips and develop breasts (examples of secondary sex characteristics). Sexual development is impacted by a dynamic mixture of physical and cognitive change, coupled with social expectations. With physical maturation, adolescents may become alternately fascinated with and chagrined by their changing bodies, and often compare themselves to the development they notice in their peers or see in the media. For example, many adolescent girls focus on their breast development, hoping their breasts will conform to an ideal body image.

As sex hormones cause biological changes, they also affect the brain and trigger sexual thoughts. Culture, however, shapes actual sexual behaviors. Emotions regarding sexual experience, like the rest of puberty, are strongly influenced by cultural norms regarding what is expected at what age, with peers being the most influential. Simply put, the most important influence on adolescents' sexual activity is not their bodies, but their close friends, who have more influence than do sex or ethnic group norms (van de Bongardt et al., 2015).

Sexual interest and interaction are a natural part of adolescence. Sexual fantasy and **masturbation** episodes increase between the ages of 10 and 13. Masturbation is very ordinary—even young children have been known to engage in this behavior. As the bodies of children mature, powerful sexual feelings begin to develop, and masturbation helps release sexual tension. For adolescents, masturbation is a common way to explore their erotic potential, and this behavior can continue throughout adult life.





One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://wisconsin.pressbooks.pub/adolescentpsychology/?p=80#oembed-1>

Video 3.4.1. *“What Happens When?” Child and Adolescent Sexual Development* explains major milestones in sexual development throughout childhood and adolescence, as well as how to support kids during these stages.

Sexual Interactions

Many early social interactions tend to be nonsexual—text messaging, phone calls, email—but by the age of 12 or 13, some young people may pair off and begin dating and experimenting with kissing, touching, and other physical contact, such as oral sex. The vast majority of young adolescents are not prepared emotionally or physically for oral sex and sexual intercourse. If adolescents this young do have sex, they are highly vulnerable to sexual and emotional abuse, **sexually transmitted infections (STIs)**, HIV, and early pregnancy. For STI’s in particular, adolescents are slower to recognize symptoms, tell partners, and get medical treatment, which puts them at risk of infertility and even death.

Adolescents ages 14 to 16 understand the consequences of unprotected sex and teen parenthood, if properly taught, but cognitively they may lack the skills to integrate this knowledge into everyday situations or consistently to act responsibly in the heat of the moment. By the age of 17, many adolescents have willingly experienced sexual intercourse. Teens who have early sexual intercourse report strong peer pressure as a reason behind their decision. Some adolescents are just curious about sex and want to experience it.

Becoming a sexually healthy adult is a developmental task of adolescence that requires integrating psychological, physical, cultural, spiritual, societal, and educational factors. It is particularly important to understand the adolescent in terms of his or her physical, emotional, and cognitive stage. Additionally, healthy adult relationships are more likely to develop when adolescent impulses are not shamed or feared. Guidance is certainly needed, but acknowledging that adolescent sexuality development is both normal and positive would allow for more open communication so adolescents can be more receptive to education concerning the risks (Tolman & McClelland, 2011).

Adolescents are receptive to their culture, to the models they see at home, in school, and in the mass media. These observations influence moral reasoning and moral behavior, which we discuss in more detail later in this module. Decisions regarding sexual behavior are influenced by teens’ ability to think and reason, their values, and their educational experience. Helping adolescents recognize all aspects of sexual development encourages them to make informed and healthy decisions about sexual matters.

Teenage Sexual Activity Trends

Teenagers are much more sexually active today than they were before the sexual revolution of the 1960s and 70s. About 43 percent of never-married teens ages 15–19 of both sexes have had sexual intercourse (Martinez et al., 2011); this percentage represents a drop from its highest point, in 1988, of 51 percent for females and of 60 percent for males. About three-fourths of girls in today's sexually experienced group and 85 percent of boys in this group use contraception, most often a condom, the first time they ever have sex. In their most recent act of sexual intercourse, almost 86 percent of girls and 93 percent of boys used contraception, again most often a condom.

If 43 percent of teens have had sexual intercourse, that means the majority of teens, 57 percent, have never had intercourse. It is interesting to examine their reasons. The table below identifies the main reason given for never having sexual intercourse. The top reason for both sexes is religion and morals, followed by concern about a possible pregnancy and not having found the right person with whom to have sex (Martinez et al., 2011).

Table 3.4.1. Main Reason Given for Never Having Sexual Intercourse, Ages 15–19 (%)

	Females	Males
Against religion or morals	38	31
Don't want to get (a female) pregnant	19	25
Haven't found the right person yet	17	21
Don't want to get an STI	7	10
In a relationship, but waiting for the right time	7	5
Other reason	12	8

The Problem of Teenage Pregnancy

Most teenage pregnancies and births are unplanned and are part of a more general problem for all women in their childbearing years. Almost 700,000 unplanned teenage pregnancies occur annually; another 50,000 teenage pregnancies are planned. These 750,000 teenage pregnancies annually result in some 400,000 births (Kost, Henshaw, & Carlin, 2010). Altogether, about 18 percent of women, or one of every six females, become teen mothers, and in several southern and southwestern states, this percentage is as high as 25–30 percent (Perper & Manlove, 2009).

The birth rate for females aged 15–19 in 2009 was 39.1 births per 1,000 females. This rate represented a substantial decline from the early 1990s when the rate reached a peak of almost 60. However, it was still twice as high as Canada's rate and much higher yet than other Western democracies (Figure 3.4.1).

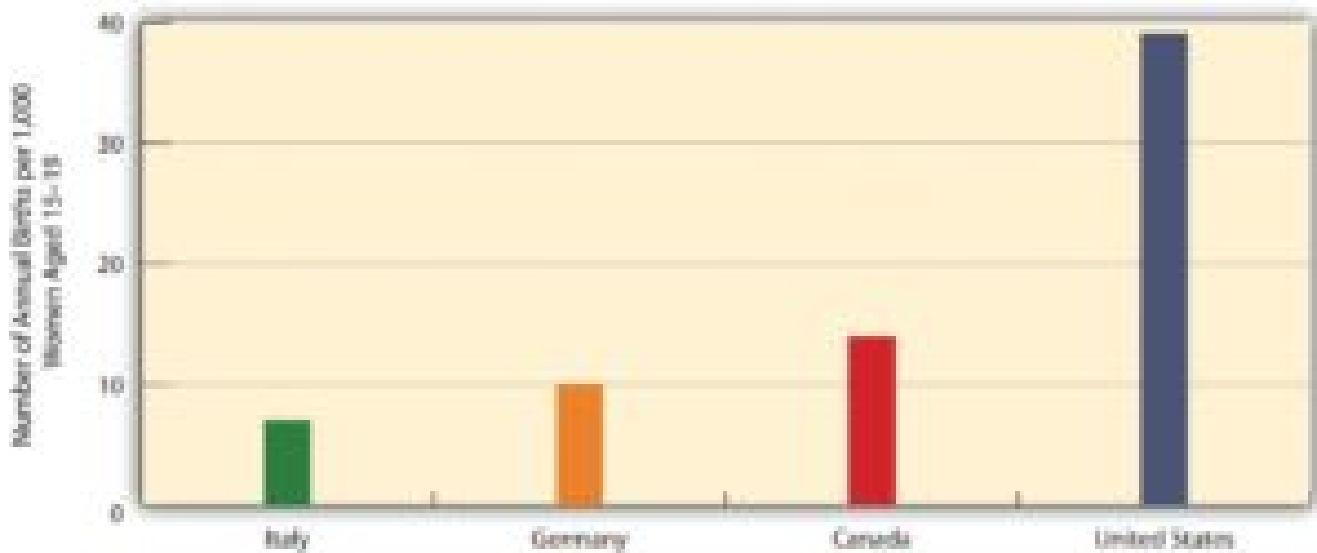


Figure 3.4.1. Teenage Birth Rates in Selected Western Democracies

Although teenaged pregnancies (and births from these pregnancies) are far from the majority of all pregnancies, unplanned or planned, they pose special problems (American College of Obstetricians and Gynecologists, 2011; Anderson, 2014). On the individual level, pregnant teenagers are more at risk than older pregnant women for high blood pressure and anemia, and they are also more likely to experience early labor, premature birth, and low birth weight. In addition, because teenagers are more likely than adults to have STIs, pregnant teenagers are more likely than older pregnant women to have an STI while they are pregnant, either because they already had an STI when they conceived or because they contract an STI from having sex during pregnancy.

Many pregnant teenagers decide to drop out of school. If they stay in school, they often must deal with the embarrassment of being pregnant, and the physical and emotional difficulties accompanying their teenage pregnancy can affect their school performance. Once the baby is born, child care typically becomes an enormous problem, whether or not the new mother is in school. Because pregnant teenagers disproportionately come from families that are poor or near-poor, they have few financial resources and often have weak social support networks, either before or after the baby is born (Andrews & Moore, 2011).

At the societal level, teenage pregnancy and motherhood are very costly in at least two important respects. First, because pregnancy and childbirth complications are more common among teenagers, their health-care expenses during and after pregnancy and childbirth are often higher than the expenses incurred by older women. Medicaid, the federal government's national health plan for poor families, often covers much of these expenses, and the premiums that private health insurance companies charge are higher than otherwise because of their expenses when they insure the families of pregnant teenagers.

Second, the children of teenage mothers are at risk for several kinds of behavioral and developmental problems. Teenage parents may be unprepared emotionally or practically to raise a child. Children of teen

parents may receive less cognitive stimulation and proper emotional support. In addition, the stress they experience as young parents put them at risk of neglecting or abusing their children. Teenage parents also tend to come from low-income families and continue to live in poverty or near poverty after they become mothers compounds all these problems. For all these reasons, the children of teenage mothers are at greater risk for several kinds of issues. These problems include impaired neurological development, behavioral problems, poor school performance, and chronic health problems.

Reducing Teenage Pregnancy

In an effort to reduce teenage pregnancies, two approaches have been used: (1) Emphasize abstinence, convincing teens to hold off on having sex until adulthood or marriage, and (2) comprehensive sex education, including teaching the effective use of contraception if they do have sex. Most sexual behavior researchers believe that pleas for abstinence, as well as sex education programs that focus solely or almost entirely on abstinence, do not help to reduce teen sex and pregnancy (Ball & Moore, 2008).

Comprehensive sex education is based on the strategy of harm reduction. A harm reduction approach recognizes that because certain types of harmful behavior are inevitable, our society should do its best to minimize the various kinds of harm that these various behaviors generate. In regard to teenage sex and pregnancy, a harm reduction approach has two goals: (1) to help reduce the risk for pregnancy among sexually active teens and (2) to help teenage parents and their children.

To achieve the first goal, parents, sex education classes, family planning clinics, youth development programs, and other parties must continue to emphasize the importance of waiting to have sex but also the need for teenagers to use contraception if they are sexually active. In addition, effective contraception (birth control pills, other hormonal control, and even condoms, which protect against STIs) must be made available for teenagers at little or no cost. Studies indicate that these two contraception strategies do not lead to more teenage sex, and they also indicate that consistent contraceptive use dramatically reduces the risk of teenage pregnancy. As one writer has summarized these studies' conclusions, "Contraceptives no more cause sex than umbrellas cause rain...When contraception is unavailable, the likely consequences is not less sex, but more pregnancy" (Kristof, 2011, p. A31).

In this regard, a recent report of the Guttmacher Institute called contraception a "proven, cost-effective strategy" (Gold, 2011, p. 7). It added, "Contraception is almost universally accepted as a way to reduce the risk of unintended pregnancy...Contraceptive use reduces the risk of unintended pregnancy significantly, and consistent contraceptive use virtually eliminates it." The report noted that government-funded family planning agencies prevent 2 million unintended pregnancies annually by providing contraception to 9 million young and low-income women each year. Because most of the women who would have these prevented pregnancies would be eligible for Medicaid, the Medicaid savings from these prevented pregnancies amount to about \$7 billion annually. An expansion of family planning services would almost certainly be an effective strategy for reducing teenage pregnancies as well as unplanned pregnancies among older women.

Another strategy to prevent teenage pregnancy involves the use of early childhood intervention (ECI) programs. Many such programs exist, but they generally include visits by social workers, nurses, and other professionals to the homes of children who are at risk for neurological, emotional, and/or behavioral problems during their first several years and also as they grow into adolescents and young adults (Kahn & Moore, 2010). It might sound like a stereotype, but these children are disproportionately born to single, teenage mothers and/or to slightly older parents who live in poverty or near poverty. Long-term evaluation studies show that the best of these programs reduce the likelihood that the very young children they help will become pregnant or have children of their own after they become teenagers (Ball & Moore, 2008). In effect, assisting young children to today helps prevent teenage pregnancy tomorrow.

The second prong to this harm reduction strategy targets teenage parents and their children. Because teen pregnancies occur despite the best prevention efforts, the second goal of a harm reduction approach is to help teens during their pregnancy and after childbirth. This strategy has the immediate aim of providing practical and emotional support for these very young mothers; it also has the longer-term goals of reducing repeat pregnancies and births and of preventing developmental and behavior problems among their children.

To achieve these aims, Early Childhood Intervention programs have again been shown to be helpful (Ball & Moore, 2008). Another type of program to help teen mothers involves the use of second-chance homes, which are maternity group homes for unmarried teen mothers (Andrews & Moore, 2011). One of the many sad facts of teenage motherhood is that teen mothers often have nowhere to live. A teen mother's parent(s) may refuse to let her and her infant live with them, either because they are angry at her pregnancy or because they simply do not have the room or financial means to house and take care of a baby. Or a pregnant teen may decide to leave her parents' home because of the parents' anger or because they refuse to let her continue seeing the child's father. In another possibility, a teen mother may begin living with the father, but these unions are typically unstable and often end, again leaving her and her child without a home. As well, many teen mothers were runaways from home before they became pregnant or were living in foster care. Because of all these situations, many teen mothers find themselves without a place to live.

In second-chance homes (which, depending on the program, are in reality one large house, a set of apartments, or a network of houses), mothers and children (as well as pregnant teens) receive shelter and food, but they also receive essential services, such as childrearing help, educational and vocational counseling and training, family planning counseling, and parenting classes. Although rigorous evaluation studies do not yet exist on the effectiveness of second-chance homes, they do seem to offer a valuable resource for teen mothers and their children (Andrews & Moore, 2011).

A final strategy for addressing the problem of teenage sex and pregnancy is to address a more general societal condition that helps produce teenage sex and pregnancy. This condition is poverty. As noted earlier, children who grow up in poor families and in disadvantaged neighborhoods—those with high rates of poverty, unemployment, high school dropouts, and so forth—are more likely to have sex earlier as teens and to become pregnant (Harding, 2003).

Sexually Transmitted Infections

In addition to pregnancy and birth, another problem associated with teenage sexual activity is the transmission of sexually transmitted infections (STIs). This is a problem during the teenage years, but it is even more of a problem during young adulthood, when sexual activity is higher than during adolescence (Wildsmith, Schelar, Peterson, & Manlove, 2010). The STI rate in the United States is higher than in most other Western democracies. Almost 19 million new cases of STIs are diagnosed annually, and more than 65 million Americans have an incurable STI, such as herpes. Although teens and young adults ages 15–24 compose only one-fourth of sexually active people, they account for one-half of all new STIs. Despite this fact, most young adults who test positive for an STI did not believe they were at risk of getting an STI (Wildsmith et al., 2010).

In any one year, 15 percent of young adults ages 18 and 26 have an STI. This figure masks a significant gender difference: 20 percent of young women have had an STI in the past year, compared to 10 percent of young men. It also masks important racial/ethnic differences: 34 percent of young African Americans have had an STI in the past year, compared to 10 percent of Asians, 15 percent of Hispanics, and 10 percent of whites.

Three types of sexual behaviors increase the risk of transmitting or contracting an STI: having sex with at least three partners during the past year, having a sex partner with a known STI, and not using a condom regularly. About 17 percent of sexually active young adults have had at least three partners during the past year, and 8 percent have had a partner with a known STI. Three-fourths of unmarried sexually active young adults do not use a condom regularly. Combining all these risk factors, 39 percent have engaged in one risk factor in the past year, 14 percent have engaged in at least two risk factors, and the remainder, 48 percent, have engaged in no risk factors (Wildsmith et al., 2010).

Think About It

1. Imagine that you became a parent at age 17. How would your life have been different from what it is now?
2. Many sexually active teenagers do not use contraception regularly. Why do you think they do not use it more often?

22.

Health Concerns during Adolescence

Nutrition

Adequate nutrition is necessary for optimal growth and development. Dietary choices and habits established during middle childhood and adolescence greatly influence future health, yet many studies report that children consume few fruits and vegetables and are not receiving the calcium, iron, vitamins, or minerals necessary for healthy development.

One of the reasons for poor nutrition is anxiety about **body image**, which is a person's idea of how his or her body looks. Children as young as 6 years old are worrying about their size, body image dissatisfaction generally increases as children get older. The way children feel about their bodies can affect the way they feel about themselves as a whole. Few adolescents welcome their sudden weight increase, so they may adjust their eating habits to lose weight. Adding to the rapid physical changes, they are simultaneously bombarded by messages, and sometimes teasing, related to body image, appearance, attractiveness, weight, and eating that they encounter in the media, at home, and from their friends/peers (both in-person and via social media).

Much research has been conducted on the psychological ramifications of body image on adolescents. Modern-day teenagers are exposed to more media on a daily basis than any generation before them. Recent studies have indicated that the average teenager watches roughly 1500 hours of television per year, and 70% use social media multiple times a day. As such, adolescents are exposed to many representations of ideal, societal beauty. The concept of a person being unhappy with their own image or appearance has been defined as “**body dissatisfaction**.” In teenagers, body dissatisfaction is often associated with body mass, low self-esteem, and atypical eating patterns. Scholars continue to debate the effects of media on body dissatisfaction in teens. What we do know is that two-thirds of U.S. high school girls are trying to lose weight, and one-third think they are overweight, while only one-sixth are actually overweight (MMWR, June 10, 2016).

Obesity

Although at the peak of physical health, a concern for early adults is the current rate of obesity. Results from the 2015 National Center for Health Statistics indicate that an estimated 70.7% of U.S. adults aged 20 and over are overweight, and 37.9% are obese (CDC, 2015b). **Body mass index (BMI)**, *expressed as weight in kilograms divided by height in meters squared (kg/m^2)*, is commonly used to classify overweight (BMI 25.0–29.9), obesity (BMI greater than or equal to 30.0), and extreme obesity (BMI greater than or equal to 40.0). The 2015 statistics show an increase from the 2013-2014 statistics that indicated that an estimated 35.1% were obese, and

6.4% extremely obese (Fryar, Carroll, & Ogden, 2014). In 2003-2004, 32% of American adults were identified as obese. The CDC also indicated that one's 20s are the prime time to gain weight as the average person gains one to two pounds per year from early adulthood into middle adulthood. The average man in his 20s weighs around 185 pounds and by his 30s, weighs approximately 200 pounds. The average American woman weighs 162 pounds in her 20s and 170 pounds in her 30s.

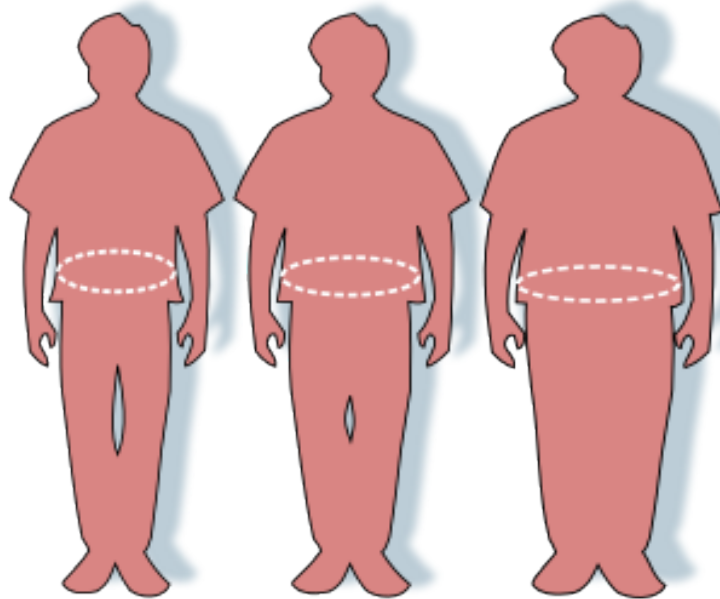


Figure 3.5.1. Waist circumference.

The American obesity crisis is also reflected worldwide (Wighton, 2016). In 2014, global obesity rates for men were measured at 10.8% and among women 14.9%. This translates to 266 million obese men and 375 million obese women in the world, and more people were identified as obese than underweight. Although obesity is seen throughout the world, more obese men and women live in China and the USA than in any other country. Figure 4.3 illustrates how waist circumference is also used as a measure of obesity. Figure 4.4 demonstrates the percentage of growth for males and females identified as obese between 1960 and 2012.

Causes of Obesity

According to the Centers for Disease Control and Prevention (CDC) (2016), obesity originates from a complex set of contributing factors, including one's environment, behavior, and genetics. Societal factors include culture, education, parental attitude, food marketing and promotion, the quality of food, and the physical activity environment available. Behaviors leading to obesity include diet, the amount of physical activity, and medication use. Lastly, there does not appear to be a single gene responsible for obesity. Rather, research has identified variants in several genes that may contribute to obesity by increasing hunger and food intake. Another genetic explanation is the mismatch between today's environment and "energy-thrifty genes"

that multiplied in the distant past when food sources were unpredictable. The genes that helped our ancestors survive occasional famines are now being challenged by environments in which food is plentiful all the time. Overall, obesity most likely results from complex interactions among the environment and multiple genes.

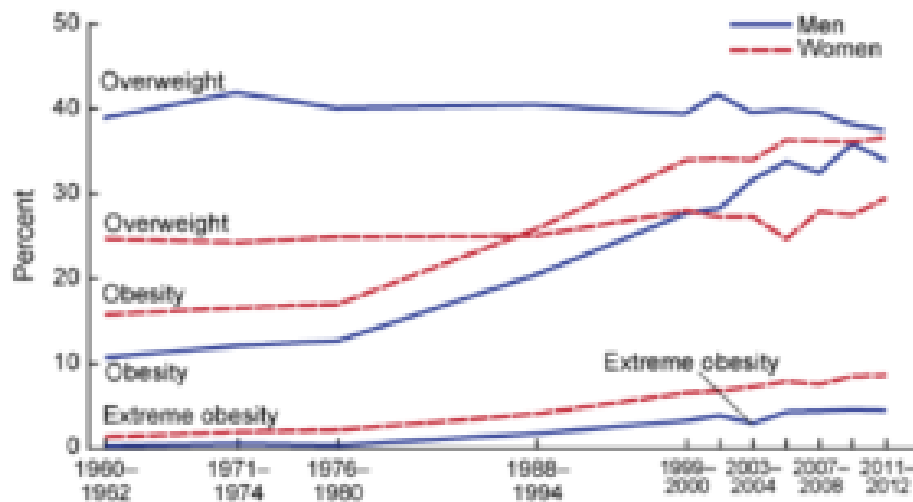


Figure 3.5.2. Adult obesity trends *Notes:* Age-adjusted by the direct method to the year 2000 U.S. Census Bureau estimates using age groups 20–39, 40–59, and 60–74. Pregnant females were excluded. Overweight is body mass index (BMI) of 25 or greater but less 30; obesity is BMI greater than or equal to 30; and extreme obesity is BMI greater than or equal to 40. **SOURCE:** CDC/NCHS, National Health Examination Survey 1960–1962; and National Health and Nutrition Examination Surveys 1971–1974; 1976–1980; 1988–1994; 1999–2000, 2001–2002, 2003–2004, 2005–2006, 2007–2008, 2009–2010, and 2011–2012.

Family plays a crucial role in shaping children’s attitudes toward food. For example, research has shown that daughters of mothers with eating disorders are at higher risk of developing disordered eating behaviors themselves (Ferreira et al., 2021). Parents influence children’s relationship with food in many ways—even as early as the preschool years. For instance, studies have found that pressuring young children to eat healthy foods can actually backfire, leading to poorer eating habits over time (citation needed). These findings highlight the importance of promoting healthy eating through supportive, non-coercive approaches in the family environment.

Obesity Health Consequences

Obesity is considered to be one of the leading causes of death in the United States and worldwide. Additionally, the medical care costs of obesity in the United States were estimated to be \$147 billion in 2008. According to

the CDC (2016) compared to those with a normal or healthy weight, people who are obese are at increased risk for many serious diseases and health conditions, including:

- All-causes of death (mortality)
- High blood pressure (Hypertension)
- High LDL cholesterol, low HDL cholesterol, or high levels of triglycerides (Dyslipidemia)
- Type 2 diabetes
- Coronary heart disease
- Stroke
- Gallbladder disease
- Osteoarthritis (a breakdown of cartilage and bone within a joint)
- Sleep apnea and breathing problems
- Some cancers (endometrial, breast, colon, kidney, gallbladder, and liver)
- Low quality of life
- Mental illness such as clinical depression, anxiety, and other mental disorders
- Body pain and difficulty with physical functioning

Strategies on establishing a healthy eating pattern

As previously mentioned, parents play a vital role in shaping their children's eating habits. They are also key influencers in encouraging healthy dietary behaviors. However, it is important to avoid using coercive strategies—such as pressuring a child to eat certain foods—as these approaches can backfire and may actually reduce the child's willingness to eat healthily.

Instead, effective strategies for promoting healthy eating include:

- **Involving children in food-related activities** such as grocery shopping, meal planning, and cooking. This increases their interest in food and helps them feel more in control of their choices.
- **Offering a variety of nutritious options** and presenting them in an appealing way (e.g., colorful fruits and vegetables arranged in fun shapes).
- **Modeling healthy eating behaviors** by consistently making healthy food choices yourself.

By creating a positive and supportive food environment, parents can help foster lifelong healthy eating habits in their children.

Eating Disorders

Dissatisfaction with body image can explain why many teens, mostly girls, eat erratically or ingest diet pills to lose weight and why boys may take steroids to increase their muscle mass. Although eating disorders can occur in children and adults, they frequently appear during the teen years or young adulthood (NIMH, 2019). Eating disorders affect both genders, although rates among women are 2½ times greater than among men. Similar to women who have eating disorders, some men also have a distorted sense of body image, including **muscle dysmorphia** or an extreme concern with becoming more muscular.

Because of the high mortality rate, researchers are looking into the etiology of the disorder and associated risk factors. Researchers are finding that eating disorders are caused by a complex interaction of genetic, biological, behavioral, psychological, and social factors (NIMH, 2019). Eating disorders appear to run in families, and researchers are working to identify DNA variations that are linked to the increased risk of developing eating disorders. Researchers have also found differences in patterns of brain activity in women with eating disorders in comparison with healthy women. The main criteria for the most common eating disorders: **anorexia nervosa**, **bulimia nervosa**, and **binge-eating disorder** are described in the Diagnostic and Statistical Manual of Mental Disorders-Fifth Edition, DSM-5 (American Psychiatric Association, 2013).



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Video 4.4.1. *Eating Disorders* explains the symptoms of anorexia nervosa, bulimia nervosa, and binge-eating disorder, as well as common treatments.

Anorexia Nervosa

People with anorexia nervosa may see themselves as overweight, even when they are dangerously underweight. People with anorexia nervosa typically weigh themselves repeatedly, severely restrict the amount of food they eat, often exercise excessively, and/or may force themselves to vomit or use laxatives to lose weight. Anorexia nervosa has the highest mortality rate of any mental disorder. While many people with this disorder die from complications associated with starvation, others die of suicide.

Symptoms of anorexia nervosa include:

- Extremely restricted eating
- Extreme thinness (emaciation)
- A relentless pursuit of thinness and unwillingness to maintain a normal or healthy weight
- Intense fear of gaining weight
- Distorted body image, a self-esteem that is heavily influenced by perceptions of body weight and shape, or a denial of the seriousness of low body weight

Other symptoms may develop over time, including:

- Thinning of the bones (osteopenia or osteoporosis)
- Mild anemia and muscle wasting and weakness
- Brittle hair and nails
- Dry and yellowish skin
- Growth of fine hair all over the body (lanugo)
- Severe constipation
- Low blood pressure slowed breathing and pulse
- Damage to the structure and function of the heart
- Brain damage
- Multiorgan failure
- Drop-in internal body temperature, causing a person to feel cold all the time

- Lethargy, sluggishness, or feeling tired all the time
- Infertility

For those suffering from anorexia, health consequences include an abnormally slow heart rate and low blood pressure, which increases the risk of heart failure. Additionally, there is a reduction in bone density (osteoporosis), muscle loss and weakness, severe dehydration, fainting, fatigue, and overall weakness. Anorexia nervosa has the highest mortality rate of any psychiatric disorder. Individuals with this disorder may die from complications associated with starvation, while others die of suicide. In women, suicide is much more common in those with anorexia than with most other mental disorders.

Bulimia Nervosa

People with bulimia nervosa have recurrent and frequent episodes of eating unusually large amounts of food and feeling a lack of control over these episodes. This binge-eating is followed by behavior that compensates for overeating such as forced vomiting, excessive use of laxatives or diuretics, fasting, excessive exercise, or a combination of these behaviors. People with bulimia nervosa may be slightly underweight, normal weight, or overweight.

Symptoms of bulimia nervosa include:

- Chronically inflamed and sore throat
- Swollen salivary glands in the neck and jaw area
- Worn tooth enamel and increasingly sensitive and decaying teeth as a result of exposure to stomach acid
- Acid reflux disorder and other gastrointestinal problems
- Intestinal distress and irritation from laxative abuse
- Severe dehydration from purging of fluids
- Electrolyte imbalance (too low or too high levels of sodium, calcium, potassium, and other minerals) which can lead to stroke or heart attack

The bingeing and purging cycle of bulimia can affect the digestive system and lead to electrolyte and chemical imbalances that can affect the heart and other major organs. Frequent vomiting can cause inflammation and possible rupture of the esophagus, as well as tooth decay and staining from stomach acids. Lastly, binge eating disorder results in similar health risks to obesity, including high blood pressure, high cholesterol levels, heart disease, Type II diabetes, and gall bladder disease (National Eating Disorders Association, 2016).

Binge-Eating Disorder

People with binge-eating disorder lose control over his or her eating. Unlike bulimia nervosa, periods of binge-

eating are not followed by purging, excessive exercise, or fasting. As a result, people with binge-eating disorder often are overweight or obese. Binge-eating disorder is the most common eating disorder in the U.S.

Symptoms of binge-eating disorder include:

- Eating unusually large amounts of food in a specific amount of time, such as a 2-hour period
- Eating even when you're full or not hungry
- Eating fast during binge episodes
- Eating until you're uncomfortably full
- Eating alone or in secret to avoid embarrassment
- Feeling distressed, ashamed, or guilty about your eating
- Frequently dieting, possibly without weight loss

Eating Disorders Treatment

To treat eating disorders, getting adequate nutrition, and stopping inappropriate behaviors, such as purging, are the foundations of treatment. Treatment plans are tailored to individual needs and include medical care, nutritional counseling, medications (such as antidepressants), and individual, group, and/or family psychotherapy (NIMH, 2019). For example, the Maudsley Approach has parents of adolescents with anorexia nervosa be actively involved in their child's treatment, such as assuming responsibility for feeding their child. To eliminate binge eating and purging behaviors, cognitive behavioral therapy (CBT) assists sufferers by identifying distorted thinking patterns and changing inaccurate beliefs.

Links to Learning

Visit the [National Eating Disorders Association](#) to learn more about eating disorders.

23.

Adolescent Sleep

Brain development even affects the way teens sleep. Adolescents' normal sleep patterns are different from those of children and adults. Teens are often drowsy upon waking, tired during the day, and wakeful at night. Although it may seem like teens are lazy, science shows that **melatonin** levels (or the "sleep hormone" levels) in the blood naturally rise later at night and fall later in the morning in teens than in most children and adults. This may explain why many teens stay up late and struggle with getting up in the morning.

According to the National Sleep Foundation (NSF) (2016), adolescents need about 8 to 10 hours of sleep each night to function best. The most recent Sleep in America poll in 2006 indicated that adolescents between sixth and twelfth grade were not getting the recommended amount of sleep. On average, adolescents only received 7 ½ hours of sleep per night on school nights with younger adolescents getting more than older ones (8.4 hours for sixth graders and only 6.9 hours for those in twelfth grade). For older adolescents, only about one in ten (9%) get an optimal amount of sleep, and they are more likely to experience negative consequences the following day. These include feeling too tired or sleepy, being cranky or irritable, falling asleep in school, having a depressed mood, and drinking caffeinated beverages (NSF, 2016). Additionally, they are at risk for substance abuse, car crashes, poor academic performance, obesity, and a weakened immune system (Weintraub, 2016).

Why don't adolescents get adequate sleep? In addition to known environmental and social factors, including work, homework, media, technology, and socializing, the adolescent brain is also a factor. As adolescents go through puberty, their circadian rhythms change and push back their sleep time until later in the evening (Weintraub, 2016). This biological change not only keeps adolescents awake at night, but it also makes it difficult for them to get up in the morning. When they are awake too early, their brains do not function optimally. Impairments are noted in attention, behavior, and academic achievement, while increases in tardiness and absenteeism are also demonstrated.

To support adolescents' later sleeping schedule, the Centers for Disease Control and Prevention recommended that school not begin any earlier than 8:30 a.m. Unfortunately, over 80% of American schools begin their day earlier than 8:30 a.m. with an average start time of 8:03 a.m. (Weintraub, 2016). Psychologists and other professionals have been advocating for later school times, and they have produced research demonstrating better student outcomes for later start times. More middle and high schools have changed their start times to reflect the sleep research better. However, the logistics of changing start times and bus schedules are proving too difficult for some schools leaving many adolescents vulnerable to the negative consequences of sleep deprivation.

Links to Learning

As research reveals the importance of sleep for teenagers, many people advocate for later high school start times. Read about some of the [research at the National Sleep Foundation on school start times](#).



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Video 3.6.1. *Why Schools Should Start Later for Teens* discusses how early school start times impact teens and how later start times can benefit students.

24.

Behavioral and Psychological Adjustment

With all of these brain changes and novel experiences, we expect to see adolescents undergo significant behavioral and psychological adjustments. Adolescents are facing strong emotions, changing peer relationships, more independence, expectations to be more adult-like, and a desire to take risks, all while lacking a fully mature brain or the life experience to navigate these situations. It is inevitable that some mistakes will occur along the way, as well as a great deal of learning. We will examine some typical adjustment issues encountered by adolescents: driving, aggression, drug use, anxiety, depression, and self-violence.

Teenage Drivers

In a 2017 National Children's Health poll, parents report that one of the top concerns is teen driving (C.S. Mott Children's Hospital, 2017). Driving gives teens a sense of freedom and independence from their parents and can free up time for parents as they are not shuttling teens to and from school, activities, or work. However, with higher levels of risk-taking behavior and lower levels of experience, parents are concerned with their teen's safety on the road.

The National Highway Traffic Safety Administration (NHTSA) reports that in 2014 young drivers (15 to 20 year-olds) accounted for 5.5% (11.7 million) of the total number of drivers (214 million) in the US (National Center for Statistics and Analysis (NCSA), 2016). However, almost 9% of all drivers involved in fatal crashes that year were young drivers (NCSA, 2016), and according to the National Center for Health Statistics (2014), motor vehicle accidents are the leading cause of death for 15 to 20 year-olds. "In all motorized jurisdictions around the world, young, inexperienced drivers have much higher crash rates than older, more experienced drivers" (NCSA, 2016, p. 1). The rate of fatal crashes is higher for young males than for young females, although, for both genders, the rate was highest for the 15-20 years-old age group. For young males, the rate for fatal crashes was approximately 46 per 100,000 drivers, compared to 20 per 100,000 drivers for young females. The NHTSA (NCSA, 2016) reported that of the young drivers who were killed and who had alcohol in their system, 81% had a blood alcohol count past what was considered the legal limit. Fatal crashes involving alcohol use were higher among young men than young women. The NHTSA also found that teens were less likely to use seat belt restraints if they were driving under the influence of alcohol, and that restraint use decreased as the level of alcohol intoxication increased.

In an AAA study of non-fatal, but moderate to severe motor vehicle accidents in 2014, more than half involved young male drivers 16 to 19 years of age (Carney, McGehee, Harland, Weiss, & Raby, 2015). In 36% of rear-end collisions, teen drivers were following cars too closely to be able to stop in time, and in single-vehicle

accidents, driving too fast for weather and road conditions was a factor in 79% of crashes involving teens. Distraction was also a factor in nearly 60% of the accidents involving teen drivers. Fellow passengers, often also teenagers (84% of the time), and cell phones were the top two sources of distraction, respectively. This data suggested that having another teenager in the car increased the risk of an accident by 44% (Carney et al., 2015). According to the NHTSA, 10% of drivers aged 15 to 19 years involved in fatal crashes were reported to be distracted at the time of the crash, the highest figure for any age group (NCSA, 2016). Distraction, coupled with inexperience, has been found to greatly increase the risk of an accident (Klauer et al., 2014).

The NHTSA did find that the number of accidents has been on a decline since 2005. They attribute this to greater driver training, more social awareness to the challenges of driving for teenagers, and to changes in laws restricting the drinking age. The NHTSA estimates that the raising of the legal drinking age to 21 in all 50 states and the District of Columbia has saved 30,323 lives since 1975.

Aggression and Antisocial Behavior



Several major theories of the development of antisocial behavior treat adolescence as an important period. Patterson's (1982) '*early versus late starter model*' of the development of aggressive and antisocial behavior distinguishes youths whose antisocial behavior begins during childhood (early starters) versus adolescence (late starters). According to the theory, early starters are at greater risk for long-term antisocial behavior that extends into adulthood than are late starters. Late starters who become antisocial during adolescence are theorized to experience poor parental monitoring and supervision, aspects of parenting that become more salient during adolescence. Poor monitoring and lack of supervision contribute to

increasing involvement with deviant peers, which, in turn, promotes adolescents' own antisocial behavior. Late starters desist from antisocial behavior when changes in the environment make other options more appealing.

Similarly, Moffitt's (1993) '*life-course-persistent versus adolescent-limited model*' distinguishes between antisocial behavior that begins in childhood versus adolescence. Moffitt regards adolescent-limited antisocial behavior as resulting from a "maturity gap" between adolescents' dependence on and control by adults and their desire to demonstrate their freedom from adult constraint. However, as they continue to develop, and legitimate adult roles and privileges become available to them, there are fewer incentives to engage in antisocial behavior, leading to discontinuation of these antisocial behaviors.

Psychology and Mass Shootings

Virginia Tech, Columbine, Stoneman Douglas High School, Santa Fe High School, Sandy Hook, Aurora, Las Vegas, Orlando—all sites of horrific and tragic mass shootings. Why are they so common? And what led the perpetrators to commit these acts of violence? Several possible factors may work together to create a fertile environment for mass murder in the United States. Most commonly suggested include:

- Higher accessibility and ownership of guns. The U.S. has the highest per-capita gun ownership in the world with 120.5 firearms per 100 people; the second highest is Yemen with 52.8 firearms per 100 people
- Mental illness and its treatment (or the lack thereof) with psychiatric drugs. This is controversial. Many of the mass shooters in the U.S. suffered from mental illness, but the estimated number of mental illness cases has not increased as significantly as the number of mass shootings. Under 5% of violent behaviors in the U.S. are committed by persons with mental health diagnoses. A 2002 report by the U.S. Secret Service and U.S. Department of Education found evidence that a majority of school shooters displayed evidence of mental health symptoms, often undiagnosed or untreated. Criminologists Fox and DeLateur note that mental illness is only part of the issue, however, and mass shooters tend to externalize their problems, blaming others, and are unlikely to seek psychiatric help, even if available. Other scholars have concluded that mass murderers display a common constellation of chronic mental health symptoms, chronic anger or antisocial traits, and a tendency to blame others for problems. However, they note that attempting to “profile” school shooters with such a constellation of traits will likely result in many false positives as many individuals with such a profile do not engage in violent behaviors.
- The desire to seek revenge for a long history of being bullied at school. In recent years, citizens calling themselves “targeted individuals” have cited adult bullying campaigns as a reason for their deadly violence.
- The widespread chronic gap between people’s expectations for themselves and their actual achievement, and individualistic culture.
- The desire for fame and notoriety. Also, mass shooters learn from one another through “media contagion,” that is, “the mass media coverage of them and the proliferation of social media sites that tend to glorify the shooters and downplay the victims.”
- The copycat phenomenon.
- Failure of government background checks due to incomplete databases and/or staff shortages.

For additional information: [Mass Violence in America](#), by The National Council for Behavioral Health

Behavior and Conduct Problems

Children and adolescents sometimes argue, are aggressive, or act angry or defiant around adults. A behavior disorder may be diagnosed when these disruptive behaviors are uncommon for the child's age at the time, persist over time, or are severe. Because disruptive behavior disorders involve acting out and showing unwanted behavior towards others they are often called **externalizing disorders**.

Oppositional Defiant Disorder



When children act out persistently so that it causes serious problems at home, in school, or with peers, they may be diagnosed with Oppositional Defiant Disorder (ODD). ODD usually starts before 8 years of age, but no later than by about 12 years of age. Children with ODD are more likely to act oppositional or defiant around people they know well, such as family members, a regular care provider, or a teacher. Children with ODD show these behaviors more often than other children their age.

Examples of ODD behaviors include

- Often being angry or losing one's temper
- Often arguing with adults or refusing to comply with adults' rules or requests
- Often resentful or spiteful
- Deliberately annoying others or becoming annoyed with others
- Often blaming other people for one's own mistakes or misbehavior

Conduct Disorder

Conduct Disorder (CD) is diagnosed when children show an ongoing pattern of aggression toward others, and serious violations of rules and social norms at home, in school, and with peers. These rule violations may involve breaking the law and result in arrest. Children with CD are more likely to get injured and may have difficulties getting along with peers.

Examples of CD behaviors include

- Breaking serious rules, such as running away, staying out at night when told not to, or skipping school
- Being aggressive in a way that causes harm, such as bullying, fighting, or being cruel to animals
- Lying, stealing, or damaging other people's property on purpose

Diagnosing Behavior Disorders

Learn about the guidelines for diagnosing and treating [ODD](#) and [CD](#)

Treatment for Disruptive Behavior Disorders

Starting treatment early is important. Treatment is most effective if it fits the needs of the specific child and family. The first step to treatment is to talk with a healthcare provider. A comprehensive evaluation by a mental health professional may be needed to get the right diagnosis. Some of the signs of behavior problems, such as not following rules in school, could be related to learning problems that may need additional intervention. For younger children, the treatment with the strongest evidence is [behavior therapy training for parents](#), where a therapist helps the parent learn effective ways to strengthen the parent-child relationship and respond to the child's behavior. For school-age children and teens, an often-used effective treatment is a combination of training and therapy that includes the child, the family, and the school.

Managing Symptoms: Staying Healthy

Being healthy is important for all children and can be especially important for children with behavior or conduct problems. In addition to behavioral therapy and medication, practicing certain healthy lifestyle behaviors may reduce challenging and disruptive behaviors your child might experience. Here are some healthy behaviors that may help:

- Engaging in regular physical activity, including aerobic and vigorous exercise
- Eating a healthful diet centered on fruits, vegetables, whole grains, legumes (for example, beans, peas, and lentils), lean protein sources, and nuts and seeds
- Getting the recommended amount of sleep each night based on age
- Strengthening relationships with family members

Prevention of Disruptive Behavior Disorders

It is not known exactly why some children develop disruptive behavior disorders. Many factors may play a role, including biological and social factors. It is known that children are at greater risk when they are exposed to other types of violence and criminal behavior, when they experience maltreatment or harsh or inconsistent parenting, or when their parents have mental health conditions like [substance use disorders](#), [depression](#), or [attention-deficit/hyperactivity disorder \(ADHD\)](#). The quality of early childhood care also can impact whether a child develops behavior problems.

Although these factors appear to increase the risk for disruptive behavior disorders, there are ways to decrease the chance that children experience them. Learn about public health approaches to prevent these risks:

- [Positive parenting strategies for young children](#)
- [Child maltreatment prevention](#)
- [Youth violence prevention](#)
- [Bullying prevention](#)
- [Mental health in adults](#)
- [Finding high-quality child care](#)

Substance Use

Adolescence is a time of rapid change and maturation. It is also a time of experimentation—with new hairstyles, clothes, attitudes, and behaviors. Some of these experiments are harmless. Others, such as using alcohol or other drugs, can have long-lasting harmful consequences. There are several reasons why it is important to identify and treat adolescent substance use.



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Video 3.7.1. *Adolescent Substance Use, Addiction, and Treatment* discusses the prevalence of substance use and teens' susceptibility to abuse.

Substance use is common among adolescents. Alcohol, marijuana, and tobacco are the substances most commonly used by youth (Johnston et al., 2014), and alcohol often is the first substance to be used (Johnston et al., 2010). The percentage of young people who have used alcohol increases with age. By eighth grade, 28% of students have tried alcohol, and 12% have been drunk at least once; by twelfth grade, 68% of students have tried alcohol, and more than half have been drunk at least once (Johnston et al., 2014). In 2012, 45% of students

in grades 9 through 12 reported ever having used marijuana, and 24% reported having used marijuana in the preceding 30 days. Between 2008 and 2012, the proportion of teens who used marijuana daily increased from 5% to 8% (PDFA, 2013). According to a survey published in 2014, 41% of students in grades 9 through 12 reported having tried cigarettes. Nearly one-quarter said they had used tobacco in some form in the past 30 days (Kann et al., 2014). A substantial percentage of adolescents, including 15% of 12th graders, report misuse (i.e., use without a prescription) of prescription medication, especially stimulants and pain medications (Johnston et al., 2014).

Why do Adolescents use Drugs?

As we read above, most adolescents will use drugs or alcohol before reaching adulthood; however, the reasons for use can vary greatly. A popular model for understanding the reasons and levels of drug use involves viewing the behavior as a continuum. This continuum includes non-use and experimental drugs, casual, habitual, and compulsive drug use.

A non-user is someone that has never misuse drugs. An experimental user has used drugs a few times out of curiosity. Using substances may make them feel ‘grown-up,’ or they may do it as a form of rebellion against authority or rules. Using may be exciting for this teen. Typically, experimental users have no significant problems with drug use, and adults are not likely aware of the use.

When substance use becomes more common among peer groups, teens are more likely to engage in social use. Using drugs or alcohol might be a way of fitting in with some social groups or with friends. Teens may feel that they are more outgoing or social when under the influence of substances. Furthermore, some teens may use substances for fun or out of boredom. There may also be circumstantial-situational reasons for substance use, such as increasing awareness or creativity and lowering inhibitions. These casual users might engage in regular drug use, maybe 2 to 4 times per week. They still associate drug use with feeling excited or stimulated, and they make efforts to maintain control of their use. Their substance use may be frequent enough that the behavior is difficult to hide from parents and school officials. Casual users may experience decreased school performance, loss of interest in previously enjoyed activities that do not involve drug use, and other atypical behaviors for the adolescent (e.g., increased lying).

As we see substance use intensify, the concern for the teen’s health and safety increases. A habitual user is likely to use drugs daily, often with a particular group of friends that are also using. Drug use may be part of the group’s norms and identity. Teens may also use substances to escape or to self-medicate. At this level of use, the teen may not necessarily lose control but experiences significant school and family problems. Drug use may no longer bring the excitement and stimulation previously sought. Instead, the adolescent may become impulsive, erratic, guilt-ridden, and depressed.

A compulsive user has lost control over their drug use. The person is using drugs several times per day, and they spend a significant part of their day in the procurement, maintenance, and use of a regular drug supply. These adolescents engage in behaviors that put their health and safety at risk. Their emotional state is often

disorganized. Individuals in the last three categories – casual, habitual, and compulsive – are most likely to qualify for a substance use disorder diagnosis.

Risk Factors for Substance Abuse

There are certain factors that increase the risk of adolescent substance abuse. Teens that come from dysfunctional families or live in poverty are at higher risk of abuse. As are youth raised in cultures or communities where substance abuse is common. Adolescents that struggle academically or are lacking in social skills may also see higher rates of substance abuse. A highly concerning risk factor is early substance use. The earlier and the more a young person uses substances, the higher risk they are for developing a substance disorder.

Substance use has its own risks and also is associated with other risky behaviors. Adolescent substance use poses both short-term and long-term risks. In the short term, drinking, for example, can result in unintentional injuries and death, suicidal behavior, motor vehicle crashes, intimate partner violence, and academic and social problems (Brown et al., 2008; Cole et al., 2011; Weitzman Nelson, 2004). These outcomes occur because excess alcohol consumption leads to decreased cognitive abilities, inaccurate perception of risk, and impaired bodily control. These effects, in combination with the fact that compared to adults, adolescents tend to be more physically active when under the influence of alcohol, put adolescents at greater risk of harm. For example, at blood alcohol concentrations greater than zero, adolescents are at increased risk of being fatally injured or involved in fatal crashes in single, two, and more vehicles compared with sober male drivers ages 21-34 (Voas et al., 2012). Marijuana use is associated with diminished lifetime achievement (Meier et al., 2012). Tobacco use results in poor health in the short and long term, and it can be a gateway to the use of other drugs (Sims, 2009). The risk of substance use is compounded because it is associated with other risky behaviors, such as unplanned, unprotected sex, which can result in pregnancy (Brown, 2008; Levy et al., 2009; Tapert et al., 2001). Adolescents who misuse prescription opioids are at high risk of transitioning to injection drugs and overdosing (McCabe et al., 2012). Any level of substance use can be harmful to adolescents—no amount is safe.

Adolescence is a particularly vulnerable period for brain development and maturation. Adolescence is a long period of intense neurodevelopmental growth and maturation. As a result, the adolescent brain is particularly vulnerable to the toxic effects of alcohol and other drugs and to the potential for addiction. Persistent marijuana use in adolescence, for example, is associated with neuropsychological impairments across a range of functional domains (Meier et al., 2012). Moreover, stopping use does not fully restore neuropsychological functioning, suggesting particular harm to the adolescent brain.

Use tends to increase over time. National estimates of the prevalence of drinking indicate that older youth drink more and drink more heavily than do younger youth (SAMHSA, 2010). This fact makes it all the more

important for pediatricians to start early with screening and brief intervention so as to prevent or delay alcohol use for as long as possible.

Substance use in adolescence is associated with harm in adulthood. The earlier an adolescent begins using substances, the greater are his or her chances of continuing to use and of developing substance use problems later in life. For example, compared to people who do not start drinking until they are young adults, people who begin to drink before age 15 are 5 times as likely to develop alcohol dependence or abuse (Chambers et al., 2003; Grant & Dawson, 1997; Hingson & Zha, 2009). Compared with adolescents who first try marijuana at age 18, those who begin using at 14 or younger are 6 times as likely to meet the criteria for illicit drug dependence or abuse later in life (SAMHSA, 2010). More than 80% of adults who smoke tobacco began before they were 18 (Sims, 2009).

Adolescents who report weekly or more frequent substance use are likely to have a severe substance use disorder. In some cases, by the time an adolescent has reached this point, parents are already aware of the drug use, although they may underestimate the seriousness of the problem. Adolescents with serious substance-use disorders require more-intensive care as soon as possible, including a comprehensive evaluation by a substance use specialist, assessment for co-occurring mental health disorders, and referral to treatment.

Prevention of Substance Abuse

Prevention of substance abuse during adolescence should be a multipronged and long term approach that involves the education of youth, families, and the community. Prevention education should begin as early as preschool and be specific to the target population (i.e., ethnicity, gender), establishing a culture against substance abuse. Effective programs for teens involve interactive education, such as peer discussions and role-playing, and focus on risk-reduction and fostering good decision-making skills.

D.A.R.E.—the drug prevention program that never worked

The primary goal of Drug Abuse Resistance Education (DARE) was to teach effective peer resistance and refusal skills so that adolescents can say “no” to drugs and their friends who may want them to use drugs. The secondary goals of the program were to build students’ social skills and enhance their self-esteem, as these are believed to be linked to adolescent drug use.

DARE was developed in 1983 as a joint effort between the Los Angeles County (Calif.) School District and the Los Angeles Police Department. In 1986, the U.S. Congress passed the Drug-Free Schools and Communities Act to promote drug abuse education and prevention programs across the country, and DARE spread rapidly, with many school districts adopting it for their students. By

1994, DARE was the most widely used school-based drug prevention program, showing up in all 50 states in the United States and spreading to six foreign countries.

Several large scale studies assessed the effectiveness of the DARE program. The findings consistently found no effects. There were no statistically significant differences between students participating in the DARE program and those that did not when comparing rates of drug use, attitudes toward drug use, or self-esteem.

Anxiety, Depression, And Self-Directed Violent Behavior

Developmental models of anxiety and depression treat adolescence as an important period, especially in terms of the emergence of differences and prevalence rates that persist through adulthood (Rudolph, 2009). Although the rates vary across specific anxiety and depression diagnoses, rates for some disorders are markedly higher in adolescence than in childhood or adulthood. For example, prevalence rates for anxiety disorders are about 19% in adults, but 32% in adolescents (NIMH, 2017). Adolescents are also more likely to experience depression (13%) compared to adults (7%) (NIMH, 2019). Rates of self-directed violence are also higher among teens (17%), followed by college students (15%), adults (5%), and children having the lowest rates (1.3%) (APA, 2015).

Anxiety

Occasional anxiety is an expected part of life. You might feel anxious when faced with a problem, before taking a test, or when making an important decision. But anxiety disorders involve more than temporary worry or fear. For a person with an anxiety disorder, the anxiety does not go away and can get worse over time. The symptoms can interfere with daily activities such as job performance, school work, and relationships.

The wide variety of **anxiety disorders** differ by the objects or situations that induce them but share features of excessive anxiety or worry about a variety of things. Fear and anxiety can cause significant problems in areas of their life, such as social interactions, school, and work. Anxiety also manifests in physiological and psychological responses, such as feeling restless, fatigued, difficulty concentrating, irritability, muscle tension, and sleep problems.



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://wisconsin.pressbooks.pub/adolescentpsychology/?p=97#oembed-2>

Video 3.7.2. *Fight, Flight, Freeze—Anxiety Explained for Teens* identifies symptoms and responses to the experience of anxiety.

The following data pertains to the compiling of statistics for any anxiety disorder including, panic disorder, generalized anxiety disorder, agoraphobia, specific phobia, social anxiety disorder, post-traumatic stress disorder, obsessive-compulsive disorder, and separation anxiety disorder. An estimated 31.9% of adolescents have an anxiety disorder. Of adolescents with any anxiety disorder, an estimated 8.3% had severe impairment. The prevalence of any anxiety disorder among adolescents was higher for females (38.0%) than for males (26.1%). The prevalence of any anxiety disorder was similar across age groups.

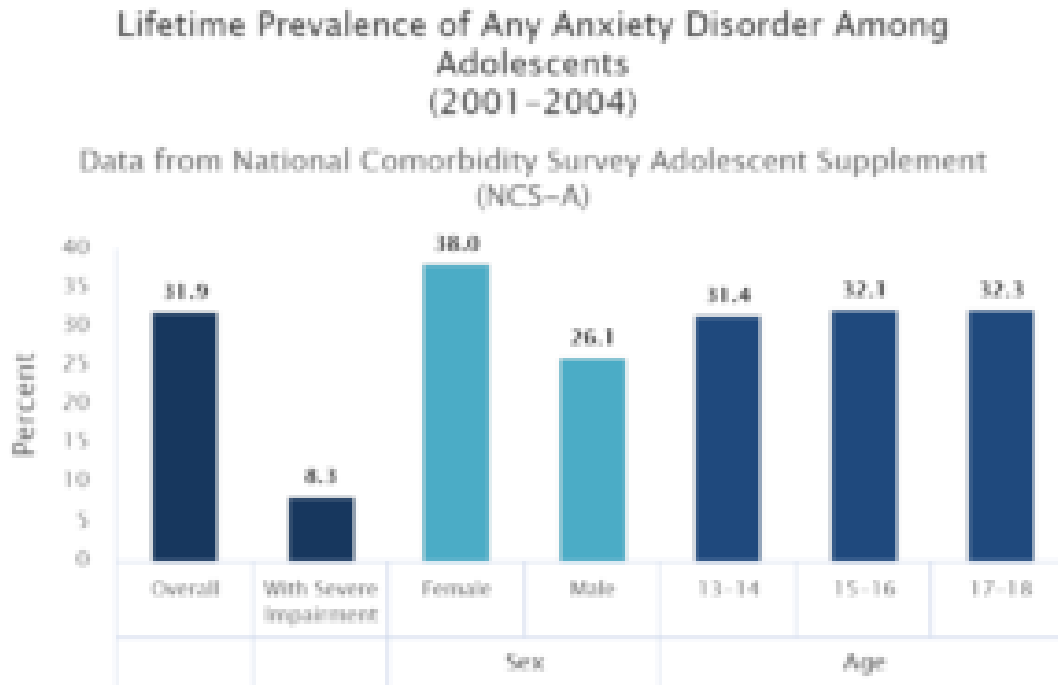


Figure 3.7.1. Prevalence of any anxiety disorder among adolescents (2001–2004). Data from the National Comorbidity Survey Adolescent Supplement (NCS-A).

Anxiety disorders are generally treated with psychotherapy, medication, or both. Psychotherapy or “talk therapy” can help people with anxiety disorders. To be effective, psychotherapy must be directed at the person’s specific anxieties and tailored to his or her needs. Medication does not cure anxiety disorders but can help relieve symptoms. Medication for anxiety is prescribed by doctors, such as a psychiatrist or primary care provider. The most common classes of medications used to combat anxiety disorders are anti-anxiety drugs (such as benzodiazepines), antidepressants, and beta-blockers. Some people with anxiety disorders might benefit from joining a self-help or support group and sharing their problems and achievements with others. Talking with a trusted friend or member of the clergy can also provide support, but it is not necessarily a sufficient alternative to care from a doctor or other health professional. Stress management techniques and meditation can help people with anxiety disorders calm themselves and may enhance the effects of therapy.

Research suggests that aerobic exercise can help some people manage their anxiety; however, exercise should not take the place of standard care, and more research is needed.

The Prevalence of Mental Illness in youth



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Video 3.7.3. In *The Prevalence of Mental Illness in Youth*, McKenna Knapp discusses the prevalence of mental health issues in young people and how the pressures to measure up in high school may contribute.

Depression

Sadness is something we all experience. It is a normal reaction to a loss or a setback, but it usually passes with a little time. Depression is different. Depression (**major depressive disorder**) is a medical illness that can interfere with a person's ability to handle daily activities, such as sleeping, eating, or managing responsibilities. Depression is common, but that doesn't mean it isn't serious. Well-meaning friends or family members may try to tell someone with depression to "snap out of it," "just be positive," but depression is not a sign of weakness or a character flaw. Many people with depression need treatment to get better.

Depression is characterized by feelings of deep sadness and hopelessness that disrupts all normal, regular activities. However, teens may not identify feelings of sadness and instead report feeling more irritable and angry. Often, when depressed, people feel worthless and excessively guilty. They withdraw from activities that they normally enjoy and spend more time alone. Changes in appetite and sleeping habits (more or less than normal) are common. People with depression may experience fatigue, having low energy, and also feel restless. Physical aches and pains with no associated reason may occur, like muscle, stomach, or headaches. Cognitive functioning, such as attention, concentrating, memory, and decision-making, may be impaired. And while not necessary for a depression diagnosis, thoughts of death or suicide may be an issue.

Teens with depression may sulk, get into trouble at school, be negative and irritable, and feel misunderstood. It can be difficult to determine whether an adolescent is depressed or just "being a teenager." Consider how long the symptoms have been present, how severe they are, and how different the teen is acting from his or her

usual self. Teens with depression may also have other disorders such as anxiety, eating disorders, or substance abuse.



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://wisconsin.pressbooks.pub/adolescentpsychology/?p=97#video-97-1>

Video 3.7.4. Adolescent Depression provides information on identifying symptoms of depression in teens and how to respond to concerns.

The figure below shows the prevalence of major depressive episodes among U.S. adolescents in 2017. An estimated 3.2 million adolescents aged 12 to 17 in the United States had at least one major depressive episode. This number represented 13.3% of the U.S. population aged 12 to 17. The prevalence of major depressive episodes was higher among adolescent females (20.0%) compared to males (6.8%). The prevalence of major depressive episode was highest among adolescents reporting two or more races (16.9%).

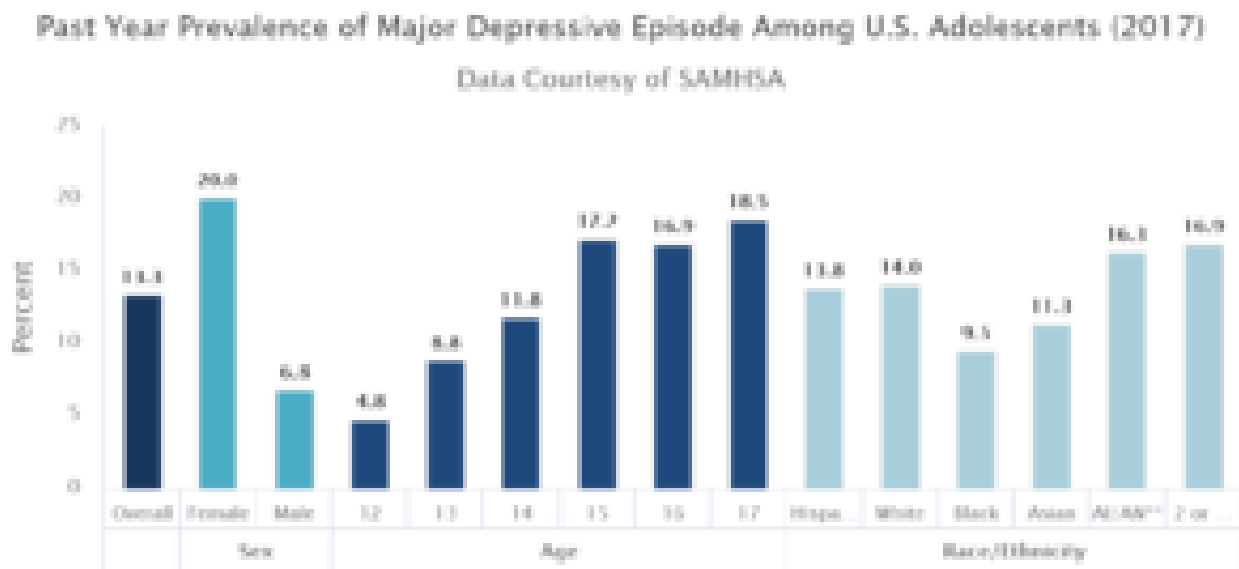


Figure 3.7.2. Prevalence of major depressive episode among US adolescents (2017). Data from SAMHSA.

Causes of depression include many factors such as genetics and early childhood experiences that predate adolescence, but puberty may push vulnerable children, especially girls, into despair. During puberty, the rate of major depression more than doubles to an estimated 13%, affecting about one in five girls and one in ten boys. The gender difference occurs for many reasons, biological and cultural (Uddin et al., 2010).

Developmental models focus on interpersonal contexts in both childhood and adolescence that foster depression and anxiety (e.g., Rudolph, 2009). Family adversity, such as abuse and parental psychopathology

during childhood, sets the stage for social and behavioral problems during adolescence. Adolescents with such problems generate stress in their relationships (e.g., by resolving conflict poorly and excessively seeking reassurance) and select into more maladaptive social contexts (e.g., “misery loves company” scenarios in which depressed youths select other depressed youths as friends and then frequently co-ruminate as they discuss their problems, exacerbating negative affect and stress). These processes are intensified for girls compared with boys because girls have more relationship-oriented goals related to intimacy and social approval, leaving them more vulnerable to disruption in these relationships. Anxiety and depression then exacerbate problems in social relationships, which in turn contribute to the stability of anxiety and depression over time.

Depression, even in the most severe cases, can be treated. The earlier that treatment can begin, the more effective it is. Depression is usually treated with medications, psychotherapy, or a combination of the two. An estimated 19.6% received care by a mental health professional alone, and another 17.9% received combined care by a mental health professional and medication treatment. Treatment with medication alone was least common (2.4%). Approximately 60.1% of adolescents with major depressive episode did not receive treatment.

Antidepressants are medicines that treat depression. They may help improve the way the brain uses certain chemicals that control mood or stress. Trying several different antidepressant medicines may be necessary before finding the one that improves symptoms and has manageable side effects. Antidepressants take time – usually 2 to 4 weeks – to work, and often, symptoms such as sleep, appetite, and concentration problems improve before mood lifts, so it is important to give medication a chance before reaching a conclusion about its effectiveness.

Several types of psychotherapy (also called “talk therapy” or, in a less specific form, counseling) can help people with depression. Examples of evidence-based approaches specific to the treatment of depression include cognitive-behavioral therapy (CBT), interpersonal therapy (IPT), and problem-solving therapy. CBT can help an individual with depression change negative thinking and interpret the environment and interactions in a positive, realistic way. IPT is designed to help an individual understand and work through troubled relationships or major issues that may cause depression or make it worse.

Teenagers usually rely on parents, teachers, or other caregivers to recognize their suffering and get them the treatment they need. Many teens don’t know where to go for mental health treatment or believe that treatment won’t help. Others don’t get help because they think depression symptoms may be just part of the typical stress of school or being a teen. Some teens worry about what other people will think if they seek mental health care.

Self-Directed Violence

Self-directed violence (SDV) encompasses a range of violent behaviors, including acts of fatal and nonfatal suicidal behavior, and non-suicidal self-injury (i.e., behaviors where the intention is not to kill oneself, as in self-mutilation). Recognizing signs of self-directed violence and interventions to help people engaging in this behavior can save a life and help get them treatment.

Non-suicidal self-injury (NSSI), also referred to as self-harm, self-mutilation, or cutting, is a “deliberate,

self-inflicted injury without suicidal intent or for socially sanction purposes (such as tattoos or piercings). NSSI is most often associated with ‘cutting,’ but means of self-harm often also include scratching, punching, punching oneself, banging objects with the intention of injury, biting, tearing of the skin, or burning. The location of the injury may also be an indicator of the severity of the psychological disturbance. Injuries to the face, eye, jugular, or genitals may be more concerning. Although not a suicide attempt, NSSI is associated with suicide and can result in an accidental fatality (Whitlock, 2010).

The average age of the first NSSI is between 11 and 15 years old. The prevalence of at least one incident NSSI is estimated to be 12-37% in high school populations and 12 to 20% in late adulthood and early adulthood cohorts, with 6-7% of adolescents reported repetitive NSSI in the last year. Of those reporting repetitive incidents, 40% reported stopping the behavior within a year of starting, and the vast majority (79.8%) stopped within five years (Whitlock, 2010).

While we might presume that NSSI behavior is associated with mental illness, like depression and anxiety, that is not always the case. Forty-four percent of people that engage in common NSSI do not have any co-morbidity. This type of NSSI includes self-injurious behaviors that are (1) compulsive or ritualistic (like trichotillomania), (2) episodic or occasional, with no identification as a person that self-harms, (3) repetitive with a self-harming identity. Common NSSI can be mild, moderate, or severe, depending on the severity of the injuries (Whitlock, 2010).

The reasons for NSSI are psychological, social, and biological and often stem from a history of childhood adversity, comorbid psychological disorders, and emotional dysregulation. The psychological reasons are the most common and involve reducing psychological pain, expressing distress, and distracting oneself from other negative stimuli. Fewer teens report social reasons for NSSI, such as seeking attention or copying peers. Social factors, like peer reinforcement of the behavior, can increase the likelihood of repetitive NSSI. Those reporting “getting a rush” or “feeling normal” from NSSI may have biological reasons for the behavior. These individuals may have chronically low levels of certain neurotransmitters in their brains. The neurochemical response to injury may bring these neurotransmitter levels to a more normal level and help them regulate emotions. This may be the reason that some people are dependent on NSSI (Whitlock, 2010).

The correlation between NSSI and suicide-related behaviors is well known, but the nature of that relationship is rather paradoxical. Moving from NSSI to suicide-related behaviors may appear to be a predictable progression in severity—without intervention, those engaged in NSSI may get worse and eventually become suicidal. However, experts agree that NSSI may actually help alleviate the distress that could lead to suicide-related behavior, at least temporarily. NSSI could be a tool for coping with distress and avoid suicide (Whitlock, 2010).

In 2017, suicide was the second leading cause of death for people aged 10-19. After a stable period from 2000 to 2007, suicide death rates for teens are now increasing. Distressing thoughts about killing oneself become most common at about age 15 (Berger, 2019) and can lead to a variety of suicide-related behaviors.

Suicide-related behaviors include the following:

- **Suicide:** Death caused by self-directed injurious behavior with any intent to die.
- **Suicide attempt:** A non-fatal self-directed potentially injurious behavior with any intent to die as a result of the behavior. A suicide attempt may or may not result in injury.
- **Suicidal ideation:** Thinking about, considering, or planning for suicide.

Suicide-related behavior is complicated and rarely the result of a single source of trauma or stress. Youth who are at increased risk for suicide-related behavior are dealing with a complex interaction of multiple relationships (peer, family, or romantic), mental health, and school stressors. Often, people who engage in suicide-related behavior experience overwhelming feelings of helplessness and hopelessness. Involvement with bullying behavior is one stressor that may significantly contribute to feelings of helplessness and hopelessness that raise the risk of suicide.

Youth are at higher risk for suicide-related behaviors if they experienced violence, including child abuse, bullying, or sexual violence, and cannot cope with problems in healthy ways and solve problems peacefully. Teens with disabilities, learning differences, sexual/gender identity differences, or cultural differences are often most vulnerable to being bullied. Teens who report frequently bullying others are at high, long-term risk for suicide-related behavior. Youth who report both being bullied and bullying others (sometimes referred to as bully-victims) have the highest rates of negative mental health outcomes, including depression, anxiety, and thinking about suicide.

The behaviors listed below may be signs that someone is thinking about suicide.

- Talking about wanting to kill themselves or making a plan to kill themselves
- Talking about feeling empty, hopeless, or having no reason to live
- Talking about great guilt or shame
- Talking about feeling trapped or feeling that there are no solutions
- Feeling unbearable pain (emotional pain or physical pain)
- Talking about being a burden to others
- Using alcohol or drugs more often
- Acting anxious or agitated
- Withdrawing from family and friends
- Changing eating and/or sleeping habits
- Showing rage or talking about seeking revenge
- Taking great risks that could lead to death, such as driving extremely fast
- Talking or thinking about death often
- Displaying extreme mood swings, suddenly changing from very sad to very calm/happy
- Giving away important possessions
- Saying goodbye to friends and family
- Putting affairs in order, making a will

If these warning signs apply to you or someone you know, get help as soon as possible, particularly if the behavior is new or has increased recently. Call the [National Suicide Prevention Lifeline \(Lifeline\)](#) at 1-800-273-TALK (8255), or text the Crisis Text Line (text HELLO to 741741). Both services are free and available 24 hours a day, seven days a week. The following recommendations are five action steps to help someone in emotional pain:

- **ASK:** “Are you thinking about killing yourself?” It’s not an easy question, but studies show that [asking at-risk individuals if they are suicidal](#) does not increase suicides or suicidal thoughts.
- **KEEP THEM SAFE:** Reducing a suicidal person’s access to highly lethal items or places is an important part of suicide prevention. While this is not always easy, asking if the at-risk person has a plan and removing or disabling the lethal means can make a difference.
- **BE THERE:** Listen carefully and learn what the individual is thinking and feeling. Research suggests [acknowledging and talking about](#) suicide may [reduce rather than increase](#) suicidal thoughts.
- **HELP THEM CONNECT:** Save the National Suicide Prevention Lifeline’s (1-800-273-TALK (8255)) and the Crisis Text Line’s number (741741) in your phone, so it’s there when you need it. You can also help make a connection with a trusted individual like a family member, friend, spiritual advisor, or mental health professional.
- **STAY CONNECTED:** [Staying in touch after a crisis](#) or after being discharged from care can make a difference. Studies have shown the number of suicide deaths goes down when someone follows up with the at-risk person.



Figure 5.7.3. Five action steps for helping someone in emotional pain.

<https://assessments.lumenlearning.com/assessments/16622>

25.

Glossary

adolescent growth spurt: rapid increase in the individual's height and weight during puberty resulting from simultaneous release of growth hormones, thyroid hormones, and androgens. Males experience their growth spurt about two years later, on average, than females

adrenarche: an increase in the production of androgens by the adrenal cortex that usually occurs during the eighth or ninth year of life and typically peaks at around 10 to 14 years of age and is eventually involved in the development of pubic hair, body odor, skin oiliness, and acne

anorexia nervosa: an eating disorder characterized by self-starvation. Affected individuals voluntarily undereat and often overexercise, depriving their vital organs of nutrition. Anorexia can be fatal

binge-eating disorder: an eating disorder characterized by recurrent episodes of eating large quantities of food (often very quickly and to the point of discomfort); a feeling of a loss of control during the binge; experiencing shame, distress or guilt afterward; and not regularly using unhealthy compensatory measures (e.g., purging) to counter the binge eating. It is the most common eating disorder in the United States

body dissatisfaction: negative subjective evaluation of the weight and shape of one's own body, which may predict the onset, severity, and treatment outcomes of eating disorders

body image: a person's idea of how his or her body looks

bulimia nervosa: an eating disorder characterized by binge eating and subsequent purging, usually by induced vomiting and/or use of laxatives

estrogen: primary female sex hormone that is responsible for the development and regulation of the female reproductive system and secondary sex characteristics

gonad: a sex organ that produces gametes; specifically, a testicle or ovary

gonadarche: refers to the earliest gonadal changes of puberty. In response to pituitary gonadotropins, the ovaries in girls and the testes in boys begin to grow and increase the production of the sex steroids, especially estradiol and testosterone

masturbation: sexual self-stimulation, usually achieved by touching, stroking, or massaging the male or female genitals until this triggers an orgasm

menarche: a girl's first menstrual period, signaling that she has begun ovulation. Pregnancy is biologically possible, but ovulation and menstruation are often irregular for years after menarche

muscle dysmorphia: sometimes called "reverse anorexia" this is an obsession with being small and underdeveloped; extreme concern with becoming more muscular

primary sex characteristics: the parts of the body that are directly involved in reproduction, including the vagina, uterus, ovaries, testicles, and penis

puberty: the period of rapid growth and sexual development that begins in adolescence

secondary sex characteristics: physical traits that are not directly involved in reproduction but that indicate sexual maturity, such as a man's beard or a woman's breasts

sexually transmitted infections (STIs): diseases that are spread by sexual contact, including syphilis, gonorrhea, genital herpes, chlamydia, and HIV/AIDS

spermarche: a boy's first ejaculation of sperm. Erections can occur as early as infancy, but ejaculation signals sperm production. Spermarche may occur during sleep (nocturnal emission or "wet dream") or via direct stimulation

testosterone: the primary male sex hormone that plays a key role in the development of male reproductive tissues such as testes and prostate, as well as promoting secondary sexual characteristics such as increased muscle and bone mass, and the growth of body hair. Females also produce testosterone, but at a lower level than males

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PART IV

BRAIN DEVELOPMENT DURING MIDDLE CHILDHOOD AND ADOLESCENCE

Learning Objectives

- Describe neural system, brain areas and its basic functions
- Describe brain development during middle childhood and adolescence
- Explain how brain changes impact risk-taking behaviors
- Explain behavioral and psychological adjustment in adolescents and how they impact development

The human brain is not fully developed by the time a person enters school system. Between the ages of 6 and 25, the brain undergoes changes that have important implications for behavior. The brain reaches 90% of its adult size by the time a person is six or seven years of age. Thus, the brain does not grow in size much during middle childhood and adolescence. However, the creases in the brain continue to become more complex until the late teens. The biggest changes in the folds of the brain during this time occur in the parts of the cortex that process cognitive and emotional information. Changes to the brain directly influence changes to behavior and mental process. We will discuss some of these issues.

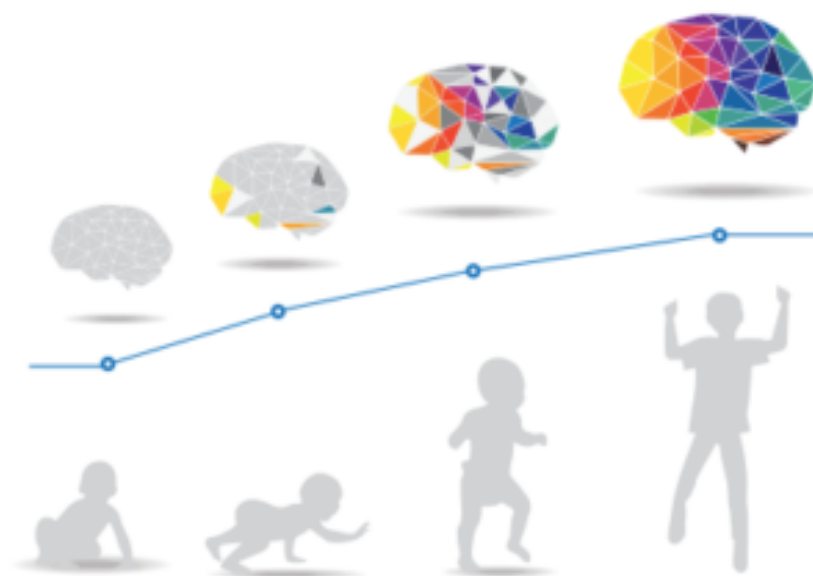


Figure 5.1.1. The brain reaches its largest size in the early teen years but continues to mature well into the 20s.

27.

Brain Basics

The nervous system is a vital part of the human body, responsible for controlling a wide range of bodily functions. It enables us to think, learn, move, and respond to our environment—and notably, the brain itself is a central component of this system. Understanding how the nervous system works, including how it communicates within itself and with other systems in the body, is essential for understanding human development. It plays a key role in our cognitive, physical, and socioemotional growth throughout the lifespan.

The nervous system is composed of two basic cell types: glial cells (also known as glia) and neurons. **Glial cells** are traditionally thought to play a supportive role to neurons, both physically and metabolically. Glial cells provide scaffolding on which the nervous system is built, help neurons line up closely with each other to allow neuronal communication, provide insulation to neurons, transport nutrients and waste products, and mediate immune responses. **Neurons**, on the other hand, serve as interconnected information processors that are essential for all of the tasks of the nervous system. This section briefly describes the structure and function of neurons.

Communication within the central nervous system (CNS), which consists of the brain and spinal cord, begins with nerve cells called **neurons**. Neurons connect to other neurons via networks of nerve fibers called **axons** and **dendrites**. Each neuron typically has a single axon and numerous dendrites that are spread out like branches of a tree (some will say it looks like a hand with fingers). The axon of each neuron reaches toward the dendrites of other neurons at intersections called **synapses**, which are critical communication links within the brain. Axons and dendrites do not touch, instead, electrical impulses in the axons cause the release of chemicals called **neurotransmitters** which carry information from the axon of the sending neuron to the dendrites of the receiving neuron.

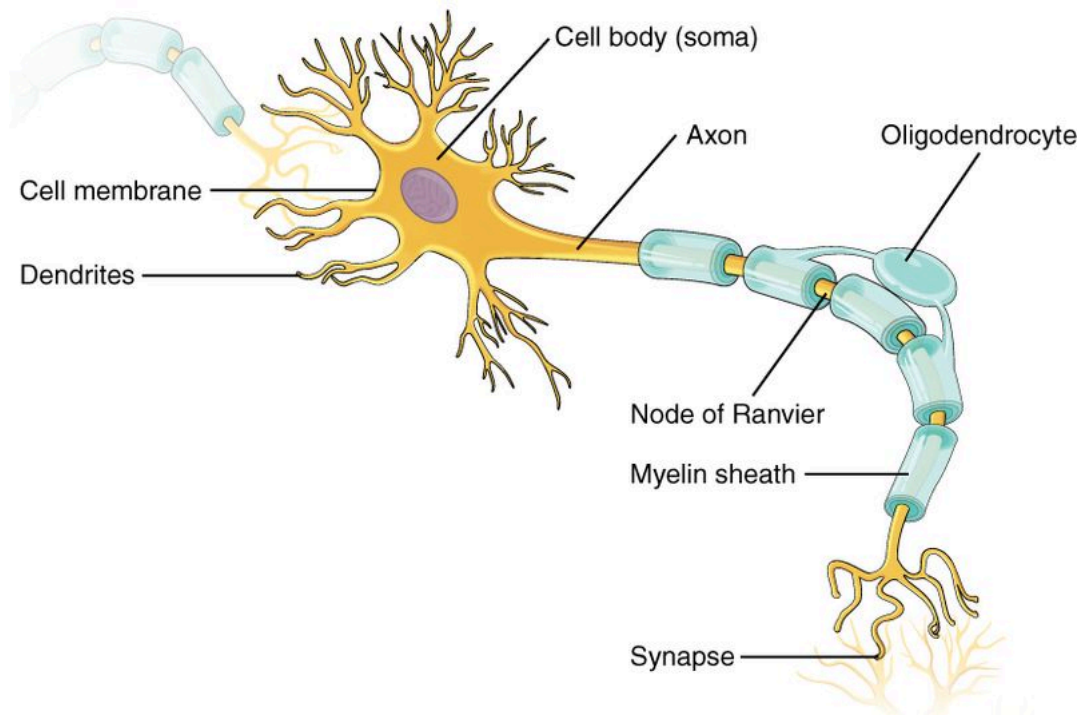


Figure 4.1.1. Neuron.



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Video 4.1.1. *The Neuron* explains the part of the neuron and the signal transmission of the neurocommunication process.

<https://assessments.lumenlearning.com/assessments/4140>

Synaptogenesis and Synaptic Pruning

While most of the brain's 100 to 200 billion neurons are present at birth, they are not fully mature. Each neural pathway forms thousands of new connections during infancy and toddlerhood. **Synaptogenesis**, or the formation of connections between neurons, continues from the prenatal period forming thousands of new connections during infancy and toddlerhood. During the next several years, dendrites, or connections between neurons, will undergo a period of **transient exuberance** or temporary dramatic growth (*exuberant* because it is so rapid and *transient* because some of it is temporary). There is such a proliferation of these dendrites during these early years that by age 2 a single neuron might have thousands of dendrites.

After this dramatic increase, the neural pathways that are not used will be eliminated through a process called **synaptic pruning**, *where neural connections are reduced, thereby making those that are used much stronger*. It is thought that pruning causes the brain to function more efficiently, allowing for mastery of more complex skills (Hutchinson, 2011). Experience will shape which of these connections are maintained and which of these are lost. Ultimately, about 40 percent of these connections will be lost (Webb, Monk, and Nelson, 2001). Transient exuberance occurs during the first few years of life, and pruning continues through childhood and into adolescence in various areas of the brain. This activity is occurring primarily in the **cortex** or the thin outer covering of the brain involved in voluntary activity and thinking.



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Video 4.1.2. *Synaptic Pruning* explains the reasons for pruning.

Myelination

Another significant change occurring in the central nervous system is the development of **myelin**, a coating of fatty tissues around the axon of the neuron (Carlson, 2014). myelin helps insulate the nerve cell and speed the rate of transmission of impulses from one cell to another. This increase enhances the building of neural pathways and improves coordination and control of movement and thought processes. During infancy, myelination progresses rapidly, with increasing numbers of axons acquiring myelin sheaths. This corresponds with the development of cognitive and motor skills, including language comprehension, speech acquisition, sensory processing, crawling, and walking. Myelination in the motor areas of the brain during early to middle childhood leads to vast improvements in fine and gross motor skills. Myelination continues through adolescence and early adulthood and although largely complete at this time, myelin sheaths can be added in grey matter regions such as the cerebral cortex, throughout life.



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Video 4.1.3. *Myelin* explains the formation and purpose of myelin.

Neuroplasticity

Lastly, **neuroplasticity** refers to the brain's ability to change, both physically and chemically, to enhance its adaptability to environmental change and compensate for injury. Neuroplasticity enables us to learn and remember new things and adjust to new experiences. Both environmental experiences, such as stimulation, and events within a person's body, such as hormones and genes, affect the brain's plasticity. So too does age. Our brains are the most "plastic" when we are young children, as it is during this time that we learn the most about our environment. Adult brains demonstrate neuroplasticity, but they are influenced more slowly and less extensively than those of children (Kolb & Gibb, 2011).



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Video 4.1.4. *Long-term Potentiation and Synaptic Plasticity* explains how learning occurs through synaptic connections and plasticity.

The control of some specific bodily functions, such as movement, vision, and hearing, is performed in specified areas of the cortex. If these areas are damaged, the individual will likely lose the ability to perform the corresponding function. For instance, if an infant suffers damage to facial recognition areas in the temporal lobe, likely, he or she will never be able to recognize faces (Farah, Rabinowitz, Quinn, & Liu, 2000). On the other hand, the brain is not divided up in an entirely rigid way. The brain's neurons have a remarkable capacity to reorganize and extend themselves to carry out particular functions in response to the needs of the organism, and to repair the damage. As a result, the brain constantly creates new neural communication routes and rewires existing ones.

The Amazing Power of Neuroplasticity



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Video 4.1.5. *The Story of Jody* is a case study about a young girl that had the right hemisphere of

her brain removed as a treatment for severe seizures. Due to neuroplasticity, Jody was able to recover from the damage caused by the removal of so much of her cerebrum.

Brain Structures

At birth, the brain is about 25 percent of its adult weight, and by age two, it is at 75 percent of its adult weight. Most of the neural activity is occurring in the **cortex** or the thin outer covering of the brain involved in voluntary activity and thinking. The cortex is divided into two hemispheres, and each hemisphere is divided into four lobes, each separated by folds known as fissures. If we look at the cortex starting at the front of the brain and moving over the top, we see first the **frontal lobe** (behind the forehead), which is responsible primarily for thinking, planning, memory, and judgment. Following the frontal lobe is the **parietal lobe**, which extends from the middle to the back of the skull and which is responsible primarily for processing information about touch. Next is the **occipital lobe**, at the very back of the skull, which processes visual information. Finally, in front of the occipital lobe, between the ears, is the **temporal lobe**, which is responsible for hearing and language.

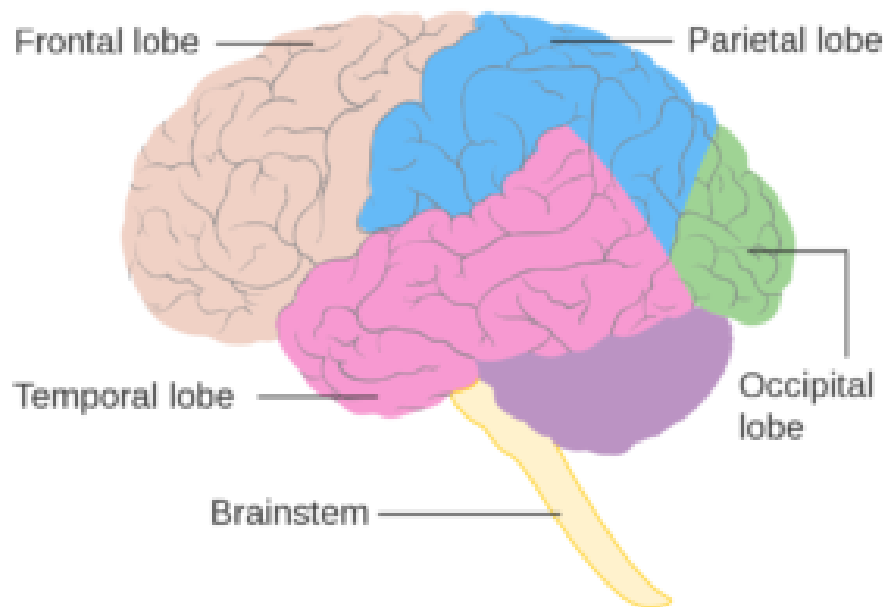


Figure 4.1.2. Lobes of the brain.

Although the brain grows rapidly during infancy, specific brain regions do not mature at the same rate. Primary motor areas develop earlier than primary sensory areas, and the prefrontal cortex, which is located

behind the forehead, is the least developed. As the prefrontal cortex matures, the child is increasingly able to regulate or control emotions, to plan activities, strategize, and have better judgment. This maturation is not fully accomplished in infancy and toddlerhood but continues throughout childhood, adolescence, and into adulthood.



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Video 4.1.6. Lobes and Landmarks of the Brain Surface identifies the lobes and some of the major cortexes of the brain.

Lateralization

Lateralization is the process in which different functions become localized primarily on one side of the brain. For example, in most adults, the left hemisphere is more active than the right during language production, while the reverse pattern is observed during tasks involving visuospatial abilities (Deutsch et al., 1988). This process develops over time, however, structural asymmetries between the hemispheres have been reported even in fetuses (Chi, Dooling, & Gilles, 1997; Kasprian et al., 2011) and infants (Dubois et al., 2009).

Growth in the Hemispheres and Corpus Callosum

Between ages 3 and 6, the left hemisphere of the brain grows dramatically. This side of the brain or hemisphere is typically involved in language skills. The right hemisphere continues to grow throughout early childhood and is involved in tasks that require spatial skills, such as recognizing shapes and patterns. The Corpus Callosum, a dense band of fibers that connects the two hemispheres of the brain, contains approximately 200 million nerve fibers that connect the hemispheres.

The corpus callosum is located a couple of inches below the longitudinal fissure, which runs the length of the brain and separates the two cerebral hemispheres. Because the two hemispheres carry out different functions, they communicate with each other and integrate their activities through the corpus callosum. Additionally, because incoming information is directed toward one hemisphere, such as visual information from the left eye being directed to the right hemisphere, the corpus callosum shares this information with the other hemisphere.

The corpus callosum undergoes a growth spurt between ages 3 and 6, and this results in improved coordination between right and left hemisphere tasks. For example, in comparison to other individuals, children younger than 6 demonstrate difficulty coordinating an Etch A Sketch toy because their corpus callosum is not developed enough to integrate the movements of both hands (Kalat, 2017).

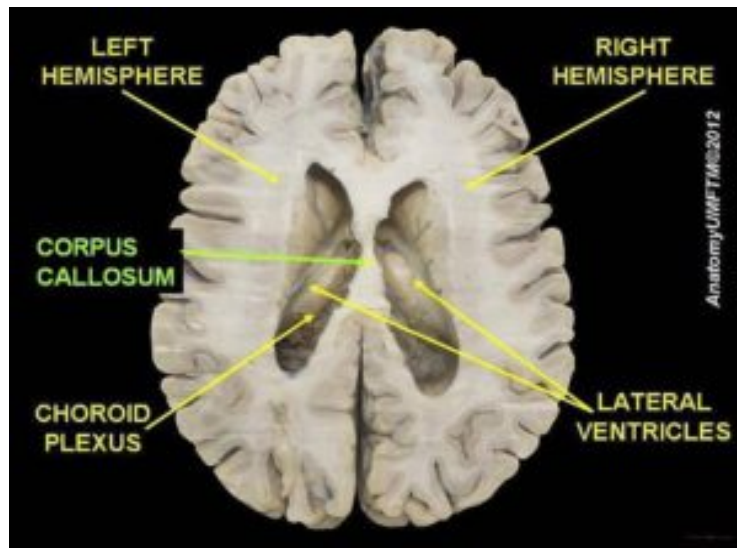


Figure 4.1.3. Corpus callosum.

28.

Brain Changes during Adolescence

During middle childhood and adolescence, brain cells continue to bloom in the frontal region. Some of the most developmentally significant changes in the brain occur in the **prefrontal cortex**, which is involved in decision making and cognitive control, as well as other higher cognitive functions. During this time, **myelination** and **synaptic pruning** in the prefrontal cortex increases, improving the efficiency of information processing, and neural connections between the prefrontal cortex and other regions of the brain are strengthened. This development enabled children to complete more and more complex cognitive tasks. We will further discuss their cognitive development in the next module. However, this growth takes time, and the growth is uneven.

The Limbic System

The **limbic system** develops years ahead of the prefrontal cortex. Development in the limbic system plays an important role in determining rewards and punishments and processing emotional experience and social information. Pubertal hormones target the **amygdala** directly, and powerful sensations become compelling (Romeo, 2013). Brain scans confirm that cognitive control, revealed by fMRI studies, is not fully developed until adulthood because the prefrontal cortex is limited in connections and engagement (Hartley & Somerville, 2015). Recall that this area is responsible for judgment, impulse control, and planning, and it is still maturing into early adulthood (Casey, Tottenham, Liston, & Durston, 2005).

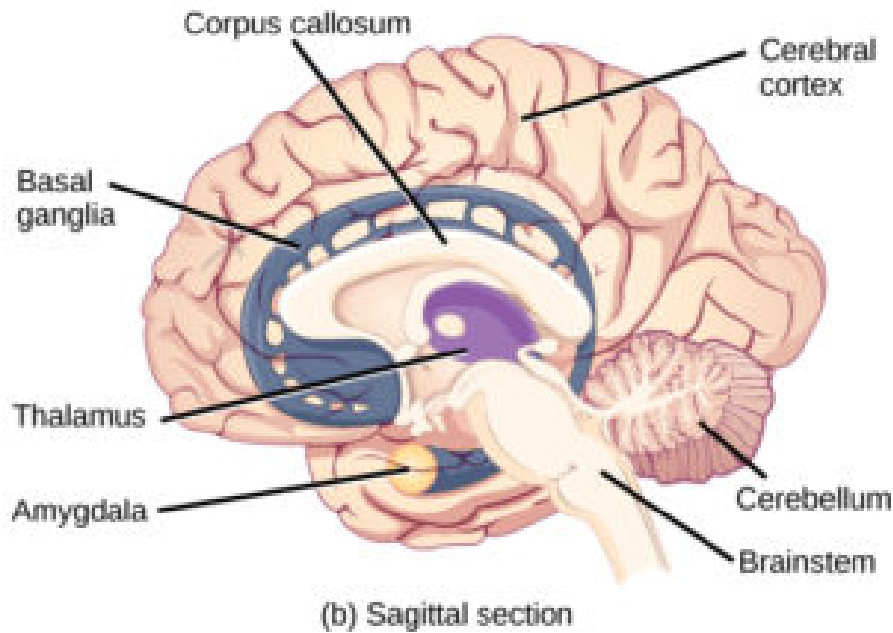


Figure 4.2.1. The limbic system.

Additionally, changes in both the levels of the neurotransmitters **dopamine** and **serotonin** in the limbic system make adolescents more emotional and more responsive to rewards and stress. Dopamine is a neurotransmitter in the brain associated with pleasure and attuning to the environment during decision-making. During adolescence, dopamine levels in the limbic system increase, and the input of dopamine to the prefrontal cortex increases. The increased dopamine activity in adolescence may have implications for adolescent risk-taking and vulnerability to boredom. Serotonin is involved in the regulation of mood and behavior. It affects the brain in a different way. Known as the “calming chemical,” serotonin eases tension and stress. Serotonin also puts a brake on the excitement and sometimes recklessness that dopamine can produce. If there is a defect in the serotonin processing in the brain, impulsive or violent behavior can result.

The Prefrontal Cortex

The prefrontal cortex, the part of the frontal lobes lying just behind the forehead, is often referred to as the “CEO of the brain,” the cognitive control center. This brain region is responsible for cognitive analysis, abstract thought, the moderation of “correct” behavior in social situations, the capacity to exercise good judgment, self-regulation, and future orientation. The prefrontal cortex takes in information from all of the senses and orchestrates thoughts and actions to achieve specific goals. Around 11 years of age, this region of the brain begins an extended process of pruning and myelination and is not complete until near the age of 25. This is one of the last regions of the brain to reach maturation. This delay may help to explain why some adolescents act the way they do. The so-called “executive functions” of the human prefrontal cortex include:

- Focusing attention
- Organizing thoughts and problem-solving
- Foreseeing and weighing possible consequences of behavior
- Considering the future and making predictions
- Forming strategies and planning
- Ability to balance short-term rewards with long term goals
- Shifting/adjusting behavior when situations change
- Impulse control and delaying gratification
- Modulation of intense emotions
- Inhibiting inappropriate behavior and initiating appropriate behavior
- Simultaneously considering multiple streams of information when faced with complex and challenging information

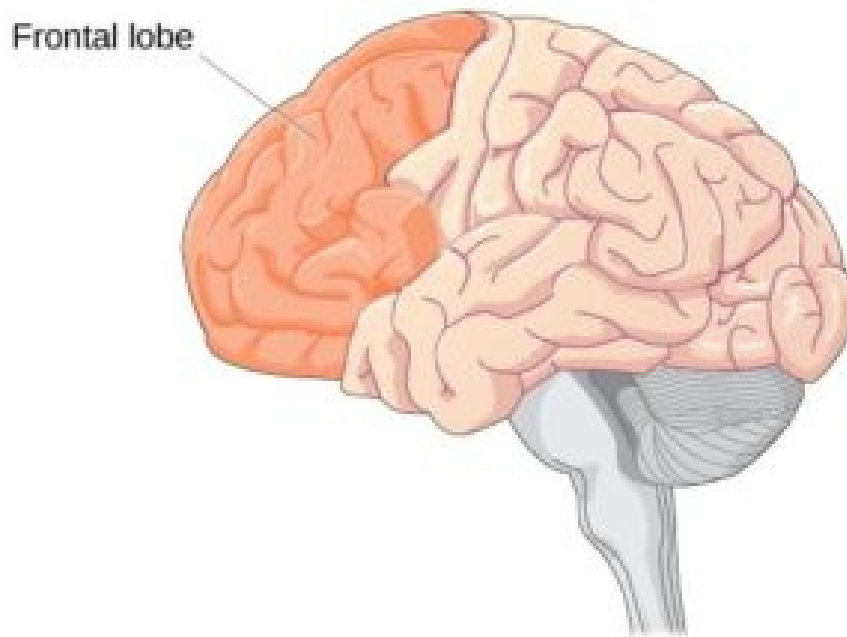


Figure 4.2.2. Brain development continues into the early 20s. The development of the frontal lobe, in particular, is important during this stage.

The difference in timing of the development of the limbic system and prefrontal cortex contributes to more risk-taking during adolescence because adolescents are motivated to seek thrills that sometimes come from risky behavior, such as reckless driving, smoking, or drinking, and have not yet developed the cognitive control to resist impulses or focus equally on the potential risks (Steinberg, 2008). One of the world's leading experts on adolescent development, Laurence Steinberg, likens this to engaging a powerful engine before the braking system is in place. The result is that adolescents are more prone to risky behaviors than are children or adults.

Brain Region Integration

MRI studies of the brain show that developmental processes tend to occur in the brain in a back-to-front pattern, explaining why the prefrontal cortex develops last. These studies have also found that children have less white matter (myelin) in the frontal lobes of their brains when compared to adults, but this amount increases as the teen ages. With more myelin comes the growth of important brain connections, allowing for a better flow of information between brain regions. MRI research has also revealed that during adolescence, white matter increases in the corpus callosum, the bundle of nerve fibers connecting the right and left hemispheres of the brain. This allows for enhanced communication between the hemispheres and enables a full array of analytic and creative strategies to be brought to bear in responding to the complex dilemmas that may arise in a young person's life (Giedd, 2004).

In sum, school age children experiences intense brain changes. Interestingly, two of the primary brain functions develop at different rates. Brain research indicates that the part of the brain that perceives rewards from risk, the limbic system, kicks into high gear in early adolescence. The part of the brain that controls impulses and engages in longer-term perspective, the frontal lobes, mature later. This may explain why teens in mid-adolescence take more risks than older teens.

As the frontal lobes become more developed, two things happen. First, self-control develops as teens are better able to assess cause and effect. Second, more areas of the brain become involved in processing emotions, and teens become better at accurately interpreting others' emotions.



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Video 4.2.1. *Brain Changes during Adolescence* describes some of the physical changes that occur during adolescence.

The Teen Brain: 6 Things to Know from the National Institute of Mental Health

Your brain does not keep getting bigger as you get older

For girls, the brain reaches its largest physical size around 11 years old and for boys, the brain reaches its largest physical size around age 14. Of course, this difference in age does not mean either boys or girls are smarter than one another!

But that doesn't mean your brain is done maturing

For both boys and girls, although your brain may be as large as it will ever be, your brain doesn't finish developing and maturing until your mid- to late-20s. The front part of the brain, called the prefrontal cortex, is one of the last brain regions to mature. It is the area responsible for planning, prioritizing, and controlling impulses.

The teen brain is ready to learn and adapt

In a digital world that is constantly changing, the adolescent brain is well prepared to adapt to new technology—and is shaped in return by experience.

Many mental disorders appear during adolescence

All the big changes the brain is experiencing may explain why adolescence is the time when many mental disorders—such as schizophrenia, anxiety, depression, bipolar disorder, and eating disorders—emerge.

The teen brain is resilient

Although adolescence is a vulnerable time for the brain and for teenagers in general, most teens go on to become healthy adults. Some changes in the brain during this important phase of development actually may help protect against long-term mental disorders.

Teens need more sleep than children and adults

Although it may seem like teens are lazy, science shows that melatonin levels (or the “sleep hormone” levels) in the blood naturally rise later at night and fall later in the morning than in most children and adults. This may explain why many teens stay up late and struggle with getting up in the morning. Teens should get about 9-10 hours of sleep a night, but most teens don't get enough sleep. A lack of sleep makes paying attention hard, increases impulsivity, and may also increase irritability and depression.

29.

Teens and Risk-Taking Behavior

Neuroscience has found that there is early maturation of the limbic system and a prolonged maturation of the prefrontal cortex region of the brain. The maturation of these areas is associated with increased self-control, while the absence of maturation is associated with impulsivity and poor decision-making (Romer, 2012). Adolescence is often associated with greater risk-taking behavior and impulsivity, as demonstrated by increased experimentation with drug use, accidents, and risky sexual behavior (Arnett, 1992).

The propensity for risk-taking behavior is likely influenced by several factors. There are changes happening in parts of the brain that may increase teens' tendencies toward risky behaviors. There is limited maturation in parts of the brain that may control risky decisions and behavior. Moreover, experiences may increase or decrease the proclivity for risky behavior.

Sensation-Seeking

All areas of the brain are not maturing at the same time and rate. Some parts of the brain develop earlier, while others are not fully mature until adulthood. An area of the brain referred to as the 'rewards system' begins to develop rather early in adolescence. The rewards system is stimulated with increased releases of dopamine when engaged in sensation-seeking behavior. This change encourages adolescence to desire independence, seek novel experiences, and engage in more adult-like activities (Spear, 2007). Many of these exciting, novel, independent activities are associated with some risk (e.g., drugs, driving, sex). Increases in sensation-seeking behavior are observed in 14 to 22-year-olds. The level of sensation-seeking is typically greater in males than females and continues further into adulthood for males. Sensation-seeking behavior tends to peak in females around 16, whereas males peak around 19 (Romer, 2012).

The decision-making process involved in sensation-seeking may be the same heuristic that influences adult decisions. Heuristics are simple decision rules that allow us to make decisions quickly, without much contemplation. In this case, the affect heuristic seems to apply in many risky decisions. The affect heuristic relies on our dominant affective (emotional) reaction to a situation when evaluating the risks and rewards. Simply, we tend to conclude that the more positive effect that is associated with a situation, the less risk we attach. The rational choice would expect us to evaluate risk and reward separately, not in relation to one another. Enjoying an activity does not inherently make it less risky, and safe activity is not innately less enjoyable (Romer, 2012).

Peers are another influence on risk-taking behavior. Adolescent sensation seekers not only associate the positive effects with risky behaviors, but they also seek out peers with similar interests. These peers create

a social group that may encourage risk-taking behavior and increases the positive affect associated with the experience. The influence of peers on risky behavior is greater than that of sensation-seeking alone. However, the combination of sensation-seeking and peer influence has a significantly greater influence on risky adolescent behavior than sensation-seeking or peer influence alone (Romber, 2012).

Delayed Executive Functioning

Another area of the brain that may influence risk-taking tendencies in adolescence is the prefrontal cortex. As previously mentioned, this part of the brain is not fully developed until early adulthood. The developed prefrontal cortex allows us to assess situations, consider consequences, and control impulses adequately. The gap between the increase in the sensation-seeking of the rewards system and the slower-developing prefrontal cortex puts adolescents at particular jeopardy for risk-taking behaviors and potentially unhealthy outcomes.

Brain research data has led to the idea of ‘frontalization,’ whereby the prefrontal cortex gradually becomes able to oversee and regulate the behavioral responses initiated by the more primitive limbic structures. However, when stress, arousal, or sensations become extreme, the adolescent brain is flooded with impulses that overwhelm the prefrontal cortex, and as a result, adolescents engage in increased risk-taking behaviors and emotional outbursts. With an immature prefrontal cortex, even if teens understand that something is dangerous, they may still engage in risky behavior. Recognizing the asynchrony of development of the regions of the brain helps us to see adolescent risk-taking in a whole new light.

The Influence of Experience

Risk-taking behavior is not uniform across adolescence or among adolescents. For example, the Seattle Social Development Project (Hill, White, Hawkins, & Catalano, 2000) found that 70% of youth 13 to 18 had not engaged in binge drinking. Three percent reported binge drinking starting at 13 years old and continued through age 18. Another four percent engaged in binge drinking later in adolescence. And 23% didn’t binge drink until they were 18 years old. The likelihood of engaging in risk-taking behavior and the timing of these behaviors may be influenced by experience—either early life experiences that increase the propensity toward risk-taking or normative age-graded influences.

For some teens, their impulsivity and risk-taking behavior may have begun years before and persisted into adolescence. There is considerable evidence that adolescent risk-taking, for some, is due to impaired impulse control that occurred in the first years of life due to exposure to severe, chronic stress. This type of stress can have a ‘toxic’ effect on a range of behaviors and health outcomes. The Adverse Childhood Experiences (ACE) study (CDC, 2019) found that exposure to abuse, neglect, domestic or community violence, familial substance abuse or mental illness, separation from parents, homelessness, discrimination, natural disasters, and war are serious traumas that result in toxic stress. Those facing adverse childhood experiences are at higher risk for

adolescent pregnancy, early sexual activity, multiple sexual partners, intimate partner violence, substance abuse, depression, suicide, and poor physical health. In general, the more adverse childhood experiences, the more risky behaviors in adolescence.

The second source for risk, as previously discussed, is the increase in sensation-seeking associated with brain development. Those changes encourage experimentation with adult-like behavior. These risky behaviors are part of normative age-graded influence due to a lack of experience. To overcome the tendency toward these behaviors is to gain experience in taking risks. The role of experience is critical in developing the neural connectivity that allows for the conscious cognitive control of the emotions and passions of adolescence. Teens who take risks in relatively safe situations exercise the circuitry and develop the skills to “put on the brakes” in more dangerous situations (Giedd, 2004).

Decreasing the Risk

Mitigating the extremes of risk-taking and potential unhealthy outcomes is possible. There are two approaches to helping young people reduce risk and stay safe. First, early intervention, before children reach adolescence, is the best time to teach executive functioning and self-regulation skills that can reduce impulsivity. Second, teens need to gain life experience. When high sensation-seekers engage in risk-taking, they develop greater patience. Patience is a factor that reduces risk-taking behavior. This effect is amplified in conduct-disordered teens. Conduct disorder is a psychological diagnosis applied only to minors, characterized by impulsivity, aggression, deceitfulness, destructive behavior, and resistance to authority or rules. These youth are often sensation-seeking and take risks with the possibility of serious consequences. However, despite their greater risk-taking behavior, their consequences may actually result in them being less impatient than their low sensation-seeking peers (Turner & Piquero, 2002). It seems that teens need to engage in some risk-taking behavior to learn from the consequences of their experiences.

Adolescents are often mischaracterized as irrational loose cannons. However, while adolescents may be learning to think like adults, their brains are not fully developed. A hopped-up rewards system that can drown out warning signals about risk from an underdeveloped prefrontal cortex results in more risk-taking behaviors. Adolescent decisions are not always defined by impulsivity because of lack of brakes, but because of planned and enjoyable pressure to the accelerator. It is helpful to put all of these brain processes in a developmental context. Young people need to somewhat enjoy the thrill of risk-taking in order to complete the incredibly overwhelming task of growing up.

30.

STRESS AND ADOLESCENTS

Whenever we encountered something stressful, it could be as small as doing something challenging to as big as losing a loved one unexpectedly, these events illicit stressful response in our body. Specifically, there are two routes that we go through when we experience a stressful event: a fast response through the **Sympathetic-Adreno-Medullar System** and a slow response through **the Hypothalamic-Pituitary-Adrenal System**

Sympathetic-Adreno-Medullar (SAM) System

The body's quick response to stress is triggered by activation of the **Sympathetic-Adrenal-Medullary (SAM) system**. When a stressor is perceived, the adrenal medulla releases the hormones **epinephrine (adrenaline)** and **norepinephrine (noradrenaline)** into the bloodstream. In addition, norepinephrine is also released directly from sympathetic nerve endings. This surge of hormones stimulates the **central nervous system, muscles, and organs** throughout the body, leading to physiological changes such as increased heart rate, elevated blood pressure, and heightened alertness. These changes prepare the body to respond rapidly to a threat—a reaction commonly known as the **fight-or-flight response**. This system plays a key role in our ability to respond to immediate danger.



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Video 4.4.1 The Sympathetic Nervous System and how it functions when we are exposed to a stressor.

Hypothalamic-Pituitary-Adrenal System

The body's slower, longer-lasting response to stress is enabled by activation of the **Hypothalamic-Pituitary-Adrenal (HPA) axis**. When a stressor is detected, the **hypothalamus** releases **corticotropin-releasing hormone (CRH)**, which then signals the **anterior pituitary gland** to secrete **adrenocorticotrophic hormone (ACTH)**. ACTH travels through the bloodstream to the **adrenal cortex**, where it stimulates the release of **glucocorticoid hormones**, such as **cortisol**. Cortisol plays a key role in helping the body manage

and recover from stress by regulating **blood sugar levels**, **blood pressure**, and **metabolism**. This system supports sustained energy and balance during prolonged stress.



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Video 4.4.2 The Hypothalamic-Pituitary-Adrenal System and how it functions when we are exposed to a stressor.

Stress in adolescence

The **SAM** and **HPA** systems enable the body to prepare for and respond to stressors. However, in adolescence, these systems are not yet as fully developed or regulated as they are in adulthood, making adolescents particularly sensitive to stress-induced neurobehavioral dysfunction. As adolescents typically have less experience coping with stress, they may be more vulnerable to its effects compared to adults. Chronic stress during this period can lead to serious consequences, including increased **substance use**, heightened **anxiety** and **depressive symptoms**, and even long-term impacts on physical health. For example, prolonged stress can impair the **immune system** and contribute to **metabolic disorders**, highlighting the importance of early support and intervention.

It is important to support adolescence during this time period. Some ways to help adolescences to cope with stress includes:

- model proper stress coping mechanisms
- encourage participation in organized sports
- increase voluntary outdoor play
- collaborate with schools and family
- address and modify cognitive biases.

In conclusion, the body has highly sophisticated systems in place to regulate and respond to stress. However, experiencing chronic or prolonged stress can have serious consequences, especially during adolescence. This developmental period is marked by rapid changes in relationships, responsibilities, and environments—all of which can be significant sources of stress. Supporting adolescents as they navigate these challenges and helping them develop effective coping strategies is essential for promoting healthy cognitive, emotional, and physical development.

31.

Glossary

amygdala: part of the limbic system in the brain, which is involved with emotions and emotional responses and is particularly active during puberty

dopamine: a neurotransmitter in the brain that plays a role in pleasure and the reward system; increases in the limbic system and later in the prefrontal cortex during adolescence

frontal lobes: the parts of the brain involved in impulse control, planning, and higher-order thinking; still developing in adolescence

limbic system: structures in the brain (including the amygdala) that involve processing emotional experience and social information and determining rewards and punishments; develops years before the prefrontal cortex

melatonin: sleep hormone whose levels rise later at night and decrease later in the morning for teens, compared to children and adults

myelination: insulation of neurons' axons with a fatty substance (myelin sheath) that helps speed up the processing of information; myelination starts to increase in the prefrontal cortex during adolescence

prefrontal cortex: part of the frontal lobes, involved with decision making, cognitive control, and other higher-order functions; prefrontal cortex develops further during adolescence

serotonin: "calming chemical," a neurotransmitter in the brain involved with the regulation of mood and behavior; serotonin levels increase in the limbic system during adolescence

synaptic pruning: connections in the brain that are not used much are lost so that other connections can be strengthened; this pruning happens with prefrontal cortex connections in adolescence

major depression: feelings of hopelessness, lethargy, and worthlessness that last two weeks or more

suicide: the act of intentionally causing one's own death

suicidal ideation: thinking about suicide, usually with some serious emotional and intellectual or cognitive overtones

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PART V

COGNITIVE CHANGES DURING MIDDLE CHILDHOOD AND ADOLESCENCE

Learning Objectives

- Explain Piaget's stage theory and Vygotsky's sociocultural theory as it applies to middle childhood and adolescence
- Compare and contrast between Piaget's stage theory and Vygotsky's sociocultural theory
- Describe the various aspects of the process of thinking and how it applies to middle childhood and adolescence
- Describe the concept of intelligence, theories on intelligence and how we measured intelligence

School years are times of rapid cognitive development. Biological changes in brain structure and connectivity in the brain interact with increased experience, knowledge, and changing social demands to produce rapid cognitive growth. Development of executive functions, or cognitive skills that enable the control and coordination of thoughts and behavior, are generally associated with the prefrontal cortex area of the brain. The thoughts, ideas, and concepts developed during this period of life greatly influence one's future life and play a major role in character and personality formation.

In this chapter, we will focus on two theories on intelligence: Piaget's cognitive development theory and Vygotsky's sociocultural theory. We will then describe various components of information processing such as attention, memory, processing speed, and metacognition.

33.

Psychological Constructivism

In previous chapters, we briefly reviewed Piaget and his cognitive development theory. Piaget believed that when we are faced with new information that we experience a **cognitive disequilibrium**. In response, we are continuously trying to regain cognitive homeostasis through adaptation. Piaget also proposed that through maturation we progress through four stages of cognitive development. As Piaget believed that adolescence was the start of the fourth stage, we will focus on the cognitive developments that occur during this stage.

Adaptation

When it comes to maintaining cognitive equilibrium, young people have much more of a challenge because they are constantly being confronted with new situations. All of this new information needs to be organized. The framework for organizing information is referred to as a **schema**. We develop schemata through the processes of adaptation. Adaptation can occur through assimilation and accommodation.



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Video 5.1.1 *Semantic Networks and Spreading Activation* explains the creation and use of schemas.

Sometimes when we are faced with new information, we can simply fit it into our current schema; this is called **assimilation**. For example, a student is given a new math problem in class. They use previously learned strategies to try to solve the problem. While the problem is new, the process of solving the problem is something familiar to the student. The new problem fits into their current understanding of the math concept.

Not all new situations fit into our current framework and understanding of the world. In these cases, we may need **accommodation**, which is expanding the framework of knowledge to accommodate the new situation. If the student solving the math problem could not solve it because they were missing the strategies

necessary to find the answer, they would first need to learn these strategies, and then they could solve the problem.

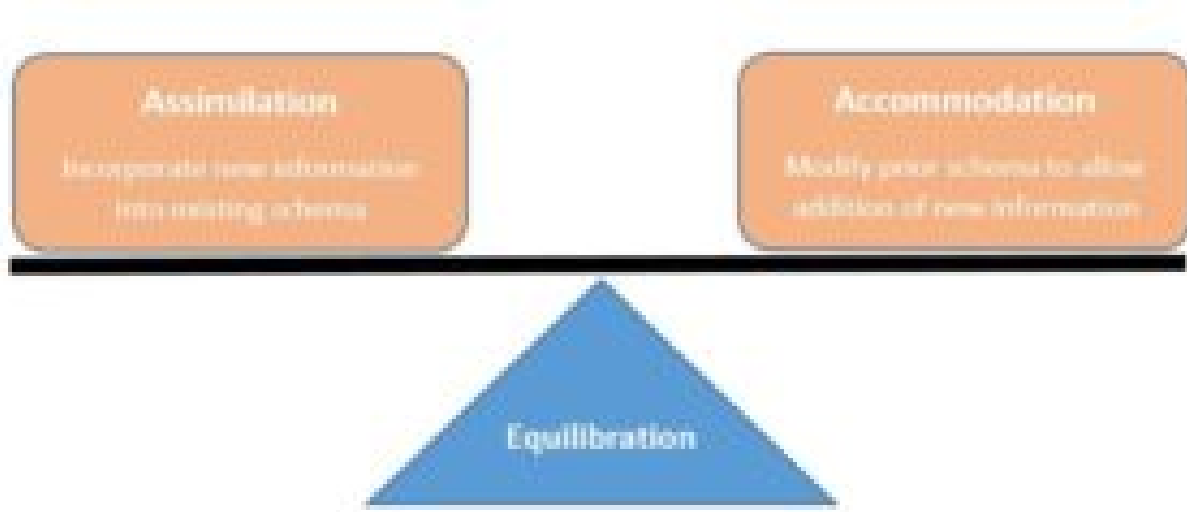


Figure 5.1.1. Model of Piaget's adaptation theory.



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Video 5.1.2. *Schemas, Assimilation, and Accommodation* explains Piaget's theory of constructing schemas through adaptation.

Piaget's Stages of Cognitive Development

Piaget was a **psychological constructivist**: in his view, learning proceeded by the interplay of assimilation (adjusting new experiences to fit prior concepts) and accommodation (adjusting concepts to fit new experiences). The to-and-fro of these two processes leads not only to short-term learning but also to long-term **developmental change**. The long-term developments are really the main focus of Piaget's cognitive theory.

After observing children closely, Piaget proposed that cognition developed through distinct stages from birth through the end of adolescence. By stages he meant a sequence of thinking patterns with four key features:

1. They always happen in the same order.
2. No stage is ever skipped.
3. Each stage is a significant transformation of the stage before it.
4. Each later stage incorporated the earlier stages into itself.

Piaget proposed four major stages of cognitive development and called them (1) sensorimotor intelligence, (2) preoperational thinking, (3) concrete operational thinking, and (4) formal operational thinking. Each stage is correlated with an age period of childhood, but only approximately.



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Video 5.1.3. *Piaget's Stages of Cognitive Development* explains the structure of the four stages and major cognitive developments associated with each stage.

Sensorimotor Stage



According to Piaget, children are in the sensorimotor stage from birth until the age of 2. This first stage is defined as the period when infants “think” by means of their senses and motor actions. As every new parent will attest, infants continually touch, manipulate, look, listen to, and even bite and chew objects. According to Piaget, these actions allow them to learn about the world and are crucial to their early cognitive development.

The infant’s actions allow the child to represent (or construct simple concepts of) objects and events. A toy animal may be just a confusing array of sensations at first. However, by looking, feeling, and manipulating it repeatedly, the child gradually organizes her sensations and actions into a stable concept, a *toy animal*. The representation acquires a permanence lacking in the individual experiences of the object, which are constantly changing. Because the representation is stable, the child “knows,” or at least believes, that toy animal exists even if the actual *toy animal* is temporarily out of sight. Piaget called this sense of stability **object permanence**, a belief that objects exist whether or not they are actually present. It is a major achievement of sensorimotor development, and marks a qualitative transformation in how older infants (24 months) think about experience compared to younger infants (6 months).

During much of infancy, of course, a child can only barely talk, so sensorimotor development initially happens without the support of language. It might, therefore, seem hard to know what infants are thinking,

but Piaget devised several simple, but clever, experiments to get around their lack of language. The results of these experiments suggest that infants do indeed represent objects even without being able to talk (Piaget, 1952). In one, for example, he simply hid an object (like a toy animal) under a blanket. He found that doing so consistently prompts older infants (18–24 months) to search for the object, but fails to prompt younger infants (less than six months) to do so. ‘Something’ motivates the search by the older infant even without the benefit of language, and the ‘something’ is presumed to be a permanent concept or representation of the object.

Preoperational Stage



In the **preoperational stage**, children ages 2 to 7 use their new ability to represent objects in a wide variety of activities, but they do not yet do it in ways that are organized or fully logical. One of the most obvious examples of this kind of cognition is **dramatic play**, the improvised make-believe of preschool children. If you have ever had responsibility for children of this age, you have likely witnessed such play. Ashley holds a plastic banana to her ear and says:

“Hello, Mom? Can you be sure to bring me my baby doll? OK!” Then she hangs up the banana and pours tea for Jeremy into an invisible cup. Jeremy giggles at the sight of all of this and exclaims: “Rinnng! Oh Ashley, the phone is ringing again! You better answer it.” And on it goes.

In a way, children immersed in make-believe seem “mentally insane,” in that they do not think realistically. But they are not truly insane because they have not really taken leave of their senses. At some level, Ashley and Jeremy always know that the banana is still a banana and not *really* a telephone; they are merely *representing* it as a telephone. They are thinking on two levels at once—one imaginative and the other realistic. This dual processing of experience makes dramatic play an early example of **metacognition**, or reflecting on and monitoring of thinking itself. Metacognition is a highly desirable skill for success in school, one that teachers often encourage (Bredekamp & Copple, 1997; Paley, 2005). Partly for this reason, teachers of young children (preschool, kindergarten, and even first or second grade) often make time and space in their classrooms for dramatic play, and sometimes even participate in it themselves to help develop the play further.

Concrete Operational Stage



As children continue into elementary school, they become able to represent ideas and events more flexibly and logically. Their rules of thinking still seem very basic by adult standards and usually operate unconsciously, but they allow children to solve problems more systematically than before, and therefore to be successful with many academic tasks. In the concrete operational stage, for example, a child may unconsciously follow the rule: “If nothing is added or taken away, then the amount of something stays the same.” This simple principle helps children to understand certain arithmetic tasks, such as in adding or subtracting zero from a number, as well as to do certain classroom science experiments, such as ones involving judgments of the amounts of liquids when mixed. Piaget called this period the **concrete operational stage** because children mentally “operate” on concrete objects and events. They are not yet able, however, to operate (or think) systematically about *representations* of objects or events. Manipulating representations is a more abstract skill that develops later, during adolescence.

Concrete operational thinking differs from preoperational thinking in two ways, each of which renders children more skilled as students. One difference is **reversibility**, or the ability to think about the steps of a process in any order. Imagine a simple science experiment, for example, such as one that explores why objects sink or float by having a child place an assortment of objects in a basin of water. Both the preoperational and concrete operational child can recall and describe the steps in this experiment, but only the concrete operational child can recall them *in any order*. This skill is beneficial for any task involving multiple steps—a common feature of tasks in the classroom. In teaching new vocabulary from a story, for another example, a teacher might tell students: “First make a list of words in the story that you do not know, then find and write down their definitions, and finally get a friend to test you on your list.” These directions involve repeatedly remembering to move back and forth between a second step and a first—a task that concrete operational students—and most adults—find easy, but that preoperational children often forget to do or find confusing. If the younger children are to do this task reliably, they may need external prompts, such as having the teacher remind them periodically to go back to the story to look for more unknown words.

The other new feature of thinking during the concrete operational stage is the child’s ability to **decenter** or focus on more than one feature of a problem at a time. There are hints of decentration in preschool children’s dramatic play, which requires being aware on two levels at once—knowing that a banana can be both a banana and a “telephone.” The decentration of the concrete operational stage is more deliberate and conscious than preschoolers’ make-believe. Now the child can attend to two things at once quite purposely. Suppose you give students a sheet with an assortment of subtraction problems on it and ask them to do this: “Find all of the problems that involve two-digit subtraction *and* that involve borrowing from the next column. Circle and solve *only* those problems.” Following these instructions is quite possible for a concrete operational student (as long as they have been listening!) because the student can attend to the two subtasks simultaneously—finding the two-digit problems *and* identifying which involve borrowing.

In real classroom tasks, reversibility and decentration often happen together. A well-known example of joint presence is Piaget's experiments with **conservation**, the belief that an amount or quantity stays the same even if it changes apparent size or shape (Piaget, 2001; Matthews, 1998). Imagine two identical balls made of clay. Any child, whether preoperational or concrete operational, will agree that the two indeed have the same amount of clay in them simply because they look the same. However, if you now squish one ball into a long, thin "hot dog," the preoperational child is likely to say that the amount of that ball has changed—either because it is longer or because it is thinner, but at any rate, because it now looks different. The concrete operational child will not make this mistake, thanks to new cognitive skills of reversibility and decentration. For this child, the amount is the same because "you could squish it back into a ball again" (reversibility) and because "it may be longer, but it is also thinner" (decentration). Piaget would say the concrete operational child "has conservation of quantity."

Aside from these skills, children also develop their **classification** ability, meaning that they are capable of building schemata and are able to organize objects in many different ways. They can arrange objects into a variety of classes and subclasses. They also develop their understanding of **identity** that objects have qualities that do not change even if the object is altered in some way. For instance, mass of an object does not change by rearranging it. A piece of chalk is still chalk even when the piece is broken in two.

Finally, they also demonstrate **seriation**: arranging items along a quantitative dimension, such as length or weight, in a methodical way. For example, they can methodically arrange a series of different-sized sticks in order by length, while younger children approach a similar task in a haphazard way.

The classroom examples described above also involve **reversibility** and **decentration**. As already mentioned, the vocabulary activity described earlier requires reversibility (going back and forth between identifying words and looking up their meanings). However, it can also be construed as an example of decentration. Furthermore, as mentioned, the arithmetic activity requires decentration (looking for problems that meet two criteria *and* also solving them). However, it can also be construed as an example of reversibility (going back and forth between subtasks, as with the vocabulary activity). Either way, the development of concrete operational skills support students in doing many basic academic tasks; in a sense, they make ordinary schoolwork possible.

However, according to Piaget, children in concrete operation stages still cannot think in abstract ways. Additionally, they do not think in systematic scientific ways. For example, when asked which variables influence the period that a pendulum takes to complete its arc and given weights they can attach to strings in order to do experiments, most children younger than 12 perform biased experiments from which no conclusions can be drawn (Inhelder & Piaget, 1958).

Formal Operational Stage



In the fourth (and last) of the Piagetian stages, an adolescent becomes able to reason not only about tangible objects and events, as younger children do, but also about hypothetical or abstract ones. Hence this stage is named the **formal operational** stage—the period when the individual can “operate” on “forms” or representations.

During the formal operational stage, adolescents can understand **abstract principles** that have no physical reference. They can now contemplate such abstract constructs as beauty, love, freedom, and morality. The adolescent is no longer limited by what can be directly seen or heard. Additionally, while younger children solve problems through trial and error, adolescents demonstrate **hypothetical-deductive reasoning**, which is developing hypotheses based on what might logically occur. They can think about all the possibilities in a situation beforehand, and then test them systematically (Crain, 2005). Now they can engage in real scientific thinking. Formal operational thinking also involves accepting hypothetical situations. Adolescents understand the concept of **transitivity**, which means that a relationship between two elements is carried over to other elements logically related to the first two, such as if $A < B$ and $B < C$, then $A < C$ (Thomas, 1979). For example, when asked: If Maria is shorter than Alicia and Alicia is shorter than Caitlyn, who is the shortest? Adolescents can answer the question correctly as they understand the transitivity involved.



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Video 5.1.4. *Formal Operational Stage* explains some of the cognitive development consistent with formal operational thought.

Abstract and Hypothetical Thinking

One of the major premises of formal operational thought is the capacity to think of possibility, not just reality. Adolescents’ thinking is less bound to concrete events than that of children; they can contemplate possibilities outside the realm of what currently exists. One manifestation of the adolescent’s increased facility with thinking about possibilities is the improvement of skill in **deductive reasoning (also called top-down reasoning)**, which leads to the development of **hypothetical thinking**. This development provides the ability to plan ahead, see the future consequences of an action, and provide alternative explanations of events. It also makes adolescents more skilled debaters, as they can reason against a friend’s or parent’s assumptions. Adolescents also develop a more sophisticated understanding of probability.

This appearance of more systematic, abstract thinking allows adolescents to comprehend the sorts of higher-order abstract logic inherent in puns, proverbs, metaphors, and analogies. Their increased facility permits them to appreciate how language can be used to convey multiple messages, such as satire, metaphor, and sarcasm (children younger than age nine often cannot comprehend sarcasm). This development also permits the application of advanced reasoning and logical processes to social and ideological matters such as interpersonal relationships, politics, philosophy, religion, morality, friendship, faith, fairness, and honesty.

Deductive Reasoning

<https://youtu.be/Yjyuy4B2aKU>

Video 5.1.5. *Deductive Reasoning* demonstrates a Piagetian task that presents the child with a hypothetical situation and asks that they deduce what happens given this scenario. The first child is an elementary school-aged child. The second is an adolescent. You can see how these two are able to use hypothetical information differently to make predictions about what will happen next.

Intuitive and Analytic Thinking

Piaget emphasized the sequence of thought throughout four stages. Others suggest that thinking does not develop in sequence, but instead, that advanced logic in adolescence may be influenced by intuition. Cognitive psychologists often refer to intuitive and analytic thought as the **dual-process model**, the notion that humans have two distinct networks for processing information (Kuhn et al., 2013.) **Intuitive thought** is automatic, unconscious, and fast, and it is more experiential and emotional.

In contrast, **analytic thought** is deliberate, conscious, and rational (logical). While these systems interact, they are distinct (Kuhn, 2013). Intuitive thought is easier, quicker, and more commonly used in everyday life. As discussed in the adolescent brain development section, the discrepancy between the maturation of the limbic system and the prefrontal cortex may make teens more prone to emotional, intuitive thinking than adults. As adolescents develop, they gain in logic/analytic thinking ability and sometimes regress, with social context, education, and experiences becoming significant influences. Simply put, being “smarter,” as measured by an intelligence test, does not advance cognition as much as having more experience, in school and life (Klaczynski & Felmban, 2014).

Relativistic Thinking

Adolescents are more likely to engage in **relativistic thinking**—in other words, they are more likely to

question others' assertions and less likely to accept information as absolute truth. Through experience outside the family circle, they learn that rules they were taught as absolute are relativistic. They begin to differentiate between rules crafted from common sense (do not touch a hot stove) and those that are based on culturally relative standards (codes of etiquette). This can lead to a period of questioning authority in all domains.

Formal Operational Thinking In the Classroom

School is a main contributor in guiding students towards formal operational thought. With students at this level, the teacher can pose hypothetical (or contrary-to-fact) problems: "What if the world had never discovered oil?" or "What if the first European explorers had settled first in California instead of on the East Coast of the United States?" To answer such questions, students must use hypothetical reasoning, meaning that they must manipulate ideas that vary in several ways at once and do so entirely in their minds.

The hypothetical reasoning that concerned Piaget primarily involved scientific problems. His studies of formal operational thinking therefore often look like problems that middle or high school teachers pose in science classes. In one problem, for example, a young person is presented with a simple pendulum, to which different amounts of weight can be hung (Inhelder & Piaget, 1958). The experimenter asks: "What determines how fast the pendulum swings: the length of the string holding it, the weight attached to it, or the distance that it is pulled to the side?" The young person is not allowed to solve this problem by trial-and-error with the materials themselves but must reason a way to the solution mentally. To do so systematically, he or she must imagine varying each factor separately, while also imagining the other factors that are held constant. This kind of thinking requires facility at manipulating mental representations of the relevant objects and actions—precisely the skill that defines formal operations.

As you might suspect, students with an ability to think hypothetically have an advantage in many kinds of schoolwork: by definition, they require relatively few "props" to solve problems. In this sense, they can in principle be more self-directed than students who rely only on concrete operations—certainly a desirable quality in the opinion of most teachers. Note, though, that formal operational thinking is desirable but not sufficient for school success, and that it is far from being the only way that students achieve educational success. Formal thinking skills do not ensure that a student is motivated or well-behaved, for example, nor does it guarantee other desirable skills. The fourth stage in Piaget's theory is really about a particular kind of formal thinking, the kind needed to solve scientific problems and devise scientific experiments. Since many people do not normally deal with such problems in the normal course of their lives, it should be no surprise that research finds that many people never achieve or use formal thinking fully or consistently, or that they use it

only in selected areas with which they are very familiar (Case et al., 1996). For teachers, the limitations of Piaget's ideas suggest a need for additional theories about development—ones that focus more directly on the social and interpersonal issues of childhood and adolescence.

Adolescent Egocentrism



Once adolescents can understand abstract thoughts, they enter a world of hypothetical possibilities and demonstrate **egocentrism** or a heightened self-focus. The egocentricity comes from attributing unlimited power to their own thoughts (Crain, 2005). Piaget believed it was not until adolescents took on adult roles that they would be able to learn the limits to their own thoughts.

David Elkind (1967) expanded on the concept of Piaget's adolescent egocentricity. Elkind theorized that the physiological changes that occur during adolescence result in adolescents being primarily concerned with themselves. Additionally, since adolescents fail to differentiate between what others are thinking and their own thoughts, they believe that others are just as fascinated with their behavior and appearance. This belief results in the adolescent anticipating the reactions of others, and consequently constructing an imaginary audience. "The **imaginary audience** is the adolescent's belief that those around them are as concerned and focused on their appearance as they themselves are" (Schwartz, Maynard, & Uzelac, 2008, p. 441). Elkind thought that the imaginary audience contributed to the self-consciousness that occurs during early adolescence. The desire for privacy and reluctance to share personal information may be a further reaction to feeling under constant observation by others.

Another important consequence of adolescent egocentrism is the **personal fable** or belief that one is unique, special, and invulnerable to harm. Elkind (1967) explains that because adolescents feel so important to others (imaginary audience), they regard themselves and their feelings as being special and unique. Adolescents believe that only they have experienced strong and diverse emotions, and therefore others could never understand how they feel. This uniqueness in one's emotional experiences reinforces the adolescent's belief of invulnerability, especially to death. Adolescents will engage in risky behaviors, such as drinking and driving or unprotected sex, and feel they will not suffer any negative consequences. Elkind believed that adolescent egocentricity emerges in early adolescence and declines in middle adolescence. However, recent research has also identified egocentricity in late adolescence (Schwartz et al., 2008).

Consequences of Formal Operational Thought

As adolescents are now able to think abstractly and hypothetically, they exhibit many new ways of reflecting on information. For example, they demonstrate greater **introspection** or thinking about one's thoughts and feelings. They begin to imagine how the world could be, which leads them to become **idealistic** or to insist upon high standards of behavior. Because of their idealism, they may become critical of others, especially adults in their life. Additionally, adolescents can demonstrate **hypocrisy**, or pretend to be what they are not. Since they can recognize what others expect of them, they will conform to those expectations for their emotions and behavior seemingly hypocritical to themselves. Lastly, adolescents can exhibit **pseudostupidity**. This is when they approach problems at a level that is too complex and they fail because the tasks are too simple. Their new ability to consider alternatives is not completely under control and they appear "stupid" when they are, in fact, bright, just not experienced.

Beyond Formal Operational Thought: Postformal Thought

According to Piaget's theory, adolescents acquire formal operational thought and this is the last stage of cognitive development. The hallmark of this type of thinking is the ability to think abstractly or to consider possibilities and ideas about circumstances never directly experienced. Thinking abstractly is only one characteristic of adult thought, however. If you compare a 15-year-old with someone in their late 30s, you would probably find that the latter considers not only what is possible but also what is likely. Why the change? The adult has gained experience and understands why possibilities do not always become realities. They learn to base decisions on what is realistic and practical, not idealistic, and can make adaptive choices. Adults are also not as influenced by what others think. This advanced type of thinking is referred to as **postformal thought** (Sinnott, 1998).

In addition to moving toward more practical considerations, thinking in early adulthood may also become more flexible and balanced. Abstract ideas that the adolescent believes in firmly may become standards by which the adult evaluates reality. Adolescents tend to think in **dichotomies**; ideas are true or false; good or bad; there is no middle ground. However, with experience, the adult comes to recognize that there are some right and some wrong in each position, some good or some bad in a policy or approach, some truth and some falsity in a particular idea. This ability to bring together salient aspects of two opposing viewpoints or positions is referred to as **dialectical thought** and is considered one of the most advanced aspects of postformal thinking (Basseches, 1984). Such thinking is more realistic because very few positions, ideas, situations, or people are completely right or wrong. So, for example, parents who were considered angels or devils by the adolescent eventually become just people with strengths and weaknesses, endearing qualities, and faults to the adult.



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Video 5.1.6. *Perry's Stages of Intellectual Development* explains post-formal stages of cognitive development in adulthood.

Does Everyone Reach Formal Operational or Postformal Thought?

Formal operational thought is influenced by experience and education. Most people attain some degree of formal operational thinking but use formal operations primarily in the areas of their strongest interest (Crain, 2007). Even those that can use formal or postformal thought, they do not regularly demonstrate it. In some small villages and tribal communities, it is barely used at all. A possible explanation is that an individual's thinking has not been sufficiently challenged to demonstrate formal operational thought in all areas.

Some adults lead lives in which they are not challenged to think abstractly about their world. Many adults do not receive any formal education and are not taught to think abstractly about situations they have never experienced. Further, they are also not exposed to conceptual tools used to formally analyze hypothetical situations. Those who do think abstractly, in fact, may be able to do so more easily in some subjects than others. For example, psychology majors may be able to think abstractly about psychology, but be unable to use abstract reasoning in physics or chemistry. Abstract reasoning in a particular field requires a knowledge base that we might not have in all areas. Consequently, our ability to think abstractly depends to a large extent on our experiences.

34.

Social Constructivism



Lev Vygotsky (1896-1934) was a Russian psychologist whose **sociocultural theory** emphasizes the importance of culture and interaction in the development of cognitive abilities. Vygotsky differed with Piaget in that he believed that a person has not only a set of abilities but also a set of potential abilities that can be realized if given the proper guidance from others. Vygotsky developed theories on teaching that have been adopted by educators today.

Like Piaget, Vygotsky acknowledged intrinsic development, but he argued that it is the language, writings, and concepts arising from the culture that elicit the highest level of cognitive thinking (Crain, 2007). He believed that social interactions with teachers and more learned peers could facilitate a learner's potential for learning. Without this interpersonal instruction, he

believed learner's minds would not advance very far as their knowledge would be based only on their own discoveries.

Figure 5.2.1. Lev Vygotsky

Zone of Proximal Development and Scaffolding

Vygotsky's best-known concept is the **Zone of Proximal Development (ZPD)**. The ZPD has been defined as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem-solving under adult guidance, or in collaboration with more capable peers" (Vygotsky, 1978, p. 86). Vygotsky stated that learners should be taught in the ZPD. A good teacher or more-knowledgeable-other (MKO) identifies a learner's ZPD and helps them stretch beyond it. Then the MKO gradually withdraws support until the learner can perform the task unaided. Other psychologists have applied the metaphor of scaffolds (the temporary platforms on which construction workers stand) to Vygotsky's theory. **Scaffolding** is the temporary support that a MKO gives a learner to do a task.

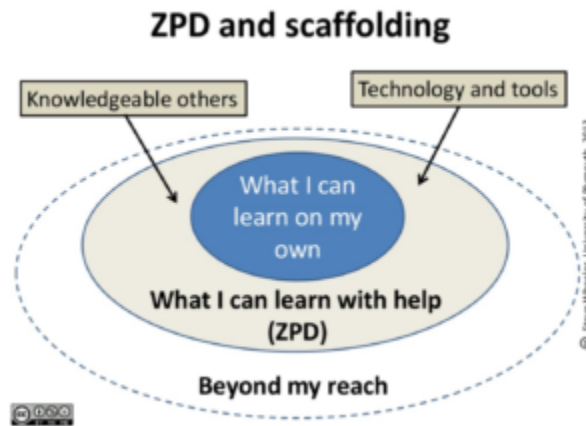


Figure 5.2.2. Model of Vygotsky's zone of proximal development.

Thought and Speech

Do you ever talk to yourself? Why? Chances are, this occurs when you are struggling with a problem, trying to remember something, or feel very emotional about a situation. Children talk to themselves too. Piaget interpreted this as **egocentric speech** or a practice engaged in because of a child's inability to see things from another's point of view. Vygotsky, however, believed that children talk to themselves in order to solve problems or clarify thoughts. As children learn to think in words, they do so aloud, referred to as **private speech**, speech meant only for one's self. Eventually, thinking out loud becomes thought accompanied by internal speech, and talking to oneself becomes a practice only engaged in when we are trying to learn something or remember something. This inner speech is not as elaborate as the speech we use when communicating with others (Vygotsky, 1962).

Vygotsky's Influence on Education

Vygotsky's theories have been extremely influential for education. Although Vygotsky himself never mentioned the term scaffolding, it is often credited to him as a continuation of his ideas pertaining to the way adults or other children can use guidance in order for a child to work within their ZPD. (The term scaffolding was first developed by Jerome Bruner, David Wood, and Gail Ross while applying Vygotsky's concept of ZPD to various educational contexts.)

Educators often apply these concepts by assigning tasks that students cannot do on their own, but which they can do with assistance; they should provide just enough assistance so that students

learn to complete the tasks independently and then provide an environment that enables students to do harder tasks than would otherwise be possible. Teachers can also allow students with more knowledge to assist students who need more guidance. Especially in the context of collaborative learning, group members who have higher levels of understanding can help the less advanced members learn within their zone of proximal development.



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Video 5.2.1. *Vygotsky's Developmental Theory* introduces the applications of the theory in the classroom.

35.

Both **Cognitive Development Theory** and **Sociocultural Theory** are foundational frameworks in the field of developmental psychology. Each has made lasting contributions to our understanding of how children grow and learn, yet they differ significantly in their core assumptions, emphases, and interpretations of the learning process.

Active vs. Passive Learners:

Cognitive Development Theory, developed by Jean Piaget, positions children as **active agents** in their own development. Piaget believed that children construct knowledge through direct interaction with their environment, forming and refining mental schemas as they encounter new experiences. While this theory acknowledges the role of instruction, it places the emphasis on the child's independent discovery and problem-solving. In contrast, Sociocultural Theory, introduced by Lev Vygotsky, emphasizes the **social context** of learning. Vygotsky argued that knowledge is co-constructed through interaction with **more knowledgeable others**—such as parents, teachers, or peers—and that learning is deeply embedded in cultural and social experiences. In this view, cognitive growth is not solely a product of individual exploration but is mediated by guided participation and shared tools, especially language.

Continuous vs. Discontinuous Development:

Piaget's Cognitive Development Theory describes development as occurring in distinct, universal stages—sensorimotor, preoperational, concrete operational, and formal operational—each characterized by qualitatively different ways of thinking. This reflects a **discontinuous** view of development, where changes occur in abrupt, stage-like shifts. In contrast, Vygotsky's Sociocultural Theory adopts a **continuous** perspective, proposing that development is a gradual, ongoing process that varies across cultures and contexts. Rather than fixed stages, development is shaped by a child's immersion in their social and cultural environment, which continuously influences their learning trajectory.

Differential Focus:

While both theories are concerned with **cognitive development**, they diverge in what they emphasize. Cognitive Development Theory focuses on internal mental processes, such as logic, reasoning, and problem-solving, and how these evolve as children mature. It tends to view development as relatively **universal** across individuals. On the other hand, Sociocultural Theory places greater emphasis on external factors—such as cultural tools, language, norms, and interpersonal communication—as the primary drivers of development. It recognizes that learning is **culturally situated** and that children's development cannot be fully understood without considering the broader social context in which they are embedded.

36.

Information Processing Theories

Information Processing is *how individuals perceive, analyze, manipulate, use, and remember information*. Unlike Piaget's theory, this approach proposes that cognitive development is ongoing and gradual, not organized into distinct stages. Some of the areas where we see changes include:

- *Attention*. Improvements are seen in **selective attention** (the process by which one focuses on one stimulus while tuning out another), as well as **divided attention** (the ability to pay attention to two or more stimuli at the same time).
- *Memory*. Improvements are seen in working memory and long-term memory.
- *Processing Speed*. With maturation, children think more quickly. Processing speed improves sharply between age five and middle adolescence, levels off around age 15, and does not appear to change between late adolescence and adulthood.
- *Organization of Thinking*. As children mature, they are more planful, they approach problems with strategy, and are flexible in using different strategies in different situations.
- *Metacognition*. Older children can think about thinking itself. This often involves monitoring one's own cognitive activity during the thinking process. **Metacognition** provides the ability to plan ahead, see the future consequences of an action, and provide alternative explanations of events.

Attention

Changes in attention have been described by many as the key to changes in human memory (Nelson & Fivush, 2004; Posner & Rothbart, 2007). However, attention is not a unified function; it is comprised of sub-processes. Our ability to focus on a single task or stimulus while ignoring distracting information, called **selective attention**. There is a sharp improvement in selective attention from age six into adolescence (Vakil, Blachstein, Sheinman, & Greenstein, 2009). **Sustained attention** is the ability to stay on task for long periods. The ability to switch our focus between tasks or external stimuli is called **divided attention** or **multitasking**, **which** also improves into adolescence (Carlson, Zelazo, & Faja, 2013).





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Video 5.3.1. *Attention* explains the ways in which we may attend or fail to attend to stimuli.

Selective Attention

The ability with selective attention tasks improves through childhood and into adolescence. While children's selective attention may be inconsistent during middle childhood, adolescents demonstrate the ability to select and prioritize stimuli for attention reliably. The development of this ability is influenced by the child's temperament (Rothbart & Rueda, 2005), the complexity of the stimulus or task (Porporino, Shore, Iarocci & Burack, 2004), and may be dependent on whether the stimuli are visual or auditory (Guy, Rogers & Cornish, 2013). Guy et al. (2013) found that children's ability to attend to visual information selectively outpaced that of auditory stimuli. This change may explain why young children are not able to hear the voice of the teacher over the cacophony of sounds in the typical preschool classroom (Jones, Moore & Amitay, 2015). Jones and his colleagues found that 4 to 7 year-olds could not filter out background noise, especially when its frequencies were close in sound to the target sound. In comparison, teens often performed similarly to adults.



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Video 5.3.2. *Theories of Selective Attention* explains how and why we attend to some stimuli and not others.

Sustained Attention

Most measures of sustained attention typically ask individuals to spend several minutes focusing on one task, while waiting for an infrequent event, while there are multiple distractors for several minutes. Young children can retain their visual and auditory attention for approximately 5 minutes if they are 5-years-old, 6 minutes if they are 6-years old, 7 minutes if they are 7-years-old, and so on. If a task is interesting or novel, the child may sustain attention substantially longer. Sustained attention improves to around age 10, then plateaus with only small improvements to adulthood. Common estimates of the attention span of healthy teenagers and adults

range from 10 to 20 minutes. There is some debate as to whether attention is consistently sustained or whether people repeatedly choose to re-focus on the same thing (Raichle, 2015). This ability to renew attention permits people to ‘pay attention’ to things that last for more than a few minutes.

For time-on-task measurements, the type of activity used in the test affects the results, as people are generally capable of a longer attention span when they are doing something that they find enjoyable or intrinsically motivating (Raichle, 2015). Attention is also increased if the person can perform the task fluently, compared to a person who has difficulty performing the task, or to the same person when he or she is just learning the task. Fatigue, hunger, noise, and emotional stress reduce the time focused on the task. After losing attention from a topic, a person may restore it by resting, doing a different kind of activity, changing mental focus, or deliberately choosing to re-focus on the first topic.

Divided Attention

Divided attention can be thought of in a couple of ways. We may look at how well people can multitask, performing two or more tasks simultaneously, or how people can alternate attention between two or more tasks. For example, walking and talking to a friend at the same time is multitasking, where trying to text while driving requires us to alternate attention between two tasks quickly.

Young children (age 3-4) have considerable difficulties in dividing their attention between two tasks and often perform at levels equivalent to our closest relative, the chimpanzee. However, by age five, they have surpassed the chimp (Hermann, Misch, Hernandez-Lloreda & Tomasello, 2015; Hermann & Tomasello, 2015). Despite these improvements, 5-year-olds continue to perform below the level of school-age children, adolescents, and adults. These skills continue to develop into adolescence.

Regardless of age, we have a limited capacity for attention, and the division of attention is confined to that limitation. Our ability to effectively multitask or alternate attention is dependent on the automaticity or complexity of the task, but are also influenced by conditions like anxiety, arousal, task difficulty, and skills (Sternberg & Sternberg, 2012). Research shows that when dividing attention, people are more apt to make mistakes or perform their tasks more slowly (Matlin, 2013). Attention must be divided among all of the component tasks to perform them.

Classical research on divided attention involved people performing simultaneous tasks, like reading stories while listening and writing something else, or listening to two separate messages through different ears. Subjects were often tested on their ability to learn new information while engaged in multiple tasks. More current research examines the performance of doing two tasks simultaneously (Matlin, 2013), such as driving while performing another task. This research reveals that the human attentional system has limits for what it can process. For examples, driving performance is worse while engaged in other tasks; drivers make more mistakes, brake harder and later, get into more accidents, veer into other lanes, and/or are less aware of their surroundings when engaged in the previously discussed tasks (Collet et al., 2009; Salvucci & Taatgen, 2008; Strayer & Drews, 2007).



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Video 5.3.3. *The Spotlight Model of Attention and Our Ability to Multitask* explains how we divide our attention to attend to different tasks or information.

37.

INFORMATION PROCESSING: MEMORY

Memory is an information processing system; therefore, we often compare it to a computer. **Memory** is the set of processes used to encode, store, and retrieve information over different periods of time.



Figure 5.5.1. Encoding involves the input of information into the memory system. Storage is the retention of encoded information. Retrieval, or getting the information out of memory and back into awareness, is the third function.

Encoding

We get information into our brains through a process called **encoding**, which is the input of information into the memory system. Once we receive sensory information from the environment, our brains label or code it. We organize the information with other similar information and connect new concepts to existing concepts. Encoding information occurs through automatic processing and effortful processing.

If someone asks you what you ate for lunch today, more than likely, you could recall this information quite easily. This is known as **automatic processing**, or the encoding of details like time, space, frequency, and the meaning of words. Automatic processing is usually done without any conscious awareness. Recalling the last time you studied for a test is another example of automatic processing. However, what about the actual test material that you studied? It probably required a lot of work and attention on your part in order to encode that information. This is known as **effortful processing**.

There are three types of encoding. The encoding of words and their meaning is known as **semantic encoding**. It was first demonstrated by William Bousfield (1935) in an experiment in which he asked people to memorize words. The 60 words were divided into 4 categories of meaning, although the participants did not know this because the words were randomly presented. When they were asked to remember the words,

they tended to recall them in categories, showing that they paid attention to the meanings of the words as they learned them.

Visual encoding is the encoding of images, and **acoustic encoding** is the encoding of sounds, words in particular. To see how visual encoding works, read over this list of words: *car*, *level*, *dog*, *truth*, *book*, *value*. If you were asked later to recall the words from this list, which ones do you think you'd most likely remember? You would probably have an easier time recalling the words *car*, *dog*, and *book*, and a more difficult time recalling the words *level*, *truth*, and *value*. Why is this? Because you can recall images (mental pictures) more easily than words alone. When you read the words *car*, *dog*, and *book*, you created images of these things in your mind. These are concrete, high-imagery words. On the other hand, abstract words like *level*, *truth*, and *value* are low-imagery words. High-imagery words are encoded both visually and semantically (Paivio, 1986), thus building a more reliable memory.

Now let us turn our attention to acoustic encoding. You are driving in your car, and a song comes on the radio that you have not heard in at least ten years, but you sing along, recalling every word. In the United States, children often learn the alphabet through song, and they learn the number of days in each month through rhyme: "Thirty days hath September, / April, June, and November; / All the rest have thirty-one, / Save February, with twenty-eight days clear, / And twenty-nine each leap year." These lessons are easy to remember because of acoustic encoding. We encode the sounds the words make. This is one of the reasons why much of what we teach young children is done through song, rhyme, and rhythm.

Which of the three types of encoding do you think would give you the best memory of verbal information? Some years ago, psychologists Fergus Craik and Endel Tulving (1975) conducted a series of experiments to find out. Participants were given words along with questions about them. The questions required the participants to process the words at one of the three levels. The visual processing questions included such things as asking the participants about the font of the letters. The acoustic processing questions asked the participants about the sound or rhyming of the words, and the semantic processing questions asked the participants about the meaning of the words. After participants were presented with the words and questions, they were given an unexpected recall or recognition task.

Words that had been encoded semantically were better remembered than those encoded visually or acoustically. Semantic encoding involves a deeper level of processing than shallower visual or acoustic encoding. Craik and Tulving concluded that we process verbal information best through semantic encoding, especially if we apply what is called the self-reference effect. The **self-reference effect** is the tendency for an individual to have a better memory for information that relates to oneself in comparison to material that has less personal relevance (Rogers, Kuiper & Kirker, 1977). Could semantic encoding be beneficial to you as you attempt to memorize the concepts in this chapter?



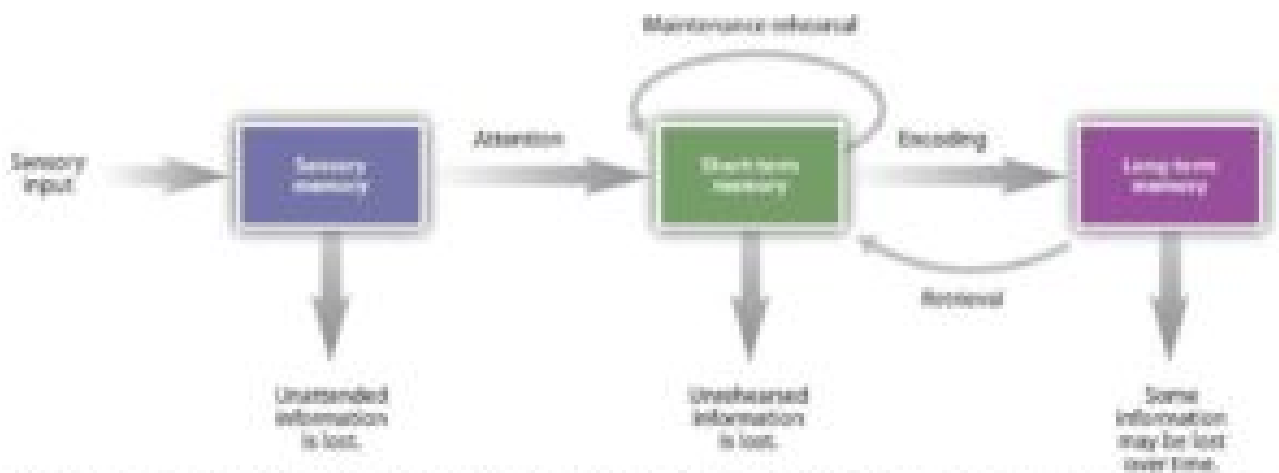
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Video 5.5.1. *Encoding Strategies* discusses various encoding techniques that help us store information in memory.

Storage

Once the information has been encoded, we have to retain it somehow. Our brains take the encoded information and place it in storage. **Storage** is the creation of a permanent record of information.

In order for a memory to go into storage (i.e., long-term memory), it has to pass through three distinct stages: Sensory Memory, Short-Term Memory, and finally, Long-Term Memory. These stages were first proposed by Richard Atkinson and Richard Shiffrin (1968). Their model of human memory, called Atkinson-Shiffrin (A-S) or three-box model, is based on the belief that we process memories in the same way that a computer processes information.



Memory can be characterized in terms of stages—the length of time that information remains available to us.

Source: Adapted from Atkinson, R. C., & Shiffrin, R. M. (1968). Human memory: A proposed system and its control processes. In K. Spence (Ed.), *The psychology of learning and motivation* (Vol. 2). Oxford, England: Academic Press.

Figure 5.5.2. According to the Atkinson-Shiffrin model of memory, information passes through three distinct stages in order for it to be stored in long-term memory.

The three-box is just one model of memory. Others, such as Hitch and Baddeley (1976), have proposed a model where short-term memory itself has different forms. In this model, storing memories in short-term memory is like opening different files on a computer and adding information. The type of short-term memory

(or computer file) depends on the type of information received. There are memories in visual-spatial form, as well as memories of spoken or written material, and they are stored in three short-term systems: a visuospatial sketchpad, an episodic buffer, and a phonological loop. According to Baddeley and Hitch, a central executive part of memory supervises or controls the flow of information to and from the three short-term systems.



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Video 5.5.2. *Information Processing Model: Sensory, Working, and Long Term Memory* explains the three-box model of memory.

Sensory Memory

In the Atkinson-Shiffrin model, stimuli from the environment are processed first in **sensory memory**: storage of brief sensory events, such as sights, sounds, and tastes. It is very brief storage, *essentially long enough for the brain to register and start processing the information*. Sensory memory can hold visual information for about half of a second and auditory information for a few seconds. Unlike other cognitive processes, it seems that sensory memory does not change from infancy (Siegler, 1998). However, without the ability to encode the information, it fades from sensory memory quickly (Papalia et al., 2008). As children and adolescence become more capable of encoding, they can take more advantage of the information available to them in the sensory memory.

We are constantly bombarded with sensory information. We cannot absorb all of it, or even most of it. Moreover, most of it has no impact on our lives. For example, what was your professor wearing the last class period? As long as the professor was dressed appropriately, it does not matter what she was wearing. Sensory information about sights, sounds, smells, and even textures, which we do not view as valuable information, we discard. If we view something as valuable, the information will move into our short-term memory system.

One study of sensory memory researched the significance of valuable information on short-term memory storage. J. R. Stroop discovered a memory phenomenon in the 1930s: you will name a color more easily if it appears printed in that color, which is called the Stroop effect. In other words, the word “red” will be named more quickly, regardless of the color the word appears in, than any word that is colored red. Try an experiment: name the colors of the words you are given in Figure 3.8.3. Do not read the words, but say the color the word is printed in. For example, upon seeing the word “yellow” in green print, you should say “green,” not “yellow.” This experiment is fun, but it is not as easy as it seems.

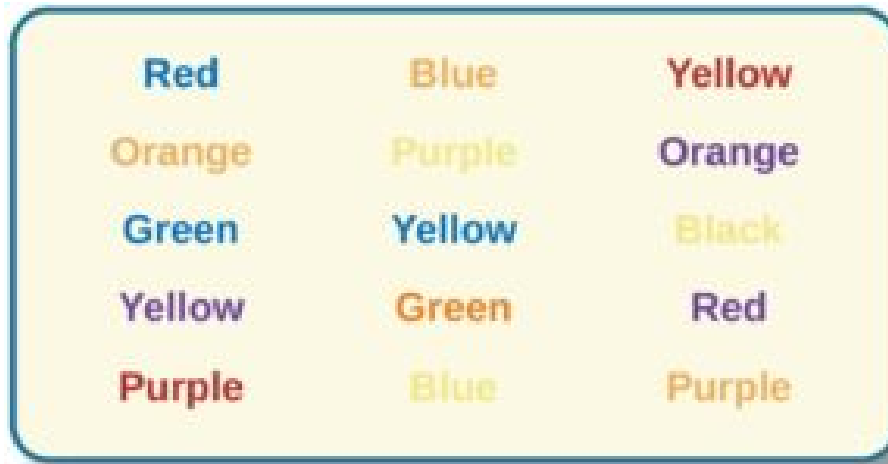


Figure 5.5.3. The Stroop effect describes why it is difficult for us to name a color when the word and the color of the word are different.

Short-Term (Working) Memory

Short-term memory (STM), also called **working memory**, is a temporary storage system that processes incoming sensory memory. Short-term memory is the bridge between information taken in through sensory memory and the more permanent storage of information in long-term memory. Information that is not moved along from short-term memory to long-term memory will be forgotten. Short-term memory is also called working memory because this is the system where the “work” of memory happens. If you are retrieving information from your long-term memory, you are moving it into your working memory, where you can think about that information.

Think of working memory as the information you have displayed on your computer screen—a document, a spreadsheet, or a web page. Then, the information in this memory system goes to long-term memory (you save it to your hard drive), or it is discarded (you delete a document or close a web browser). This step of **rehearsal**, the conscious repetition of information to be remembered, to move STM into long-term memory is called **memory consolidation**.

You may find yourself asking, “How much information can our memory handle at once?” To explore the capacity and duration of your short-term memory, have a partner read the strings of random numbers (Figure 3.8.4) out loud to you, beginning each string by saying, “Ready?” and ending each by saying, “Recall,” at which point you should try to write down the string of numbers from memory.

9754 68259 913825 5316842 86951372 719384273
 6419 67148 648327 5963827 51739826 163875942

Figure 5.5.4. Work through this series of numbers using the recall exercise explained above to determine the longest string of digits that you can store.

Note the longest string at which you got the series correct. For most people, this will be close to 7. Recall is somewhat better for random numbers than for random letters (Jacobs, 1887), and also often slightly better for information we hear (acoustic encoding) rather than see (visual encoding) (Anderson, 1969).

Short-term or working memory often requires conscious effort and adequate use of attention to function effectively. As you read earlier, children struggle with many aspects of attention, and this greatly diminishes their ability to juggle several pieces of information in memory consciously. The capacity of working memory is the amount of information someone can hold in consciousness is smaller in young children than in older children and adults. The typical 5-year-old can hold only a four-digit number active. The typical adult and teenager can hold a seven-digit number active in their short-term memory. The capacity of working memory expands during middle and late childhood, and research has suggested that both an increase in processing speed and the ability to inhibit irrelevant information from entering memory are contributing to the greater efficiency of working memory during this age (de Ribaupierre, 2001). Changes in myelination and synaptic pruning in the cortex are likely behind the increase in processing speed and ability to filter out irrelevant stimuli (Kail, McBride-chang, Ferrer, Cho, & Shu, 2013).

Short-term memory can only hold information for a short period of time, without rehearsal. For a typical adolescent or adult, storage lasts about 20-30 seconds. Older children and adults use mental strategies to aid their memory performance. For instance, simple rote rehearsal may be used to commit information to memory. Young children often do not rehearse unless reminded to do so, and when they do rehearse, they often fail to use clustering rehearsal. In **clustering rehearsal**, the person rehearses previous material while adding in additional information. If a list of words is read out loud to you, you are likely to rehearse each word as you hear it along with any previous words you were given. Young children will repeat each word they hear, but often fail to repeat the prior words in the list. In Schneider, Kron-Sperl, and Hunnerkopf's (2009) longitudinal study of 102 kindergarten children, the majority of children used no strategy to remember information, a finding that was consistent with previous research. As a result, their memory performance was reduced when compared to their abilities as they aged and started to use more effective memory strategies.

STM and Learning

Individuals differ in their memory abilities, and these differences predict academic performance (Peng et al., 2016). Children with learning disabilities in math and reading often have difficulties with working memory (Alloway, 2009). They may struggle with following the directions of an assignment. When a task calls for multiple steps, children with poor working memory may miss steps because they may lose track of where they are in the task. Adults working with such children may need to communicate: using more familiar vocabulary, using shorter sentences, repeating task instructions more frequently, and breaking more complex tasks into smaller, more manageable steps. Some studies have also shown that more intensive training of

working memory strategies, such as chunking, aid in improving the capacity of working memory in children with poor working memory (Alloway, Bibile, & Lau, 2013).

Long-term Memory

Long-term memory (LTM) is the continuous storage of information. Unlike short-term memory, the storage capacity of LTM has no real limits. It encompasses all the things you can remember what happened more than just a few minutes ago to all of the things that you can remember what happened days, weeks, and years ago. In keeping with the computer analogy, the information in your LTM would be like the information you have saved on the hard drive. It is not there on your desktop (your short-term memory), but you can pull up this information when you want it, at least most of the time. Not all long-term memories are strong memories. Some memories can only be recalled through prompts. For example, you might easily recall a fact— “What is the capital of the United States?”—or a procedure—”How do you ride a bike?”—but you might struggle to recall the name of the restaurant you had dinner when you were on vacation in France last summer. A prompt, such as that the restaurant was named after its owner, who spoke to you about your shared interest in soccer, may help you recall the name of the restaurant.

Long-term memory is divided into two types: explicit and implicit (Figure 5.5.5). Understanding the different types is important because a person’s age or particular types of brain trauma or disorders can leave certain types of LTM intact while having disastrous consequences for other types. **Explicit memories**, also called **declarative memories**, are those we consciously try to remember and recall. For example, if you are studying for your chemistry exam, the material you are learning will be part of your explicit memory. (Note: Sometimes, but not always, the terms explicit memory and declarative memory are used interchangeably.)

Implicit memories, also called **non-declarative memories**, are memories that are not part of our consciousness. They are memories formed from behaviors. Implicit memory is also called non-declarative memory.

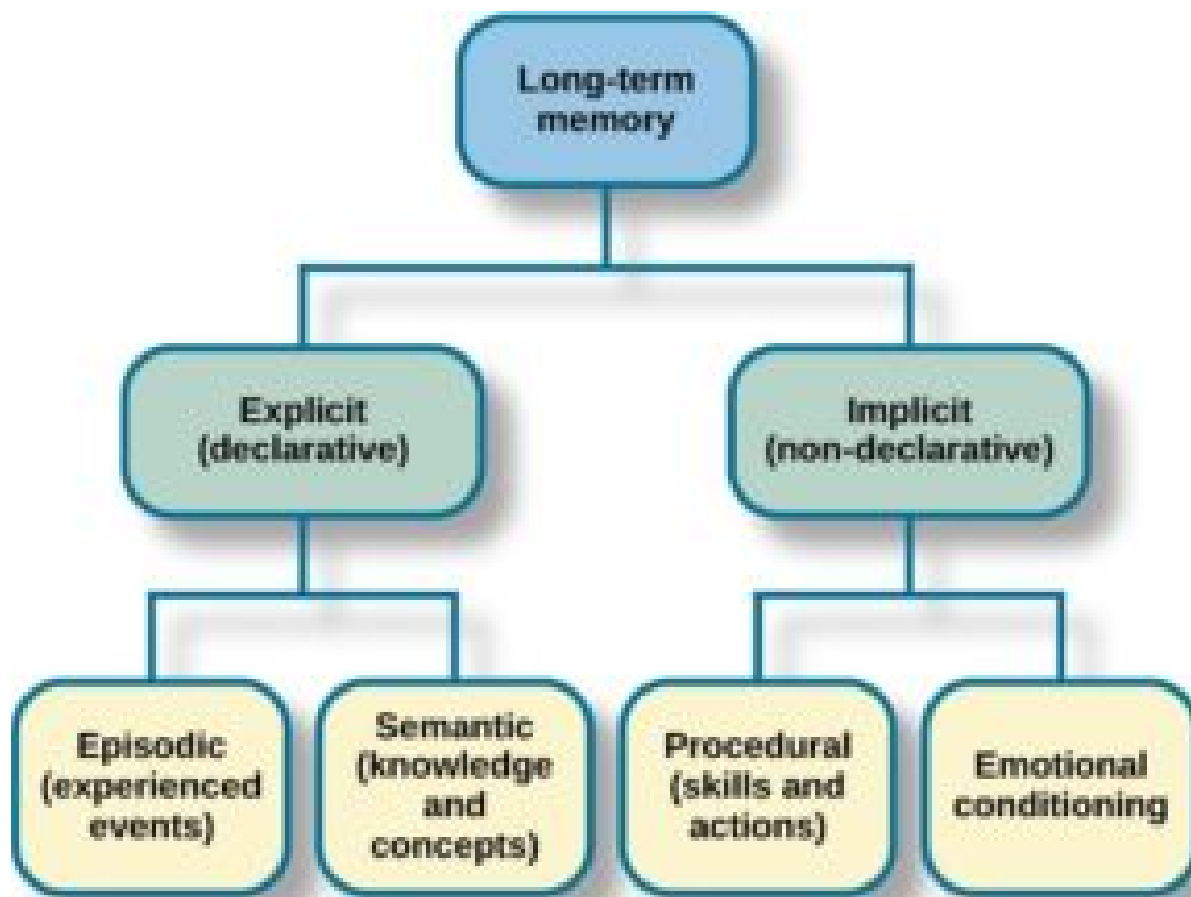


Figure 5.5.5. There are two components of long-term memory: explicit and implicit. Explicit memory includes episodic and semantic memory. Implicit memory includes procedural memory and things learned through conditioning.

Procedural memory is a type of implicit memory: it stores information about how to do things. It is the memory for skilled actions, such as how to brush your teeth, how to drive a car, how to swim the crawl (freestyle) stroke. If you are learning how to swim freestyle, you practice the stroke: how to move your arms, how to turn your head to alternate breathing from side to side, and how to kick your legs. You would practice this many times until you become good at it. Once you learn how to swim freestyle and your body knows how to move through the water, you will never forget how to swim freestyle, even if you do not swim for a couple of decades. Similarly, if you present an accomplished guitarist with a guitar, even if he has not played in a long time, he will still be able to play quite well.

Explicit or declarative memory has to do with the storage of facts and events we personally experienced. Explicit (declarative) memory has two parts: semantic memory and episodic memory. Semantic means having to do with language and knowledge about language. An example would be the question, “what does *argumentative* mean?” Stored in our **semantic memory** is knowledge about words, concepts, and

language-based knowledge and facts. For example, answers to the following questions are stored in your semantic memory:

- Who was the first President of the United States?
- What is democracy?
- What is the longest river in the world?

Episodic memory is information about events we have personally experienced. The concept of episodic memory was first proposed about 40 years ago (Tulving, 1972). Since then, Tulving and others have looked at the scientific evidence and reformulated the theory. Currently, scientists believe that episodic memory is memory about happenings in particular places at particular times, the what, where, and when of an event (Tulving, 2002). It involves recollection of visual imagery as well as the feeling of familiarity (Hassabis & Maguire, 2007).

A component of episodic memory is **autobiographical memory**, or our personal narrative. Adolescents and adults rarely remember events from the first few years of life. We refer to this normal experience as infantile amnesia. In other words, we lack autobiographical memories from our experiences as an infant, toddler, and very young preschooler. Several factors contribute to the emergence of autobiographical memory, including brain maturation, improvements in language, opportunities to talk about experiences with parents and others, the development of theory of mind, and a representation of “self” (Nelson & Fivush, 2004). Two-year-olds do remember fragments of personal experiences, but these are rarely coherent accounts of past events (Nelson & Ross, 1980). Between 2 and 2 ½ years of age, children can provide more information about past experiences. However, these recollections require considerable prodding by adults (Nelson & Fivush, 2004). Over the next few years, children will form more detailed autobiographical memories and engage in more reflection of the past.

Retrieval

So you have worked hard to encode (via effortful processing) and store some important information for your upcoming final exam. How do you get that information back out of storage when you need it? The act of getting information out of memory storage and back into conscious awareness is known as **retrieval**. This process would be similar to finding and opening a paper you had previously saved on your computer’s hard drive. Now it is back on your desktop, and you can work with it again. Our ability to retrieve information from long-term memory is vital to our everyday functioning. You must be able to retrieve information from memory in order to do everything from knowing how to brush your hair and teeth, to driving to work, to knowing how to perform your job once you get there.



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Video 5.5.1. *Retrieval Cues* discusses how cues prompt memory retrieval.

There are three ways to retrieve information from long-term memory storage systems: recall, recognition, and relearning. **Recall** is what we most often think about when we talk about memory retrieval: it means you can access information without cues. For example, you would use recall for an essay test. **Recognition** happens when you identify information that you have previously learned after re-encountering it. It involves a process of comparison. When you take a multiple-choice test, you are relying on recognition to help you choose the correct answer. Here is another example. Let us say you graduated from high school ten years ago, and you have returned to your hometown for your 10-year reunion. You may not be able to recall all of your classmates, but you recognize many of them based on their yearbook photos.



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Video 5.5.2. *Free Recall, Cued Recall, and Recognition* discusses the various ways in which information can be retrieved from long term memory.

The third form of retrieval is **relearning**, and it is just as it sounds. It involves learning information that you previously learned. Whitney took Spanish in high school, but after high school, she did not have the opportunity to speak Spanish. Whitney is now 31, and her company has offered her an opportunity to work in their Mexico City office. In order to prepare herself, she enrolls in a Spanish course at the local community center. She is surprised at how quickly she can pick up the language after not speaking it for 13 years; this is an example of relearning.

38.

INFORMATION PROCESSING: EXECUTIVE FUNCTION

Executive Functions

Changes in our information processing skills also involved changes in executive function. Executive function is generally understood to include three core components: **working memory**, **shifting (also called cognitive flexibility)**, and **inhibition**. These components develop significantly during childhood and adolescence and are critical for academic, social, and emotional functioning.

Working Memory

As discussed earlier, **working memory** refers to the ability to temporarily hold and manipulate information in your mind. For example, if you're asked to solve $13 + 25$ mentally, you might break the task into steps like this:

- $10 + 20 = 30$
- $3 + 5 = 8$
- $30 + 8 = 38$

To arrive at the correct answer, you need to **store intermediate results** (30 and 8) while still actively **processing** the remaining steps. This illustrates how working memory allows us to hold onto partial information while performing mental operations.

Working memory is essential for nearly all everyday activities—from cooking and following instructions to reading comprehension and problem-solving. In the classroom, strong working memory supports learning across subjects, and children with higher working memory capacity often perform better academically.

Shifting

Shifting, or **cognitive flexibility**, refers to the ability to adapt your thinking and switch between different tasks, rules, or mental sets. For instance, moving from solving a math problem to reading a story requires a mental shift in focus and strategy.

Shifting is especially important in school settings, where students must frequently transition between subjects and activities. Even outside of academics, shifting is needed to navigate daily routines—for example, transitioning from a structured classroom environment to the more relaxed mindset of being at home. Strong shifting ability allows individuals to adapt more easily to changing situations and demands.

Inhibition

Inhibition is the ability to suppress automatic, impulsive, or irrelevant responses in favor of goal-directed behavior. A classic example is the **Stroop task**, where you're shown color words (e.g., the word “red” written in blue ink) and asked to name the ink color rather than reading the word. Doing so requires you to **inhibit** the automatic tendency to read the word and instead focus your attention on the color.

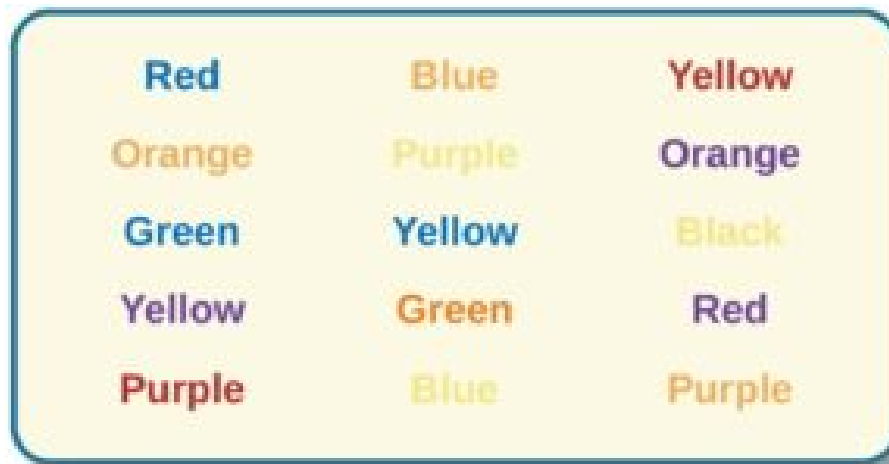


Figure 5.6.1. The Stroop effect is a task that requires inhibition

Inhibition is key to self-control and attention regulation. It helps children wait their turn, resist distractions, and follow rules—all of which are critical for successful learning and social interactions.

Development of Executive Function

These core components of executive function—working memory, shifting, and inhibition—begin to emerge in early childhood and continue to develop throughout childhood and adolescence. Like many other cognitive

abilities, the development of executive function is shaped by both **brain maturation**—particularly in the **prefrontal cortex**—and **environmental experiences**. Research has shown that children raised in cognitively stimulating environments, with **warm and responsive caregivers** who use strategies such as **scaffolding** during problem-solving tasks, tend to develop stronger executive function skills (Fay-Stammbach, Hawes, & Meredith, 2014). For example, scaffolding behaviors have been found to be positively associated with **cognitive flexibility** at age two and **inhibitory control** at age four (Bibok, Carpendale, & Müller, 2009). These findings highlight the importance of both biological and social influences in supporting the development of self-regulation and higher-order thinking skills.

39.

INFORMATION PROCESSING: ORGANIZATION OF THINKING AND METACOGNITION

Organization of Thinking

During middle childhood and adolescence, young people can learn and remember more due to improvements in the way they attend to and store information. As people learn more about the world, they develop more categories for concepts and learn more efficient strategies for storing and retrieving information. One significant reason is that they continue to have more experiences on which to tie new information. In other words, their **knowledge base**, *knowledge in particular areas that makes learning new information easier*, expands (Berger, 2014).

Inductive and Deductive Reasoning

Inductive reasoning emerges in childhood and is a type of reasoning that is sometimes characterized as “bottom-up- processing” in which specific observations, or specific comments from those in authority, may be used to draw general conclusions. However, in inductive reasoning, the veracity of the information that created the general conclusion does not guarantee the accuracy of that conclusion. For instance, a child who has only observed thunder on summer days may conclude that it only thunders in the summer. In contrast, **deductive reasoning**, sometimes called “top-down-processing,” emerges in adolescence. This type of reasoning starts with some overarching principle and, based on this, propose specific conclusions. Deductive reasoning guarantees an accurate conclusion if the premises on which it is based are accurate.

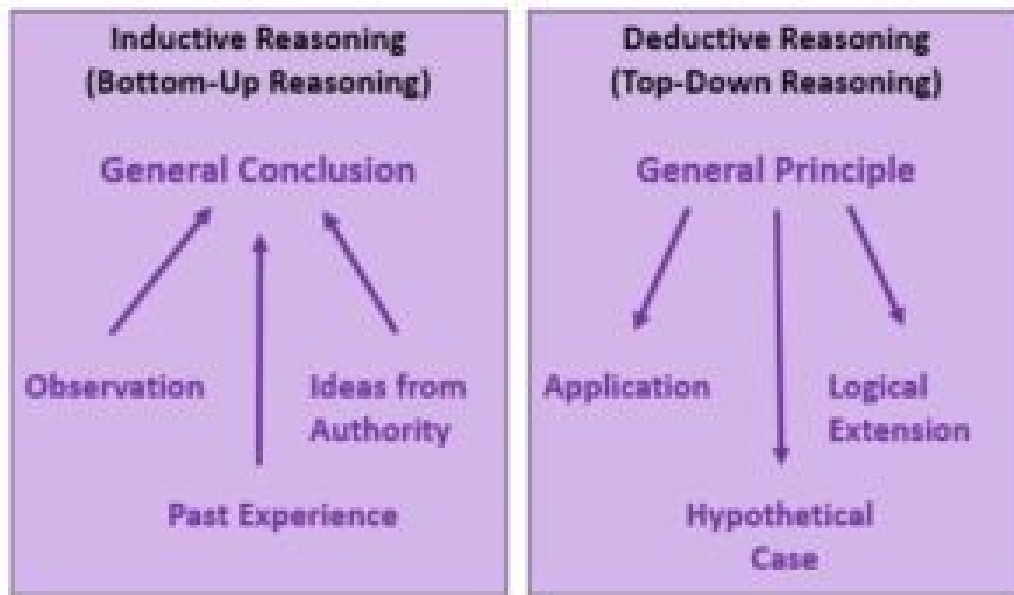


Figure 5.7.1. Models of inductive and deductive reasoning.

Intuitive versus Analytic Thinking

Cognitive psychologists often refer to intuitive and analytic thought as the Dual-Process Model, the notion that humans have two distinct networks for processing information (Albert & Steinberg, 2011). **Intuitive thought** is automatic, unconscious, and fast (Kahneman, 2011), and it is more experiential and emotional. In contrast, **Analytic thought** is deliberate, conscious, and rational. While these systems interact, they are distinct (Kuhn, 2013). Intuitive thought is easier and more commonly used in everyday life. It is also more commonly used by children and teens than by adults (Klaczynski, 2001). The quickness of adolescent thought, along with the maturation of the limbic system, may make teens more prone to emotional, intuitive thinking than adults.

Critical Thinking

There is a debate in U.S. education as to whether schools should teach students what to think or how to think. **Critical thinking**, or a detailed examination of beliefs, courses of action, and evidence, involves teaching children how to think. The purpose of critical thinking is to evaluate information in ways that help us make informed decisions. Critical thinking involves better understanding a problem through gathering, evaluating, and selecting information, and also by considering many possible solutions. Ennis (1987) identified several skills useful in critical thinking. These include: Analyzing arguments, clarifying information, judging the

credibility of a source, making value judgments, and deciding on an action. Metacognition is essential to critical thinking because it allows us to reflect on the information as we make decisions.

Metacognition

As children mature through middle and late childhood and into adolescence, they have a better understanding of how well they are performing a task and the level of difficulty of a task. As they become more realistic about their abilities, they can adapt studying strategies to meet those needs. Young children spend as much time on an unimportant aspect of a problem as they do on the main point, while older children start to learn to prioritize and gauge what is significant and what is not. As a result, they develop metacognition. **Metacognition** refers to the knowledge we have about our thinking and our ability to use this awareness to regulate our cognitive processes.

Bjorklund (2005) describes a developmental progression in the acquisition and use of memory strategies. Such strategies are often lacking in younger children but increase in frequency as children progress through elementary school. Examples of memory strategies include rehearsing information you wish to recall, visualizing and organizing information, creating rhymes, such as “i” before “e” except after “c,” or inventing acronyms, such as “ROYGBIV” to remember the colors of the rainbow. Schneider, Kron-Sperl, and hünnerkopf (2009) reported a steady increase in the use of memory strategies from ages six to ten in their longitudinal study (see table 5.7.1). Moreover, by age ten, many children were using two or more memory strategies to help them recall information. Schneider and colleagues found that there were considerable individual differences at each age in the use of strategies and that children who utilized more strategies had better memory performance than their same-aged peers.

Table 5.7.1. Percentage of children who did not use any memory strategies by age.

Age	Percentage
6	55
7	44
8	25
9	17
10	13

A person may experience three deficiencies in their use of memory strategies. A **mediation deficiency** occurs when a person does not grasp the strategy being taught, and thus, does not benefit from its use. If you do not understand why using an acronym might be helpful, or how to create an acronym, the strategy is not likely to help you. In a **production deficiency**, the person does not spontaneously use a memory strategy and has to be prompted to do so. In this case, the person knows the strategy and is more than capable of using

it, but they fail to “produce” the strategy on their own. For example, a child might know how to make a list but may fail to do this to help them remember what to bring on a family vacation. A **utilization deficiency** refers to a person using an appropriate strategy, but it fails to aid their performance. Utilization deficiency is common in the early stages of learning a new memory strategy. Until the use of the strategy becomes automatic, it may slow down the learning process, as space is taken up in memory by the strategy itself. Initially, children may get frustrated because their memory performance may seem worse when they try to use the new strategy. Once children become more adept at using the strategy, their memory performance will improve. Sodian and Schneider (1999) found that new memory strategies acquired before age 8 often show utilization deficiencies, with there being a gradual improvement in the child’s use of the strategy. In contrast, strategies acquired after this age often followed an “all-or-nothing” principle in which improvement was not gradual, but abrupt.

40.

Intelligence

For nearly a century, educators and psychologists have debated the nature of intelligence, and more specifically whether intelligence is just one broad ability or can take more than one form. Many classical definitions of the concept have tended to define **intelligence** as a single broad ability that allows a person to solve or complete many sorts of tasks, or at least many academic tasks like reading, knowledge of vocabulary, and the solving of logical problems (Garlick, 2002). Other psychologists believe that instead of a single factor, intelligence is a collection of distinct abilities. Still, other psychologists believe that intelligence should be defined in more practical terms. We'll review three perspectives on intelligence, Spearman's *g*, Sternberg's Triarchic Theory of Intelligence, and Gardner's Frame of Mind. Understanding theories of intelligence will help us understand variations in students' intellectual abilities.

British psychologist Charles Spearman believed intelligence consisted of one general factor, called *g*, which could be measured and compared among individuals. Spearman focused on the commonalities among various intellectual abilities and deemphasized what made each unique. There is research evidence of such a global ability, and the idea of general intelligence often fits with society's everyday beliefs about intelligence. Partly for these reasons, an entire mini-industry has grown up around publishing tests of intelligence, academic ability, and academic achievement. Since these tests affect the work of teachers, I return to discussing them later in this book.



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Video 5.8.1. *Intelligence* explains the different definitions of intelligence and the nature/nurture debate in the context of intelligence.

Theories of Intelligence

Psychologists have long debated how to best conceptualize and measure intelligence (Sternberg, 2003). These questions include how many types of intelligence there are, the role of nature versus nurture in intelligence, how intelligence is represented in the brain, and the meaning of group differences in intelligence.



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Video 5.8.2. *Theories of Intelligence* reviews a few of the different theoretical views of intelligence.

General Intelligence Factor (“g”)

From 1904-1905 the French psychologist Alfred Binet (1857–1914) and his colleague Théodore Simon (1872–1961) began working on behalf of the French government to develop a measure that would identify children who would not be successful with the regular school curriculum. The goal was to help teachers better educate these students (Aiken, 1996). Binet and Simon developed what most psychologists today regard as the first intelligence test, which consisted of a wide variety of questions that included the ability to name objects, define words, draw pictures, complete sentences, compare items, and construct sentences.

Binet and Simon (Binet, Simon, & Town, 1915; Siegler, 1992) believed that the questions they asked the children all assessed the basic abilities to understand, reason, and make judgments. It turned out that the correlations among these different types of measures were, in fact, all positive; that is, students who got one item correct were more likely to also get other items correct, even though the questions themselves were very different.

On the basis of these results, the psychologist Charles Spearman (1863–1945) hypothesized that there must be a single underlying construct that all of these items measure. He called the construct that the different abilities and skills measured on intelligence tests have in common the **general intelligence factor (g)**. Virtually all psychologists now believe that there is a generalized intelligence factor, “g,” that relates to abstract thinking and that includes the abilities to acquire knowledge, to reason abstractly, to adapt to novel situations, and to benefit from instruction and experience (Gottfredson, 1997; Sternberg, 2003). People with higher general intelligence learn faster.

Soon after Binet and Simon introduced their test, the American psychologist Lewis Terman at Stanford University (1877–1956) developed an American version of Binet’s test that became known as the *Stanford-Binet intelligence test*. The Stanford-Binet is a measure of general intelligence made up of a wide variety of tasks, including vocabulary, memory for pictures, naming of familiar objects, repeating sentences, and following commands.

Sternberg's Triarchic theory

Although there is general agreement among psychologists that “g” exists, there is also evidence for **specific**

intelligence “s,” *a measure of specific skills in narrow domains*. One empirical result in support of the idea of “s” comes from intelligence tests themselves. Although the different types of questions do correlate with each other, some items correlate more highly with each other than do other items; they form clusters or clumps of intelligences.

One advocate of the idea of multiple intelligences is the psychologist Robert Sternberg. Sternberg has proposed a **Triarchic (three-part) Theory of Intelligence** that proposes that *people may display more or less analytical intelligence, creative intelligence, and practical intelligence*. Sternberg (1985, 2003) argued that traditional intelligence tests assess **analytical intelligence**, *academic problem solving and performing calculations*, but that they do not typically assess **creative intelligence**, *the ability to adapt to new situations and create new ideas*, and/or **practical intelligence**, *the ability to demonstrate common sense and street-smarts*.

As Sternberg proposed, research has found that creativity is not highly correlated with analytical intelligence (Furnham & Bakhtiar, 2008), and exceptionally creative scientists, artists, mathematicians, and engineers do not score higher on intelligence than do their less creative peers (Simonton, 2000). Furthermore, the brain areas that are associated with **convergent thinking**, *thinking that is directed toward finding the correct answer to a given problem*, are different from those associated with **divergent thinking**, *the ability to generate many different ideas or solutions to a single problem* (Tarasova, Volf, & Razoumnikova, 2010). On the other hand, being creative often takes some of the basic abilities measured by “g,” including the abilities to learn from experience, to remember information, and to think abstractly (Bink & Marsh, 2000). Ericsson (1998), Weisberg (2006), Hennessey and Amabile (2016), and Simonton (1992) studied creative people and identified at least five components that are likely to be important for creativity as listed in the table below.

Table 5.8.1. Important components for creativity

Component	Description
Expertise	Creative people have studied and learned about a topic
Imaginative Thinking	Creative people view problems in new and different ways
Risk-Taking	Creative people take on new, but potentially risky approaches
Intrinsic Interest	Creative people take on projects for interest, not money
Working in Creative Environments	The most creative people are supported, aided, and challenged by other people working on similar projects

The last aspect of the triarchic model, practical intelligence, refers primarily to intelligence that cannot be gained from books or formal learning. Practical intelligence represents a type of “street smarts” or “common sense” that is learned from life experiences. Although a number of tests have been devised to measure practical intelligence (Wagner & Sternberg, 1985), research has not found much evidence that practical intelligence is distinct from “g” or that it is predictive of success at any particular tasks (Gottfredson, 2003). Practical

intelligence may include, at least in part, certain abilities that help people perform well at specific jobs, and these abilities may not always be highly correlated with general intelligence (Sternberg et al., 1993).

Gardner's Frame of Mind

Theory of multiple intelligences: another champion of the idea of specific types of intelligences rather than one overall intelligence is the psychologist Howard Gardner (1983). Gardner argued that it would be evolutionarily functional for different people to have different talents and skills, and proposed that there are eight intelligences that can be differentiated from each other. A potential ninth intelligence, existential intelligence, still needs empirical support. Gardner investigated intelligences by focusing on children who were talented in one or more areas and adults who suffered from strokes that compromised some capacities, but not others. Gardner also noted that some evidence for multiple intelligences comes from the abilities of **autistic savants**, *people who score low on intelligence tests overall but who nevertheless may have exceptional skills in a given domain*, such as math, music, art, or in being able to recite statistics in a given sport (Treffert & Wallace, 2004). In addition to brain damage and the existence of savants, Gardner identified these 8 intelligences based on other criteria, including a set developmental history and psychometric findings. See table 5.4 for a list of Gardner's eight specific intelligences.

Table 5.8.2. Howard Gardner's eight specific intelligences

Intelligence	Description
Linguistic	The ability to speak and write well
Logical-mathematical	The ability to use logic and mathematical skills to solve problems
Spatial	The ability to think and reason about objects in three dimensions
Musical	The ability to perform and enjoy music
Kinesthetic (body)	The ability to move the body in sports, dance, or other physical activities
Interpersonal	The ability to understand and interact effectively with others
Intrapersonal	The ability to have insight into the self
Naturalistic	The ability to recognize, identify, and understand animals, plants, and other living things

Source: Adapted from Gardner, H. (1999). *Intelligence Framed: Multiple Intelligences for the 21st Century*. New York, NY: Basic Books.

The idea of multiple intelligences has been influential in the field of education, and teachers have used these ideas to try to teach differently to different students. For instance, to teach math problems to students who have particularly good kinesthetic intelligence, a teacher might encourage the students to move their bodies or hands according to the numbers. On the other hand, some have argued that these “intelligences” sometimes

seem more like “abilities” or “talents” rather than real intelligence. There is no clear conclusion about how many intelligences there are. Our sense of humor, artistic skills, dramatic skills, and so forth also separate intelligences? Furthermore, and again demonstrating the underlying power of a single intelligence, the many different intelligences are, in fact, correlated and thus represent, in part, “g” (Brody, 2003).

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Measuring Intelligence: Standardization and the Intelligence Quotient

The goal of most intelligence tests is to measure “g,” the general intelligence factor. Good intelligence tests are **reliable**, meaning that they are consistent over time, and also demonstrate **validity**, meaning that they actually measure intelligence rather than something else. Because intelligence is such an important individual difference dimension, psychologists have invested substantial effort in creating and improving measures of intelligence, and these tests are now considered the most accurate of all psychological tests. In fact, the ability to accurately assess intelligence is one of the most important contributions of psychology to everyday public life.

Intelligence changes with age. A 3-year-old who could accurately multiply 183 by 39 would certainly be intelligent, but a 25-year-old who could not do so would be seen as unintelligent. Thus understanding intelligence requires that we know the norms or standards in a given population of people at a given age. The **standardization** of a test involves giving it to a large number of people at different ages and computing the average score on the test at each age level.

It is important that intelligence tests be standardized on a regular basis, because the overall level of intelligence in a population may change over time. The **Flynn effect** refers to the observation that scores on intelligence tests worldwide have increased substantially over the past decades (Flynn, 1999). Although the increase varies somewhat from country to country, the average increase is about 3 IQ points every ten years. There are many explanations for the Flynn effect, including better nutrition, increased access to information, and more familiarity with multiple-choice tests (Neisser, 1998). But whether people are actually getting smarter is debatable (Neisser, 1997).

Once the standardization has been accomplished, we have a picture of the average abilities of people at different ages and can calculate a person’s **mental age**, which is the age at which a person is performing intellectually. If we compare the mental age of a person to the person’s chronological age, the result is the **intelligence quotient (IQ)**, a measure of intelligence that is adjusted for age. A simple way to calculate IQ is by using the following formula:

$$\text{IQ} = \text{mental age} \div \text{chronological age} \times 100.$$

Thus a 10-year-old child who does as well as the average 10-year-old child has an IQ of 100 ($10 \div 10 \times 100$), whereas an 8-year-old child who does as well as the average 10-year-old child would have an IQ of 125 ($10 \div 8 \times 100$). Most modern intelligence tests are based on the relative position of a person’s score among people of the

same age, rather than on the basis of this formula, but the idea of an intelligence “ratio” or “quotient” provides a good description of the score’s meaning.

1. Which of the following is the most similar to 1313321?

- A. ACACBC
- B. CACAAC
- C. ABABCA
- D. ACACDC

2. Jenny has some chocolates. She eats two and gives half of the remainder to Lisa. If Lisa has six chocolates how many does Jenny have in the beginning?

- A. 6
- B. 12
- C. 14
- D. 18

3. Which of the following items is not like the others in the list?

duck, raft, canoe, stone, rubber ball

- A. Duck
- B. Canoe
- C. Stone
- D. Rubber ball

4. What do steam and ice have in common?

- A. They can both harm skin.
- B. They are both made from water.
- C. They are both found in the kitchen.
- D. They are both the products of water at extreme temperatures.

Answers: 1) B; 2) C; 3) stone; 4) D is the most sophisticated answer

Figure 5.8.1. Examples of the types of items you might see on an intelligence test.

<https://assessments.lumenlearning.com/assessments/16599>

Wechsler Scales

The **Wechsler Adult Intelligence Scale (WAIS)** is the most widely used intelligence test for adults (Watkins, Campbell, Nieberding, & Hallmark, 1995). The current version of the WAIS, the WAIS-IV, was standardized on 2,200 people ranging from 16 to 90 years of age. It consists of 15 different tasks, each designed to assess intelligence, including working memory, arithmetic ability, spatial ability, and general knowledge about the world. The WAIS-IV yields scores on four domains: verbal, perceptual, working memory, and processing speed. The reliability of the test is high (more than 0.95), and it shows substantial construct validity. The WAIS-IV is correlated highly with other IQ tests such as the Stanford-Binet, as well as with criteria of academic and life success, including college grades, measures of work performance, and occupational level. It also shows significant correlations with measures of everyday functioning among people with intellectual disabilities.



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Video 5.8.3. *Brain vs. Bias* provides an overview of the WAIS & WISC tests, standardization and validity, and IQ performance.

The Wechsler scale has also been adapted for preschool children in the form of the *Wechsler primary and preschool scale of intelligence-fourth edition (WPPSI-IV)* and for older children and adolescents in the form of the *Wechsler intelligence scale for children-fifth edition (WISC-V)*.

Bias in Intelligence Testing

Intelligence tests and psychological definitions of intelligence have been heavily criticized since the 1970s for being biased in favor of Anglo-American, middle-class respondents and for being inadequate tools for measuring non-academic types of intelligence or talent. Intelligence changes with experience, and intelligence quotients or scores do not reflect that ability to change. What is considered smart varies culturally as well, and most intelligence tests do not take this variation into account. For example, in the West, being smart is associated with being quick. A person who answers a question the fastest is seen as the smartest, but in some cultures, being smart is associated with considering an idea thoroughly before giving an answer. A well-thought out, contemplative answer is the best answer.

watch it

Video 5.8.4. Watch this video to learn more about the history behind intelligence testing.



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Extremes of Intelligence: Intellectual Disability and Giftedness

The results of studies assessing the measurement of intelligence show that IQ is distributed in the population in the form of a **Normal Distribution (or bell curve)**, which *is the pattern of scores usually observed in a variable that clusters around its average*. In a normal distribution, the bulk of the scores fall toward the middle, with many fewer scores falling at the extremes. The normal distribution of intelligence shows that on IQ tests, as well as on most other measures, the majority of people cluster around the average (in this case, where IQ = 100), and fewer are either very smart or very dull (see Figure 5.8.2). Because the standard deviation of an IQ test is about 15, this means that about 2% of people score above an IQ of 130, often considered the threshold for giftedness, and about the same percentage score below an IQ of 70, often being considered the threshold for intellectual disability.

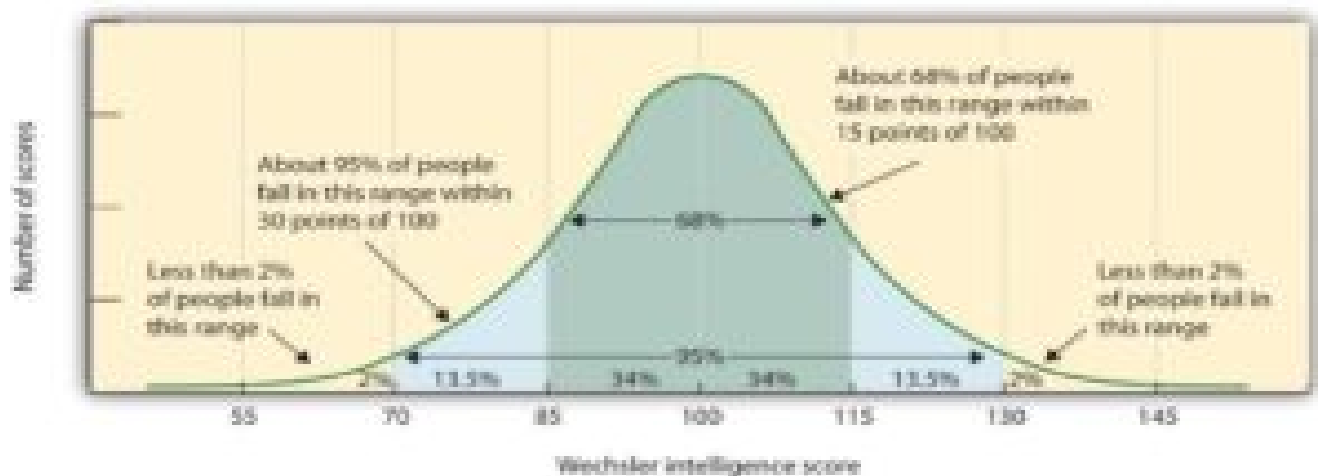


Figure 5.8.2. Distribution of IQ Scores in the General Population The normal distribution of IQ scores in the general population shows that most people have about average intelligence, while very few have extremely high or extremely low intelligence.

People with very low IQ define one end of the distribution of intelligence scores. **Intellectual disability** (or **intellectual developmental disorder**) is assessed based on cognitive capacity (IQ) and adaptive functioning. The severity of the disability is based on adaptive functioning, or how well the person handles everyday life tasks. About 1% of the United States population, most of them males, fulfill the criteria for intellectual developmental disorder, but some children who are given this diagnosis lose the classification as they get older and better learn to function in society. A particular vulnerability of people with low IQ is that they may be taken advantage of by others, and this is an important aspect of the definition of intellectual developmental disorder (Greenspan, Loughlin, & Black, 2001).

Giftedness *refers to those who have an IQ of 130 or higher* (Lally & Valentine-French, 2015). Having an extremely high IQ is clearly less of a problem than having an extremely low IQ, but there may also be challenges to being particularly smart. It is often assumed that schoolchildren who are labeled as “gifted” may have adjustment problems that make it more difficult for them to create social relationships. To study gifted children, Lewis Terman and his colleagues (Oden, 1968) selected about 1,500 high school students who scored in the top 1% on the Stanford-Binet and similar IQ tests (i.e., who had IQs of about 135 or higher), and tracked them for more than seven decades (the children became known as the “termites” and are still being studied today). This study found that these students were not unhealthy or poorly adjusted, but rather were above average in physical health and were taller and heavier than individuals in the general population. The students also had above-average social relationships and were less likely to divorce than the average person (Seagoe, 1975).

Terman’s study also found that many of these students went on to achieve high levels of education and entered prestigious professions, including medicine, law, and science. Of the sample, 7% earned doctoral degrees, 4% earned medical degrees, and 6% earned law degrees. These numbers are all considerably higher than what would have been expected from a more general population. Another study of young adolescents who had even higher IQs found that these students ended up attending graduate school at a rate more than 50 times higher than that in the general population (Lubinski & Benbow, 2006).

As you might expect based on our discussion of intelligence, kids who are gifted have higher scores on general intelligence “g,” but there are also different types of giftedness. Some children are particularly good at math or science, some at automobile repair or carpentry, some at music or art, some at sports or leadership, and so on. There is a lively debate among scholars about whether it is appropriate or beneficial to label some children as “gifted and talented” in school and to provide them with accelerated special classes and other programs that are not available to everyone. Although doing so may help the gifted kids (Colangelo & Assouline, 2009), it also may isolate them from their peers and make such provisions unavailable to those who are not classified as “gifted.”

41.

Glossary

adolescent egocentrism: a characteristic of adolescent thinking that leads young people (ages 10-13) to focus on themselves to the exclusion of others (according to David Elkind)

analytic thought: thought that results from analysis, such as a systematic ranking of pros and cons, risks and consequences, possibilities, and facts. Analytic thought depends on logic and rationality

behavioral decision-making theory: proposes that adolescents and adults both weigh the potential rewards and consequences of an action. However, research has shown that adolescents seem to give more weight to rewards, particularly social rewards than do adults

constructivist perspective: based on the work of Piaget, a quantitative, stage-theory approach. This view hypothesizes that adolescents' cognitive improvement is relatively sudden and drastic, as adolescents learn by acting on their environment and they actively construct knowledge

deductive reasoning: reasoning from a general statement, premise, or principle, through logical steps to figure out (deduce) specifics. Also called top-down processing

divided attention: the ability to pay attention to two or more stimuli at the same time; this ability improves during adolescence

dual process model/dual processing: the notion that two networks exist within the human brain, one for emotional processing of stimuli and one for analytic reasoning

formal operational thought: the fourth and final stage of Piaget's theory of cognitive development, characterized by more systematic logical thinking and by the ability to understand and systematically manipulate abstract concepts

hypothetical thought: reasoning that includes propositions and possibilities that may not reflect reality

imaginary audience: the other people who, in an adolescent's egocentric belief, are watching and taking note of his or her appearance, ideas, and behavior. This belief makes many adolescents very self-conscious

information-processing perspective: derives from the study of artificial intelligence and explains cognitive development in terms of the growth of specific components of the overall process of thinking

intuitive thought: thoughts that arise from an emotion or a hunch, beyond rational explanation, and is influenced by past experiences and cultural assumptions

invincibility fable: an adolescent's egocentric conviction that he or she cannot be overcome or even harmed by anything that might defeat a normal mortal, such as unprotected sex, drug abuse, or high-speed driving

metacognition: refers to "thinking about thinking" and it is relevant in social cognition and results in increased introspection, self-consciousness, and intellectualization during adolescence

mnemonic devices: mental strategies to help learn and remember information more efficiently; improves during adolescence

personal fable: an aspect of adolescent egocentrism characterized by an adolescent's belief that his or her thoughts, feelings, and experiences are unique, more wonderful, or more awful than anyone else's

relativistic thinking: thinking that understands the relative, or situational, nature of circumstances

selective attention: the process by which one focuses on one stimulus while tuning out another; this ability improves during adolescence

42.

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PART VI

LEARNING, ACHIEVEMENT, AND WORK IN ADOLESCENCE

Learning Objectives

- Identify the functions of education
- Explain the symptoms and impact of learning disabilities, autism spectrum disorder, and attention deficit hyperactivity disorder
- Identify factors that impact academic achievement
- Explain the functions of different levels of schooling
- Identify trends in teens working
- Explain career development according to Holland

Remember the ecological systems model that we explored early in the course? This model helps us understand an individual by examining the contexts in which the person lives and the direct and indirect influences on that person's development. School and work become an essential component of a teen's life. Parents, educators, and society contribute to teen's experiences in school and work, as indicated by the ecological systems model through their interaction.

43.

LANGUAGE DEVELOPMENT IN MIDDLE CHILDHOOD

Our vast intelligence also allows us to have language, a system of communication that uses symbols in a regular way to create meaning. As our cognitive abilities develop, our language also evolves, becoming more mature.

Components of Language

Phonemes and Phonology

A **phoneme** is *the smallest unit of sound that makes a meaningful difference in a language* and the study of phonemes is phonology. The word “bit” has three phonemes. In spoken languages, phonemes are produced by the positions and movements of the vocal tract, including our lips, teeth, tongue, vocal cords, and throat, whereas in sign languages phonemes are defined by the shapes and movement of the hands.

There are hundreds of unique phonemes that can be made by human speakers, but most languages only use a small subset of the possibilities. English contains about 45 phonemes, whereas other languages have as few as 15 and others more than 60. The Hawaiian language contains fewer phonemes as it includes only 5 vowels (a, e, i, o, and u) and 7 consonants (h, k, l, m, n, p, and w).

Infants are born able to detect all phonemes, but they lose their ability to do so as they get older; by 10 months of age, a child’s ability to recognize phonemes becomes very similar to that of the adult speakers of the native language. Phonemes that were initially differentiated come to be treated as equivalent (Werker & Tees, 2002).

Morphemes and Morphology

Morphology is the study of words and other meaningful units of languages like suffixes and prefixes.¹ Whereas

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phonemes are the smallest units of sound in language, a **morpheme** is a string of one or more phonemes that makes up the smallest units of meaning in a language. Some morphemes are prefixes and suffixes used to modify other words. For example, the syllable “re-” as in “rewrite” or “repay” means “to do again,” and the suffix “-est” as in “happiest” or “coolest” means “to the maximum.”²

Syntax

Syntax is the study of sentences and phrases, or how people put words into the right order so that they can communicate meaningfully. All languages have underlying rules of syntax, which, along with morphological rules, make up every language’s grammar. An example of syntax coming into play in language is “Eugene walked the dog” versus “The dog walked Eugene.” The order of words is not arbitrary—in order for the sentence to convey the intended meaning, the words must be in a certain order.

Semantics

Semantics, most generally, is about the meaning of sentences. Someone who studies semantics is interested in words and what real-world object or concept those words denote, or point to.³

Pragmatics

The social side of language is expressed through **pragmatics**, or how we communicate effectively and appropriately with others. Examples of pragmatics include turn-taking, staying on topic, volume and tone of voice, and appropriate eye contact.

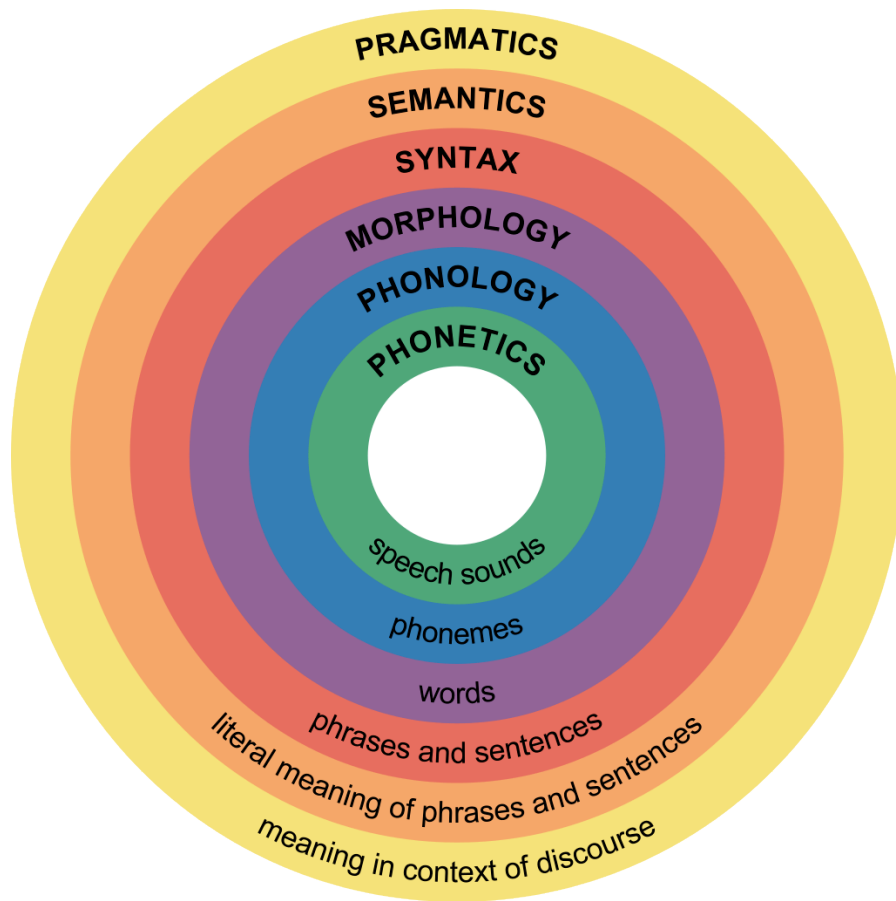
Lastly, words do not possess fixed meanings but change their interpretation as a function of the context in which they are spoken. We use contextual information, *the information surrounding language*, to help us interpret it. Examples of contextual information include our knowledge and nonverbal expressions, such as facial expressions, postures, and gestures. Misunderstandings can easily arise if people are not attentive to contextual information or if some of it is missing, such as it may be in newspaper headlines or in text messages.

4

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Levels of Linguistic Structure ⁵

Language Development in Middle Childhood

Vocabulary

One of the reasons that children can classify objects in so many ways is that they have acquired a vocabulary to do so. By fifth grade, a child's vocabulary has grown to 40,000 words. It grows at a rate that exceeds that of those in early childhood. This language explosion, however, differs from that of younger children because it is facilitated by being able to associate new words with those already known, and because it is accompanied by a more sophisticated understanding of the meanings of a word.

5. Image retrieved from Wikimedia commons and is in the public domain

New Understanding

Those in middle and late childhood are also able to think of objects in less literal ways. For example, if asked for the first word that comes to mind when one hears the word “pizza”, the younger child is likely to say “eat” or some word that describes what is done with a pizza. However, the older child is more likely to place pizza in the appropriate category and say “food”. This sophistication of vocabulary is also evidenced by the fact that older children tell jokes and delight in doing so. They may use jokes that involve plays on words such as “knock-knock” jokes or jokes with punch lines. Young children do not understand play on words and tell “jokes” that are literal or slapstick, such as “A man fell down in the mud! Isn’t that funny?”⁶

Grammar

Because all language obeys a set of combinatory rules, we can communicate an infinite number of concepts. While every language has a different set of rules, all languages do obey rules. These rules are known as grammar. Speakers of a language have internalized the rules and exceptions for that language’s grammar. There are rules for every level of language—word formation (for example, native speakers of English have internalized the general rule that -ed is the ending for past-tense verbs, so even when they encounter a brand-new verb, they automatically know how to put it into past tense); phrase formation (for example, knowing that when you use the verb “buy,” it needs a subject and an object; “She buys” is wrong, but “She buys a gift” is okay); and sentence formation.

Older children are also able to learn new rules of grammar with more flexibility. While younger children are likely to be reluctant to give up saying “I goed there”, older children will learn this rather quickly along with other rules of grammar.

Context

Words do not possess fixed meanings but change their interpretation as a function of the context in which they are spoken. We use contextual information—the information surrounding language—to help us interpret it. Context is how everything within language works together to convey a particular meaning. Context includes tone of voice, body language, and the words being used. Depending on how a person says something, holds his or her body or emphasizes certain points of a sentence, a variety of different messages can be conveyed. For example, the word “awesome,” when said with a big smile, means the person is excited about a situation.

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“Awesome,” said with crossed arms, rolled eyes, and a sarcastic tone which means the person is not thrilled with the situation.⁷

Metalinguistic Awareness

Metalinguistic awareness is defined as the awareness and or understanding of the rules used to govern language. Patrick Hartwell points out how substantial it is for students to develop these capabilities, especially heightened **phonological awareness**: the detection and manipulation of sounds which is a key precursor to literacy. Research by Elizabeth McAllister (1989) has concluded that metalinguistic abilities are associated with cognitive development and is contingent on metalinguistic awareness- which relates to reading skill level, academic success and cultural environment that starts at infancy and continues through preschool. Therefore, an essential aspect to language development is focused on children being *aware* of language and the *components* of language.⁸

Bilingualism

Although monolingual speakers often do not realize it, the majority of children around the world are **bilingual**, meaning that they understand and use two languages (Meyers-Sutton, 2005). Even in the United States, which is a relatively monolingual society, more than 60 million people (21%) speak a language other than English at home (Camarota & Zeigler, 2014; Ryan, 2013). Children who are dual language learners are one of the fastest-growing populations in the United States (Hammer et al., 2014). They make up nearly 30% of children enrolled in early childhood programs, like Head Start. By the time they enter school, they are very heterogeneous in their language and literacy skills, with some children showing delays in being proficient in either one or both languages (Hammer et al., 2014). Hoff (2018) reports language competency is dependent on the quantity, quality, and opportunity to use a language. Dual language learners may hear the same number of words and phrases (quantity) overall, as do monolingual children, but it is split between two languages (Hoff, 2018). Thus, in any single language, they may be exposed to fewer words. They will show higher expressive and receptive skills in the language they come to hear the most.

In addition, the quality of the languages spoken to the child may differ in bilingual versus monolingual families. Place and Hoff (2016) found that for many immigrant children in the United States, most of the English heard was spoken by a non-native speaker of the language. Finally, many children in bilingual

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households will sometimes avoid using the family's heritage language in favor of the majority language (DeHouwer, 2007, Hoff, 2018). A common pattern in Spanish-English homes is for the parents to speak to the child in Spanish, but for the child to respond in English. As a result, children may show little difference in receptive skills between English and Spanish, but better expressive skills in English (Hoff, 2018).

There are several studies that have documented the advantages of learning more than one language in childhood for cognitive **executive function** skills. Bilingual children consistently outperform monolinguals on measures of **inhibitory control**, such as ignoring irrelevant information (Bialystok, Martin & Viswanathan, 2005). Studies also reveal an advantage for bilingual children on measures of verbal working memory (Kaushanskaya, Gross, & Buac, 2014; Yoo & Kaushanskaya, 2012) and non-verbal working memory (Bialystok, 2011). However, it has been reported that among lower SES populations the working memory advantage is not always found (Bonifacci, Giombini, Bellocchi, & Conteno, 2011).

There is also considerable research to show that being bilingual, either as a child or an adult, leads to greater efficiency in the word-learning process. Monolingual children are strongly influenced by the **mutual-exclusivity bias**, the assumption that an object has only a single name (Kaushanskaya, Gross, & Buac, 2014). For example, a child who has previously learned the word car may be confused when this object is referred to as an automobile or sedan. Research shows that monolingual children find it easier to learn the name of a new object than to acquire a new name for a previously labeled object. In contrast, bilingual children and adults show little difficulty with either task (Kaushanskaya & Marian, 2009). This finding may be explained by the experience bilinguals have in translating between languages when referring to familiar objects.⁹



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Students who are fluent in two languages have a cognitive advantage.¹⁰

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44.

Education

Often, we use the terms “schooling” and “education” interchangeably, but they have different meanings. Education is not solely concerned with the basic academic concepts that a student learns in the classroom. Education is a social institution through which a society’s children are taught basic academic knowledge, learning skills, and cultural norms. Societies also educate their children outside of the school system in matters of everyday practical living. These two types of learning are referred to as formal education and informal education.

Formal education describes the learning of academic facts and concepts through a formal curriculum. Arising from the tutelage of ancient Greek thinkers, centuries of scholars have examined topics through formalized methods of learning. Education in earlier times was only available to the higher classes; they had the means for access to scholarly materials, plus the luxury of leisure time that could be used for learning. The Industrial Revolution and its accompanying social changes made education more accessible to the general population. Many families in the emerging middle class found new opportunities for schooling.

The modern U.S. educational system is the result of this progression. Today, basic education is considered a right and responsibility for all citizens. Expectations of this system focus on formal education, with curricula and testing designed to ensure that students learn the facts and concepts that society believes are basic knowledge.

In contrast, **informal education** describes learning about cultural values, norms, and expected behaviors by participating in society. This type of learning occurs both through the formal education system and at home. Our earliest learning experiences generally happen via parents, relatives, and others in our community. Through informal education, we learn how to dress for different occasions, how to perform regular life routines like shopping for and preparing food, and how to keep our bodies clean.

The Functions of Schools

Schools teach us far more than reading, writing, and arithmetic. They also socialize us to cultural norms and expectations of our society. These cultural expectations and norms are reinforced by our teachers, our textbooks, and our classmates. (For students outside the dominant culture, this aspect of the education system can pose significant challenges.) You might remember learning your multiplication tables in second grade and also learning the social rules of taking turns on the swings at recess. You might recall learning about the U.S. Constitution in an American Government course as well as learning when and how to speak up in class.

Schools are one of the more important social institutions in a society and contribute to two kinds of

functions: manifest (or primary) functions, which are the intended and visible functions of education; and latent (or secondary) functions, which are the hidden and unintended functions.

Manifest Functions of Education

There are several major manifest functions associated with education. The first is socialization. Beginning in preschool and kindergarten, students are taught to practice various societal roles. The French sociologist Émile Durkheim (1858–1917), who established the academic discipline of sociology, characterized schools as “socialization agencies that teach children how to get along with others and prepare them for adult economic roles” (Durkheim 1898). Indeed, it seems that schools have taken on this responsibility in full.

This socialization also involves learning the rules and norms of society as a whole. In the early days of compulsory education, students learned the dominant culture. Today, since the culture of the United States is increasingly diverse, students may learn a variety of cultural norms, not only that of the dominant culture.

School systems in the United States also transmit the core values of the nation through manifest functions like social control. One of the roles of schools is to teach students conformity to law and respect for authority. Obviously, such respect, given to teachers and administrators, will help a student navigate the school environment. This function also prepares students to enter the workplace and the world at large, where they will continue to be subject to people who have authority over them. The fulfillment of this function rests primarily with classroom teachers and instructors who are with students all day.

Education also provides one of the major methods used by people for upward social mobility. This function is referred to as **social placement**. College and graduate schools are viewed as vehicles for moving students closer to the careers that will give them the financial freedom and security they seek. As a result, college students are often more motivated to study areas that they believe will be advantageous on the social ladder. A student might value business courses over a class in Victorian poetry because she sees business class as a stronger vehicle for financial success.

Latent Functions of Education

Education also fulfills latent functions. As you well know, much goes on in a school that has little to do with formal education. For example, you might notice an attractive fellow student when he gives a particularly interesting answer in class—catching up with him and making a date speaks to the latent function of courtship fulfilled by exposure to a peer group in the educational setting.

The educational setting introduces students to social networks that might last for years and can help people find jobs after their schooling is complete. Of course, with social media such as Facebook and LinkedIn, these networks are easier than ever to maintain. Another latent function is the ability to work with others in small groups, a skill that is transferable to a workplace, and that might not be learned in a homeschool setting.

The educational system, especially as experienced on university campuses, has traditionally provided a place

for students to learn about various social issues. There is ample opportunity for social and political advocacy, as well as the ability to develop tolerance to the many views represented on campus. In 2011, the Occupy Wall Street movement swept across college campuses all over the United States, leading to demonstrations in which diverse groups of students were unified with the purpose of changing the political climate of the country.

Another role of schools, according to functionalist theory, is that of **sorting** or classifying students based on academic merit or potential. The most capable students are identified early in schools through testing and classroom achievements. Such students are placed in accelerated programs in anticipation of successful college attendance.

School, particularly in recent years, is taking over some of the functions that were traditionally undertaken by family. Society relies on schools to teach about human sexuality as well as basic skills such as budgeting and job applications—topics that at one time, were addressed by the family.

Table 6.2.1. Manifest and Latent Functions of Education	
Manifest Functions: Openly stated functions with intended goals	Latent Functions: Hidden, unstated functions with sometimes unintended consequences
Socialization	Courtship
Transmission of culture	Social networks
Social control	Working in groups
Social placement	Creation of generation gap
Cultural innovation	Political and social integration

Student Diversity

Diversity means different things to different people, and it can be understood differently in different environments. In the context of education, diversity generally refers to the differences among people in the school environment by race, culture, ethnicity, religion, socioeconomic status, sexual orientation, abilities, opinions, political views, and in other ways. We also think about how groups interact with one another, given their differences (even if they’re just perceived differences.) How do diverse populations experience and explore their relationships?

Students have, of course, always been diverse. Whether in the past or in the present day, students learn at unique paces, show unique personalities, and learn in their own ways. In recent decades, though, the forms and extent of diversity have increased. Now more than ever, teachers are likely to serve students from diverse language backgrounds, to serve more individuals with special educational needs, and to teach students either younger and older than in the past.

Cultural and Language Diversity

Take the case of language diversity. In the United States, about 40 million people, or 14% of the population are Hispanic. About 20% of these speak primarily Spanish, and approximately another 50% speak only limited English (United States Census Bureau, 2005). The educators responsible for the children in this group need to accommodate instruction to these students somehow. Part of the solution, of course, is to arrange specialized second-language teachers and classes. But adjustment must also happen in “regular” classrooms of various grade levels and subjects. Classroom teachers must learn to communicate with students whose English language background is limited, at the same time that the students themselves are learning to use English more fluently (Pitt, 2005). Since relatively few teachers are Hispanic or speak fluent Spanish, the adjustments can sometimes be a challenge. Teachers must plan lessons and tasks that students actually understand. At the same time, teachers must also keep track of the major learning goals of the curriculum.

- Cultures and ethnic groups differ not only in languages but also in how languages are used. Since some of the patterns differ from those typical of modern classrooms, they can create misunderstandings between teachers and students (Cazden, 2001; Rogers et al., 2005). Consider these examples:
- In some cultures, it is considered polite or even intelligent not to speak unless you have something truly important to say. Chitchat, or talk that simply affirms a personal tie between people, is considered immature or intrusive (Minami, 2002). In a classroom, this habit can make it easier for a child to learn not to interrupt others, but it can also make the child seem unfriendly.
- Eye contact varies by culture. In many African American and Latin American communities, it is considered appropriate and respectful for a child not to look directly at an adult who is speaking to them (Torres-Guzman, 2015). In classrooms, however, teachers often expect a lot of eye contact (as in “I want all eyes on me!”) and may be tempted to construe a lack of eye contact as a sign of indifference or disrespect.
- Social distance varies by culture. In some cultures, it is common to stand relatively close when having a conversation; in others, it is more customary to stand relatively far apart (Beaulieu, 2004). Problems may happen when a teacher and student prefer different social distances. A student who expects a closer distance than does the teacher may seem overly familiar or intrusive, whereas one who expects a longer distance may seem overly formal or hesitant.
- Wait time varies by culture. Wait time is the gap between the end of one person’s comment or question and the next person’s reply or answer. In some cultures, wait time is relatively long, as long as three or four seconds (Tharp & Gallimore, 1989). In others, it is a negative gap, meaning that it is acceptable, even expected, for a person to interrupt before the end of the previous comment. In classrooms, the wait time is customarily about one second; after that, the teacher is likely to move on to another question or to another student. A student who habitually expects a wait time longer than one second may seem hesitant, and not be given many chances to speak. A student who expects a negative wait time, on the

other hand, may seem overeager or even rude.

- In most non-Anglo cultures, questions are intended to gain information, and it is assumed that a person asking the question truly does not have the information requested (Rogoff, 2003). In most classrooms, however, teachers regularly ask test questions, which are questions to which the teacher already knows the answer, and that simply assess whether a student knows the answer as well (Macbeth, 2003). The question: “How much is $2 + 2$?” for example, is a test question. If the student is not aware of this purpose, he or she may become confused, or think that the teacher is surprisingly ignorant. Worse yet, the student may feel that the teacher is trying deliberately to shame the student by revealing the student’s ignorance or incompetence to others.
- Preference for activities that are cooperative rather than competitive. Many activities in school are competitive, even when teachers try to de-emphasize the competition. Once past the first year or second year of school, students often become attentive to who receives the highest marks on an assignment, for example, or who is the best athlete at various sports or whose contributions to class discussions gets the most verbal recognition from the teacher (Johnson & Johnson, 1998). A teacher deliberately organizes important activities or assignments competitively, as in “Let’s see who finishes the math sheet first.” Classroom life can then become explicitly competitive, and the competitive atmosphere can interfere with cultivating supportive relationships among students or between students and the teacher (Cohen, 2004). For students who give priority to these relationships, competition can seem confusing at best and threatening at worst. A student may wonder, “What sort of sharing or helping with answers is allowed?” The answer to this question may be different depending on the cultural background of the student and teacher. What the student views as cooperative sharing may be seen by the teacher as laziness, freeloading, or even cheating.

Diversity of Special Educational Needs

Another factor making classrooms increasingly diverse has been the inclusion of students with disabilities into classrooms with non-disabled peers. In the United States, the trend began in the 1970s, but accelerated with the passage of the Individuals with Disabilities Education Act in 1975, and again when the Act was amended in 2004 (United States Government Printing Office, 2005). The law guarantees free, appropriate education for children with disabilities of any kind—whether the impairment is physical, cognitive, emotional, or behavioral. The laws also recognize that such students need special supports in order to learn or function effectively in a classroom with non-disabled peers, so they provide for special services (for example, teaching assistants) and procedures for making individualized educational plans for students with disabilities.

Children with Disabilities: Legislation

Since the 1970s, political and social attitudes have moved increasingly toward including people with disabilities

into a wide variety of “regular” activities. In the United States, the shift is illustrated clearly in the Federal legislation that was enacted during this time. Three major laws were passed that guaranteed the rights of persons with disabilities, and of children and students with disabilities in particular. The third law has had the biggest impact on education.

Rehabilitation Act of 1973, Section 504: This law, the first of its kind, required that individuals with disabilities be accommodated in any program or activity that receives Federal funding (PL 93-112, 1973). Although this law was not intended specifically for education, in practice, it has protected students’ rights in some extra-curricular activities (for older students) and in some child care or after-school care programs (for younger students). If those programs receive Federal funding of any kind, the programs are not allowed to exclude children or youths with disabilities, and they have to find reasonable ways to accommodate the individuals’ disabilities.

Americans with Disabilities Act of 1990 (or ADA): This legislation also prohibited discrimination on the basis of disability, just as Section 504 of the Rehabilitation Act had done (PL 101-336, 1990). Although the ADA also applies to all people (not just to students), its provisions are more specific and “stronger” than those of Section 504. In particular, ADA extends to all employment and jobs, not just those receiving Federal funding. It also specifically requires accommodations to be made in public facilities such as with buses, restrooms, and telephones. ADA legislation is therefore responsible for some of the “minor” renovations in schools that you may have noticed in recent years, like wheelchair-accessible doors, ramps, and restrooms, and public telephones with volume controls.

Individuals with Disabilities Education Act (or IDEA): As its name implied, this legislation was more focused on education than either Section 504 or ADA. It was first passed in 1975 and has been amended several times since, including most recently in 2004 (PL 108-446, 2004). To be eligible under IDEA, a student must be adversely affected in oral expression, listening comprehension, written expression, basic reading skills, reading fluency skills, reading comprehension, mathematics calculation, or mathematics problem-solving. In its current form, the law guarantees the following rights related to education for anyone with a disability from birth to age 21. The first two influence schooling in general, but the last three affect the work of classroom teachers rather directly:

- *Free, appropriate education:* An individual or an individual’s family should not have to pay for education simply because the individual has a disability, and the educational program should be truly educational; i.e., not merely care-taking or babysitting the person.
- *Due process:* In case of disagreements between an individual with a disability and the schools or other professionals, there must be procedures for resolving the disagreements that are fair and accessible to all parties, including the person himself or herself or the person’s representative.
- *Fair evaluation of performance in spite of disability:* Tests or other evaluations should not assume test-taking skills that a person with a disability cannot reasonably be expected to have, such as holding a pencil, hearing or seeing questions, working quickly, or understanding and speaking orally. Evaluation

procedures should be modified to allow for these differences. This provision of the law applies both to evaluations made by teachers and to school-wide or “high-stakes” testing programs.

- *Education in the “least restrictive environment”*: Education for someone with a disability should provide as many educational opportunities and options for the person as possible, both in the short term and in the long term. In practice, this requirement has meant including students in regular classrooms and school activities as much as possible, though often not totally.
- *An individualized educational program*: Given that every disability is unique, instructional planning for a person with a disability should be unique or individualized as well. In practice, this provision has led to classroom teachers planning individualized programs jointly with other professionals (like reading specialists, psychologists, or medical personnel) as part of a team.

Students with Disabilities

Students are eligible for the rights afforded under the IDEA if their academic achievement is being impacted due to a learning disability, autism spectrum disorder, visual or hearing impairment, orthopedic impairment, traumatic brain injury, speech or language impairment, intellectual disability, emotional disturbance, or other health impairment.

Learning Disabilities

A **Learning Disability** (or LD) is a specific impairment of academic learning that interferes with a specific aspect of schoolwork, and that reduces a student’s academic performance significantly. An LD shows itself as a major discrepancy between a student’s ability and some feature of achievement: The student may be delayed in reading, writing, listening, speaking, or doing mathematics, but not in all of these at once. A learning problem is not considered a learning disability if it stems from physical, sensory, or motor handicaps, or from generalized intellectual impairment. It is also not an LD if the learning problem really reflects the challenges of learning English as a second language. Genuine LDs are the learning problems left over after these other possibilities are accounted for or excluded. Typically, a student with an LD has not been helped by teachers’ ordinary efforts to assist the student when he or she falls behind academically, though what counts as an “ordinary effort,” of course, differs among teachers, schools, and students. Most importantly, though, an LD relates to a fairly specific area of academic learning. A student may be able to read and compute well enough, for example, but not be able to write. LDs are by far the most common form of special educational need, accounting for half of all students with special needs in the United States and anywhere from 5 to 20% of all students, depending on how the numbers are estimated (United States Department of Education, 2005; Ysseldyke & Bielinski, 2002). Students with LDs are so common, in fact, that most teachers regularly encounter at least one per class in any given school year, regardless of the grade level they teach.

These difficulties are identified in school because this is when children’s academic abilities are being tested, compared, and measured. Consequently, once academic testing is no longer essential in that person’s life (as when they are working rather than going to school), these disabilities may no longer be noticed or relevant, depending on the person’s job and the extent of the disability.



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Video 6.2.1. *Learning Disability* explains the different types of disabilities and their symptoms.

Dyslexia is one of the most commonly diagnosed disabilities and involves having difficulty in the area of reading. This diagnosis is used for a number of reading difficulties. Common characteristics are difficulty with phonological processing, which includes the manipulation of sounds, spelling, and rapid visual/verbal processing. Additionally, the child may reverse letters, have difficulty reading from left to right, or may have problems associating letters with sounds. It appears to be rooted in neurological problems involving the parts of the brain active in recognizing letters, verbally responding, or being able to manipulate sounds. Recent studies have identified a number of genes that are linked to developing dyslexia (National Institute of Neurological Disorders and Stroke, 2016). Treatment typically involves altering teaching methods to accommodate the person's particular problematic area.

Dysgraphia, a writing disability, is often associated with dyslexia (McBride, 2019). There are different types of dysgraphia, including phonological dysgraphia, when the person cannot sound out words and write them phonetically. Orthographic dysgraphia is demonstrated by those individuals who can spell regularly spelled words, but not irregularly spelled ones. Some individuals with dysgraphia experience difficulties in motor control and experience trouble forming letters when using a pen or pencil.

Dyscalculia refers to problems in math. Cowan and Powell (2014) identified several terms used when describing difficulties in mathematics, including dyscalculia, mathematical learning disability, and mathematics disorder. All three terms refer to students with average intelligence who exhibit poor academic performance in mathematics. When evaluating a group of third graders, Cowan and Powell (2014) found that children with dyscalculia demonstrated problems with working memory, reasoning, processing speed, and oral language, all of which are referred to as domain-general factors. Additionally, problems with multi-digit skills, including number system knowledge, were also exhibited.



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Video 6.2.2. Explanation of dyscalculia

Autism Spectrum Disorder

Autism spectrum disorder (ASD) is probably the most misunderstood and puzzling of

neurodevelopmental disorders. Children with this disorder show signs of significant disturbances in three main areas: (a) deficits in social interaction, (b) deficits in communication, and (c) repetitive patterns of behavior or interests. These disturbances appear early in life and cause serious impairments in functioning (APA, 2013). The child with autism spectrum disorder might exhibit deficits in social interaction by not initiating conversations with other children or turning their head away when spoken to. These children do not make eye contact with others and seem to prefer playing alone rather than with others. In a certain sense, it is almost as though these individuals live in a personal and isolated social world others are simply not privy to or able to penetrate. Communication deficits can range from a complete lack of speech to one-word responses (e.g., saying “Yes” or “No” when replying to questions or statements that require additional elaboration), echoed speech (e.g., parroting what another person says, either immediately or several hours or even days later), to difficulty maintaining a conversation because of an inability to reciprocate others’ comments. These deficits can also include problems in using and understanding nonverbal cues (e.g., facial expressions, gestures, and postures) that facilitate normal communication.

Repetitive patterns of behavior or interests can be exhibited in a number of ways. The child might engage in stereotyped, repetitive movements (rocking, head-banging, or repeatedly dropping an object and then picking it up), or she might show great distress at small changes in routine or the environment. For example, the child might throw a temper tantrum if an object is not in its proper place or if a regularly- scheduled activity is rescheduled. In some cases, the person with autism spectrum disorder might show highly restricted and fixated interests that appear to be abnormal in their intensity. For instance, the child might learn and memorize every detail about something, even though doing so serves no apparent purpose. Importantly, autism spectrum disorder is not the same thing as intellectual disability, although these two conditions can occur together. The DSM-5 specifies that the symptoms of autism spectrum disorder are not caused or explained by intellectual disability.

The qualifier “spectrum” in autism spectrum disorder is used to indicate that individuals with the disorder can show a range, or spectrum, of symptoms that vary in their magnitude and severity: Some severe, others less severe. The previous edition of the DSM included a diagnosis of Asperger’s disorder, generally recognized as a less severe form of autistic disorder; individuals diagnosed with Asperger’s disorder were described as having average or high intelligence and strong vocabulary, but exhibiting impairments in social interaction and social communication, such as talking only about their special interests (Wing, Gould, & Gillberg, 2011). However, because research has failed to demonstrate that Asperger’s disorder differs qualitatively from autistic disorder, the DSM-5 does not include it. Some individuals with autism spectrum disorder, particularly those with better language and intellectual skills, can live and work independently as adults. However, most do not because the symptoms remain sufficient to cause serious impairment in many realms of life (APA, 2013).

Currently, estimates indicate that nearly 1 in 88 children in the United States have autism spectrum disorder; the disorder is 5 times more common in boys (1 out of 54) than girls (1 out of 252) (CDC, 2012). Rates of autistic spectrum disorder have increased dramatically since the 1980s. For example, California saw an increase of 273% in reported cases from 1987 through 1998 (Byrd, 2002); between 2000 and 2008, the rate of autism

diagnoses in the United States increased 78% (CDC, 2012). Although it is difficult to interpret this increase, it is possible that the rise in prevalence is the result of the broadening of the diagnosis, increased efforts to identify cases in the community, and greater awareness and acceptance of the diagnosis. In addition, mental health professionals are now more knowledgeable about autism spectrum disorder and are better equipped to make the diagnosis, even in subtle cases (Novella, 2008).

The exact causes of autism spectrum disorder remain unknown despite massive research efforts over the last two decades (Meek, Lemery-Chalfant, Jahromi, & Valiente, 2013). Autism appears to be strongly influenced by genetics, as identical twins show concordance rates of 60%–90%, whereas concordance rates for fraternal twins and siblings are 5%–10% (Autism Genome Project Consortium, 2007). Many different genes and gene mutations have been implicated in autism (Meek et al., 2013). Among the genes involved are those important in the formation of synaptic circuits that facilitate communication between different areas of the brain (Gauthier et al., 2011). A number of environmental factors are also thought to be associated with increased risk for autism spectrum disorder, at least in part, because they contribute to new mutations. These factors include exposure to pollutants, such as plant emissions and mercury, urban versus rural residence, and vitamin D deficiency (Kinney, Barch, Chayka, Napoleon, & Munir, 2009).

There is no scientific evidence that a link exists between autism and vaccinations (Hughes, 2007). Indeed, a recent study compared the vaccination histories of 256 children with autism spectrum disorder with that of 752 control children across three time periods during their first two years of life (birth to 3 months, birth to 7 months, and birth to 2 years) (DeStefano, Price, & Weintraub, 2013). At the time of the study, the children were between 6 and 13 years old, and their prior vaccination records were obtained. Because vaccines contain immunogens (substances that fight infections), the investigators examined medical records to see how many immunogens children received to determine if those children who received more immunogens were at greater risk for developing autism spectrum disorder. The results of this study clearly demonstrated that the number of immunogens from vaccines received during the first two years of life was not at all related to the development of autism spectrum disorder.

Other Health Impairment

Attention Deficit Hyperactivity Disorder (ADHD) is not a learning disability but can be considered as an ‘other health impairment’ if it is impacting academic performance. Individuals with ADHD show a constant pattern of inattention and/or hyperactive and impulsive behavior that interferes with normal functioning (American Psychological Association (APA), 2013). Some of the signs of inattention include great difficulty with, and avoidance of, tasks that require sustained attention (such as conversations or reading), failure to follow instructions (often resulting in failure to complete schoolwork and other duties), disorganization (difficulty keeping things in order, poor time management, sloppy and messy work), lack of attention to detail, becoming easily distracted, and forgetfulness. Hyperactivity is characterized by excessive movement, and includes fidgeting or squirming, leaving one’s seat in situations when remaining seated is expected, having trouble sitting still (e.g., in a restaurant), running about and climbing on things, blurting

out responses before another person's question or statement has been completed, difficulty waiting one's turn for something, and interrupting and intruding on others. Frequently, the hyperactive child comes across as noisy and boisterous. The child's behavior is hasty, impulsive, and seems to occur without much forethought; these characteristics may explain why adolescents and young adults diagnosed with ADHD receive more traffic tickets and have more automobile accidents than do others their age (Thompson, Molina, Pelham, & Gnagy, 2007).

ADHD occurs in about 5% of children (APA, 2013). On average, boys are 3 times more likely to have ADHD than are girls; however, such findings might reflect the greater propensity of boys to engage in aggressive and antisocial behavior and thus incur a greater likelihood of being referred to psychological clinics (Barkley, 2006). Children with ADHD face severe academic and social challenges. Compared to their non-ADHD counterparts, children with ADHD have lower grades and standardized test scores and higher rates of expulsion, grade retention, and dropping out (Loe & Feldman, 2007). They also are less well-liked and more often rejected by their peers (Hoza et al., 2005).



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Video 6.2.3 Symptoms of ADHD

Is the prevalence rate of ADHD increasing? Many people believe that the rates of ADHD have increased in recent years, and there is evidence to support this contention. In a recent study, investigators found that the parent-reported prevalence of ADHD among children (4–17 years old) in the United States increased by 22% during a 4-year period, from 7.8% in 2003 to 9.5% in 2007 (CDC, 2010). ADHD may be over-diagnosed by doctors who are too quick to medicate children as behavior treatment. There is also greater awareness of ADHD now than in the past. Nearly everyone has heard of ADHD, and most parents and teachers are aware of its key symptoms. Thus, parents may be quick to take their children to a doctor if they believe their child possesses these symptoms, or teachers may be more likely now than in the past to notice the symptoms and refer the child for evaluation.

ADHD can persist into adolescence and adulthood (Barkley, Fischer, Smallish, & Fletcher, 2002). A recent study found that 29.3% of adults who had been diagnosed with ADHD decades earlier still showed symptoms (Barbaresi et al., 2013). Somewhat troubling, this study also reported that nearly 81% of those whose ADHD persisted into adulthood had experienced at least one other comorbid disorder, compared to 47% of those whose ADHD did not persist. Additional concerns when an adult has ADHD include worse educational attainment, lower socioeconomic status, less likely to be employed, more likely to be divorced, and more likely to have non-alcohol-related substance abuse problems (Klein et al., 2012).

Family and twin studies indicate that genetics play a significant role in the development of ADHD. Burt

(2009), in a review of 26 studies, reported that the median rate of concordance for identical twins was .66, whereas the median concordance rate for fraternal twins was .20. The specific genes involved in ADHD are thought to include at least two that are important in the regulation of the neurotransmitter dopamine (Gizer, Ficks, & Waldman, 2009), suggesting that dopamine may be important in ADHD. Indeed, medications used in the treatment of ADHD, such as methylphenidate (Ritalin) and amphetamine with dextroamphetamine (Adderall), have stimulant qualities and elevate dopamine activity. People with ADHD show less dopamine activity in key regions of the brain, especially those associated with motivation and reward (Volkow et al., 2009), which provides support to the theory that dopamine deficits may be a vital factor in the development of this disorder (Swanson et al., 2007).

Brain imaging studies have shown that children with ADHD exhibit abnormalities in their frontal lobes, an area in which dopamine is in abundance. Compared to children without ADHD, those with ADHD appear to have smaller frontal lobe volume, and they show less frontal lobe activation when performing mental tasks. Recall that one of the functions of the frontal lobes is to inhibit our behavior. Thus, abnormalities in this region may go a long way toward explaining the hyperactive, uncontrolled behavior of ADHD.

Many parents attribute their child's hyperactivity to sugar. A statistical review of 16 studies, however, concluded that sugar consumption has no effect at all on the behavioral and cognitive performance of children (Wolraich, Wilson, & White, 1995). Additionally, although food additives have been shown to increase hyperactivity in non-ADHD children, the effect is rather small (McCann et al., 2007). Numerous studies, however, have shown a significant relationship between exposure to nicotine in cigarette smoke during the prenatal period and ADHD (Linnet et al., 2003). Maternal smoking during pregnancy is associated with the development of more severe symptoms of the disorder (Thakur et al., 2013).

Recommended treatment for ADHD includes behavioral interventions, cognitive behavioral therapy, parent and teacher education, recreational programs, and lifestyle changes, such as getting more sleep (Clay, 2013). For some children, medication is prescribed. Parents are often concerned that stimulant medication may result in their child acquiring a substance use disorder. However, research using longitudinal studies has demonstrated that children diagnosed with ADHD who received pharmacological treatment had a lower risk for substance abuse problems than those children who did not receive medication (Wilens, Faraone, Biederman, & Gunawardene, 2003). The risk of substance abuse problems appears to be even greater for those with ADHD who are un-medicated and also exhibit antisocial tendencies (Marshall & Molina, 2006).

45.

Academic Achievement

Academic achievement during adolescence is predicted by interpersonal (e.g., parental engagement in adolescents' education), intrapersonal (e.g., intrinsic motivation), and institutional (e.g., school quality) factors. Academic achievement is important in its own right as a marker of positive adjustment during adolescence but also because academic achievement sets the stage for future educational and occupational opportunities. The most serious consequence of school failure, particularly dropping out of school, is the high risk of unemployment or underemployment in adulthood that follows. High achievement can set the stage for college or future vocational training and opportunities.

Parental Engagement with School

As children become more independent in managing their academic roles, they still may need parental support to be successful in school. Parents vary in their level of involvement with their children's schools. Teachers often complain that they have difficulty getting parents to participate in their child's education and devise a variety of techniques to keep parents in touch with daily and overall progress. For example, parents may be required to sign a behavior chart each evening to be returned to school or may be given information about the school's events through websites and newsletters. There are other factors that need to be considered when looking at parental involvement. To explore these, first, ask yourself if all parents who enter the school with concerns about their child be received in the same way?

Horvat (2004) found that teachers seek a particular type of involvement from particular types of parents. While teachers thought they were open and neutral in their responses to parental involvement, in reality, teachers were most receptive to support, praise, and agreement coming from parents who were most similar in race and social class with the teachers. Parents who criticized the school or its policies were less likely to be given a voice. Parents who have higher levels of income, occupational status, and other qualities favored in society have **family capital**. This is a form of power that can be used to improve a child's education. Parents who do not have these qualities may find it more difficult to be effectively involved. The authors suggest that teachers closely examine their biases against parents. Schools may also need to examine their ability to dialogue with parents about school policies in more open ways. Any efforts to improve effective parental involvement should address these concerns.

Peer influence

During middle childhood and adolescence, children's social relationships begin to shift significantly. They become more independent and start to spend more time with peers, who begin to play a larger role in shaping their behavior, emotions, and even academic performance. As expected, peer relationships have a meaningful impact on children's learning and academic achievement.

One way peers influence learning is through **small group learning**, which is widely recognized as an effective approach to promote both academic development and socialization. Research shows that children who participate in collaborative group work not only perform better academically but also report more positive emotions toward learning activities (Gillies, 2003). Working in groups allows children to share ideas, build off each other's knowledge, and develop important communication and teamwork skills.

In addition to group settings, children may also engage in one-on-one peer interactions where they support each other in completing academic tasks. Interestingly, research has found that it is often the higher-achieving student who initiates help-seeking behaviors—contrary to the common assumption that lower-performing students are always the ones asking for help. These peer interactions provide opportunities for both parties to reinforce their understanding: the helper consolidates knowledge through teaching, and the learner benefits from personalized support.

Motivation to Achieve

Motivation varies and is demonstrated by the kind of goals that students set for themselves, and by how the goals support students' academic achievement. As you might suspect, some goals encourage academic achievement more than others, but even motives that do not concern academics explicitly tend to affect learning indirectly.

What kinds of achievement goals do students hold? Some students' goal may be to learn the material as well as possible because they find it interesting and because they believe it will be useful later—this is a mastery goal because they want primarily to learn or master the material. Other students are concerned less about learning the content than about getting high grades in the course—this is a performance goal because the focus is primarily on looking successful by performing well in the eyes of peers and teachers. There may also be students that are primarily concerned about avoiding a poor or failing mark—this is a performance-avoidance goal because they are not really as concerned about learning or about competitive success but is simply intending to avoid failure.

As you might imagine, mastery, performance, and performance-avoidance goals often are not experienced in pure form, but in combinations. If you play the clarinet in the school band, you might want to improve your technique simply because you enjoy playing as well as possible—essentially a mastery orientation. But you might also want to look talented in the eyes of classmates—a performance orientation. Another part of what

you may wish, at least privately, is to avoid looking like a complete failure at playing the clarinet. One of these motives may predominate over the others, but they all may be present.

Mastery goals tend to be associated with the enjoyment of learning the material at hand, and in this sense, represent an outcome that teachers often seek for students. By definition, therefore, they are a form of **intrinsic motivation**. As such, mastery goals have been found to be better than performance goals at sustaining students' interest in a subject. In one review of research about learning goals, for example, students with primarily mastery orientations toward a course they were taking not only tended to express greater interest in the course, but also continued to express interest well beyond the official end of the course, and to enroll in further courses in the same subject (Harackiewicz, et al., 2002; Wolters, 2004).



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Video 6.3.1. *Instincts, Arousal, Needs, and Drives: Drive-Reduction and Cognitive Theories* explain some intrinsic motivations.

Performance goals, on the other hand, imply **extrinsic motivation** and tend to show the mixed effects of this orientation. A positive effect is that students with a performance orientation do tend to get higher grades than those who express primarily a mastery orientation. The advantage in grades occurs both in the short term (with individual assignments) and in the long term (with overall grade point average when graduating). But there is evidence that performance-oriented students do not actually learn the material as deeply or permanently as students who are more mastery-oriented (Midgley, Kaplan, & Middleton, 2001). A possible reason is that measures of performance—such as test scores—often reward relatively shallow memorization of information and therefore guide performance-oriented students away from processing the information thoughtfully or deeply. Another possible reason is that a performance orientation, by focusing on gaining recognition as the best among peers, encourages competition among peers. Giving and receiving help from classmates is thus not in the self-interest of a performance-oriented student, and the resulting isolation limits the student's learning.



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Video 6.3.2. *Incentive Theory* explains extrinsic motivation.

As we mentioned, failure-avoidant goals by nature undermine academic achievement. Often they are a

negative byproduct of the competitiveness of performance goals (Urdu, 2004). If a teacher (and sometimes also fellow students) put too much emphasis on being the best in the class, and if interest in learning the material as such therefore suffers, then some students may decide that success is beyond their reach or may not be desirable in any case. The alternative—simply avoiding failure—may seem wiser as well as more feasible. Once a student adopts this attitude, he or she may underachieve more or less deliberately, doing only the minimum work necessary to avoid looking foolish or to avoid serious conflict with the teacher. Avoiding failure in this way is an example of **self-handicapping**—deliberate actions and choices that reduce the chances of success. Students may self-handicap in a number of ways; in addition to not working hard, they may procrastinate about completing assignments, for example, or set goals that are unrealistically high.

The World of School

Remember Urie Brofenbrenner's **ecological systems model** we learned about when we first examined theories of development? This model helps us understand an individual by examining the contexts in which the person lives and the direct and indirect influences on that person's life. School becomes a very important component of children's lives during middle childhood and one way to understand children is to look at the world of school. We have discussed educational policies that impact the curriculum in schools above. Now let's focus on the school experience from the standpoint of the student, the teacher and parent relationship, and the cultural messages or hidden curriculum taught in schools in the United States.

Parents vary in their level of involvement with their children's schools. Teachers often complain that they have difficulty getting parents to participate in their child's education and devise a variety of techniques to keep parents in touch with daily and overall progress. For example, parents may be required to sign a behavior chart each evening to be returned to school or may be given information about the school's events through websites and newsletters. There are other factors that need to be considered when looking at parental involvement. To explore these, first, ask yourself if all parents who enter the school with concerns about their child are received in the same way? If not, what would make a teacher or principal more likely to consider the parent's concerns? What would make this less likely?

Lareau and Horvat (2004) found that teachers seek a particular type of involvement from particular types of parents. While teachers thought they were open and neutral in their responses to parental involvement, in reality, teachers were most receptive to support, praise, and agreement coming from parents who were most similar in race and social class with the teachers. Parents who criticized the school or its policies were less likely to be given a voice. Parents who have higher levels of income, occupational status, and other qualities favored in society have family capital. This is a form of power that can be used to improve a child's education. Parents who do not have these qualities may find it more difficult to be effectively involved. Lareau and Horvat (2004) offer three cases of African-American parents who were each concerned about discrimination in the schools. Despite evidence that such discrimination existed, their children's white, middle-class teachers were

reluctant to address the situation directly. Note the variation in approaches and outcomes for these three families:

- The Williams family: This working-class, African-American couple, a minister and a hairstylist, voiced direct complaints about discrimination in the schools. Their claims were thought to undermine the authority of the school and as a result, their daughter was kept in a lower reading class. However, her grade was boosted to “avoid a scene” and the parents were not told of this grade change.
- The Irving family: This middle-class, African-American couple was concerned that the school was discriminating against black students. They fought against it without using direct confrontation by staying actively involved in their daughter’s schooling and making frequent visits to the school to make sure that discrimination could not occur. They also talked with other African-American teachers and parents about their concerns.
- Ms. Caldron: This poor, single-parent was concerned about discrimination in the school. She was a recovering drug addict receiving welfare. She did not discuss her concerns with other parents because she did not know the other parents and did not monitor her child’s progress or get involved with the school. She felt that her concerns would not receive attention. She requested spelling lists from the teacher on several occasions but did not receive them. The teacher complained that Ms. Caldron did not sign forms that were sent home for her signature.

Working within the system without direct confrontation seemed to yield better results for the Irvings, although the issue of discrimination in the school was not completely addressed. Ms. Caldron was the least involved and felt powerless in the school setting. Her lack of family capital and lack of knowledge and confidence keep her from addressing her concerns with the teachers. What do you think would happen if she directly addressed the teachers and complained about discrimination? Chances are, she would be dismissed as undermining the authority of the school, just as the Masons, and might be thought to lack credibility because of her poverty and drug addiction. The authors of this study suggest that teachers closely examine their biases against parents. Schools may also need to examine their ability to dialogue with parents about school policies in more open ways. What happens when parents have concerns over school policy or view student problems as arising from flaws in the educational system? How are parents who are critical of the school treated? And are their children treated fairly even when the school is being criticized? Certainly, any efforts to improve effective parental involvement should address these concerns.

Student Perspectives

Imagine being a 3rd-grader for one day in public school. What would the daily routine involve? To what extent would the institution dictate the activities of the day and how much of the day would you spend on those activities? Would you always be on task? What would you say if someone asked you how your day went? or

“What happened in school today?” Chances are, you would be more inclined to talk about whom you sat at lunch with or who brought a puppy to class than to describe how fractions are added.

Ethnographer and Professor of Education Peter McLaren (1999) describes the student’s typical day as filled with constrictive and unnecessary ritual that has a damaging effect on the desire to learn. Students move between various states as they negotiate the demands of the school system and their own personal interests. The majority of the day (298 minutes) takes place in the **student state**. This state is one in which the student focuses on a task or tries to stay focused on a task, is passive, compliant, and often frustrated. Long pauses before getting out the next book or finding materials sometimes indicate that frustration. The **street corner state** is one in which the child is playful, energetic, excited, and expresses personal opinions, feelings, and beliefs. About 66 minutes a day take place in this state. Children try to maximize this by going slowly to assemblies or when getting a hall pass-always eager to say ‘hello’ to a friend or to wave if one of their classmates is in another room. This is the state in which friends talk and play. In fact, teachers sometimes reward students with opportunities to move freely or to talk or to be themselves. But when students initiate the street corner state on their own, they risk losing recess time, getting extra homework, or being ridiculed in front of their peers. The **home state** occurs when parents or siblings visit the school. Children in this state may enjoy special privileges such as going home early or being exempt from certain school rules in the mother’s presence, or it can be difficult if the parent is there to discuss trouble at school with a staff member. The **sanctity state** is a time in which the child is contemplative, quiet, or prayerful. Typically the sanctity state is a very brief part of the day.

Since students seem to have so much enthusiasm and energy in street corner states, what would happen if the student and street corner states could be combined? Would it be possible? Many educators feel concerned about the level of stress children experience in school. Some stress can be attributed to problems in friendship. And some can be a result of the emphasis on testing and grades, as reflected in a Newsweek article entitled “The New First Grade: Are Kids Getting Pushed Too Fast Too Soon?” (Tyre, 2006). This article reports concerns of a principal who worries that students begin to burn out as early as 3rd grade. In the book, *The Homework Myth: Why Our Kids Get Too Much of a Bad Thing*, Kohn (2006) argues that neither research nor experience support claims that homework reinforces learning and builds responsibility. Why do schools assign homework so frequently? A look at cultural influences on education may provide some answers.

<https://assessments.lumenlearning.com/assessments/16601>

Cultural Influences

Another way to examine the world of school is to look at the cultural values, concepts, behaviors and roles that are part of the school experience but are not part of the formal curriculum. These are part of the **hidden curriculum** but are nevertheless very powerful messages. The hidden curriculum includes ideas of patriotism, gender roles, the ranking of occupations and classes, competition, and other values. Teachers, counselors, and other students specify and make known what is considered appropriate for girls and boys. The gender

curriculum continues into high school, college, and professional school. Students learn a ranking system of occupations and social classes as well. Students in gifted programs or those moving toward college preparation classes may be viewed as superior to those who are receiving tutoring.

Gracy (2004) suggests that cultural training occurs early. Kindergarten is an “academic boot camp” in which students are prepared for their future student role—that of complying with an adult imposed structure and routine designed to produce docile, obedient, children who do not question meaningless tasks that will become so much of their future lives as students. A typical day is filled with structure, ritual, and routine that allows for little creativity or direct, hands-on contact. “Kindergarten, therefore, can be seen as preparing children not only for participation in the bureaucratic organization of large modern school systems, but also for the large-scale occupational bureaucracies of modern society.” (Gracy, 2004, p. 148)

Emphasizing math and reading in preschool and kindergarten classes is becoming more common in some school districts. It is not without controversy, however. Some suggest that emphasis is warranted in order to help students learn math and reading skills that will be needed throughout school and in the world of work. This will also help school districts improve their accountability through test performance. Others argue that learning is becoming too structured to be enjoyable or effective and that students are being taught only to focus on performance and test-taking. Students learn student incivility or lack of sincere concern for politeness and consideration of others is taught in kindergarten through 12th grades through the “what is on the test” mentality modeled by teachers. Students are taught to accept routinized, meaningless information in order to perform well on tests. And they are experiencing the stress felt by teachers and school districts focused on test scores and taught that their worth comes from their test scores. Genuine interest, an appreciation of the process of learning, and valuing others are important components of success in the workplace that are not part of the hidden curriculum in today’s schools.

What Happened to No child Left Behind?

Children’s academic performance is often measured with the use of standardized tests.

Achievement tests are used to measure what a child has already learned. Achievement tests are often used as measures of teaching effectiveness within a school setting and as a method to make schools that receive tax dollars (such as public schools, charter schools, and private schools that receive vouchers) accountable to the government for their performance. In 2001, President Bush signed into effect Public Law 107-110, better known as the **No Child Left Behind Act** mandating that schools administer achievement tests to students and publish those results so that parents have an idea of their children’s performance. Additionally, the government would have information on the gaps in educational achievement between children from various social class, racial, and ethnic groups. Schools that showed significant gaps in these levels of performance were mandated

to work toward narrowing these gaps. Educators criticized the policy for focusing too much on testing as the only indication of student performance. Target goals were considered unrealistic and set by the federal government rather than individual states. Because these requirements became increasingly unworkable for schools, changes to the law were requested. On December 12, 2015 President Obama signed into law the **Every Student Succeeds Act** (ESSA). This law is state driven and focuses on expanding educational opportunities and improving student outcomes, including in the areas of high school graduation, drop-out rates, and college attendance.

Elementary School

Children spend more of their waking hours in school than in any other context (Eccles & Roeser, 2011). In the U.S., **primary education** typically refers to grades 1 through 6, following preschool and kindergarten, and preceding secondary and tertiary education. The transition into elementary school marks an important shift in a child's social identity, as they take on the role of being a "school kid." This transition can be complex, involving a variety of physical, cognitive, social, and emotional changes (Ahtola, 2013).

Teachers play a critical role in supporting children through this period. Research has shown that the more support activities teachers implement during both preschool and elementary school, the more rapidly children's skills develop. However, children mature at different rates. Those who are developmentally behind often experience more stress than their peers, which can negatively affect their academic performance and motivation (U.S. Department of Education, 2008). These students are also at higher risk for long-term academic struggles, including lower grades, decreased motivation, and an increased likelihood of dropping out (U.S. Department of Education, 2008).

For many students, the early years of elementary school are marked by a slowing in academic progress and a potential rise in behavioral challenges, underscoring the need for early and sustained support from educators and caregivers.

Middle School

Adolescents spend more waking time in school than in any other context (Eccles & Roeser, 2011). **Secondary education** is traditionally grades 7-12 and denotes the school years after elementary school (known as primary education) and before college or university (known as tertiary education). Adolescents who complete primary education (learning to read and write) and continue on through secondary and tertiary education tend to also have better health, wealth, and family life (Rieff, 1998). Because the average age of puberty has declined over the years, **middle schools** were created for grades 5 or 6 through 8 as a way to distinguish between early

adolescence and late adolescence, especially because these adolescents differ biologically, cognitively, and emotionally and definitely have different needs.

Transition to middle school is stressful, and the transition is often complex. When students transition from elementary to middle school, many students are undergoing physical, intellectual, social, emotional, and moral changes (Parker, 2013). Research suggests that early adolescence is an especially sensitive developmental period (McGill et al., 2012). Some students mature faster than others. Students who are developmentally behind typically experience more stress than their counterparts (U.S. Department of Education, 2008). Consequently, they may earn lower grades and display decreased academic motivation, which may increase the rate of dropping out of school (U.S. Department of Education, 2008). For many middle school students, academic achievement slows down, and behavioral problems can increase.

While young adolescents seem to desire independence, they also need protection, security, and structure (Brighton, 2007). Baly, Cornell, & Lovegrove (2014) found that bullying increases in middle school, particularly in the first year. Additionally, unlike elementary school, concerns arise regarding procedural changes. Just when egocentrism is at its height, students are worried about being thrown into an environment of independence and responsibility. They are expected to get to and from classes on their own, manage time wisely, organize and keep up with materials for multiple classes, be responsible for all classwork and homework from multiple teachers, and at the same time develop and maintain a social life (Meece & Eccles, 2010). Students are trying to build new friendships and maintain the ones they already have. As noted throughout this module, peer acceptance is particularly important.

Another aspect to consider is technology. Typically, adolescents get their first cell phone at about age 11, and, simultaneously, they are also expected to research items on the Internet. Social media use and texting increase dramatically, and the research finds both harm and benefits to this use (Coyne et al., 2018).

High School

As adolescents enter high school, their continued cognitive development allows them to think abstractly, analytically, hypothetically, and logically, which is all formal operational thought. High school emphasizes formal thinking in an attempt to prepare graduates for college where analysis is required. Overall, high school graduation rates in the United States have increased steadily over the past decade, reaching 83.2% in 2016 after four years in high school (Gewertz, 2017). Additionally, many students in the United States do attend college. Unfortunately, though, about half of those who go to college leave without a degree (Kena et al., 2016). Those that do earn a degree, however, do make more money and have an easier time finding employment. The key here is understanding adolescent development and supporting teens in making decisions about college or alternatives to college after high school.

High School Dropouts

The **status dropout rate** refers to the percentage of 16 to 24 year-olds who are not enrolled in school and do not have high school credentials (either a diploma or an equivalency credential such as a General Educational Development [GED] certificate). The dropout rate is based on sample surveys of the civilian, noninstitutionalized population, which excludes persons in prisons, persons in the military, and other persons not living in households. The dropout rate among high school students has declined from a rate of 12% in 1990 to 7% in 2013 (U.S. Department of Education, 2015). The rate is lower for Whites than for Blacks, and the rates for both Whites and Blacks are lower than the rate for Hispanics. However, the gap between Whites, Blacks, and Hispanics have narrowed (see Figure 7.2).

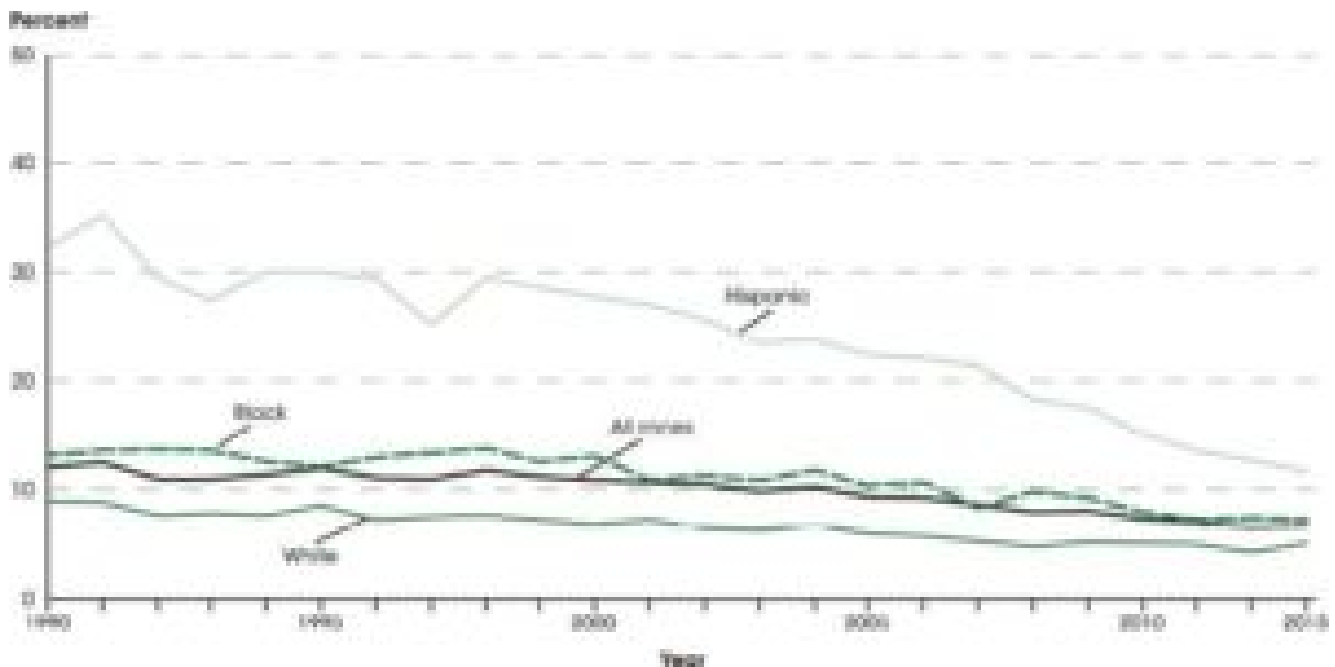


Figure: 6.3.1. Status dropout rates of 16- through 24-year-olds, by race/ethnicity: 1990 through 2013

The dropout rate for males in 1990 was 12%, where it stayed until 2000. Thereafter the rate dropped to 7% in 2013. The dropout rate for females in 1990 was 12%, where it dropped to 10% in 2000, and in 2013 was 6%. From 1997 until 2012, the rate for males was appreciably higher than for females, while in 2013, the gender difference was minimal (U.S. Department of Education, 2015).

Higher Education

College is an important aspect of the lives of many young adults in the United States, with 36% of 18 to 24-year-olds (NCHEMS, 2016b). The rate of college attainment has grown more slowly in the United States than in a number of other nations in recent years (OCED, 2014). This may be due to the fact that the cost of attaining a degree is higher in the U.S. than in many other nations.

As the level of State funding of higher education declines, students are finding that the cost of college is outpacing the rate of inflation, Pell grant increases, and other student scholarships. One in six students are funding their education through personal loans (TICAS, 2015). With the rising costs of higher education, various news headlines have asked if a college education is worth the cost. One way to address this question is in terms of the earning potential associated with various levels of educational achievement. In 2016, the average earnings for Americans 25 and older with only a high school education was \$35,615, compared with \$65,482 for those with a bachelor's degree, compared with \$92,525 for those with more advanced degrees. Average earnings vary by gender, race, and geographical location in the United States (U.S. Census Bureau, 2017).

Nonetheless, the benefits both to the individual and society outweigh the initial costs. As can be seen in Figure 7.3, those in America with the most advanced degrees earn the highest income and have the lowest unemployment.

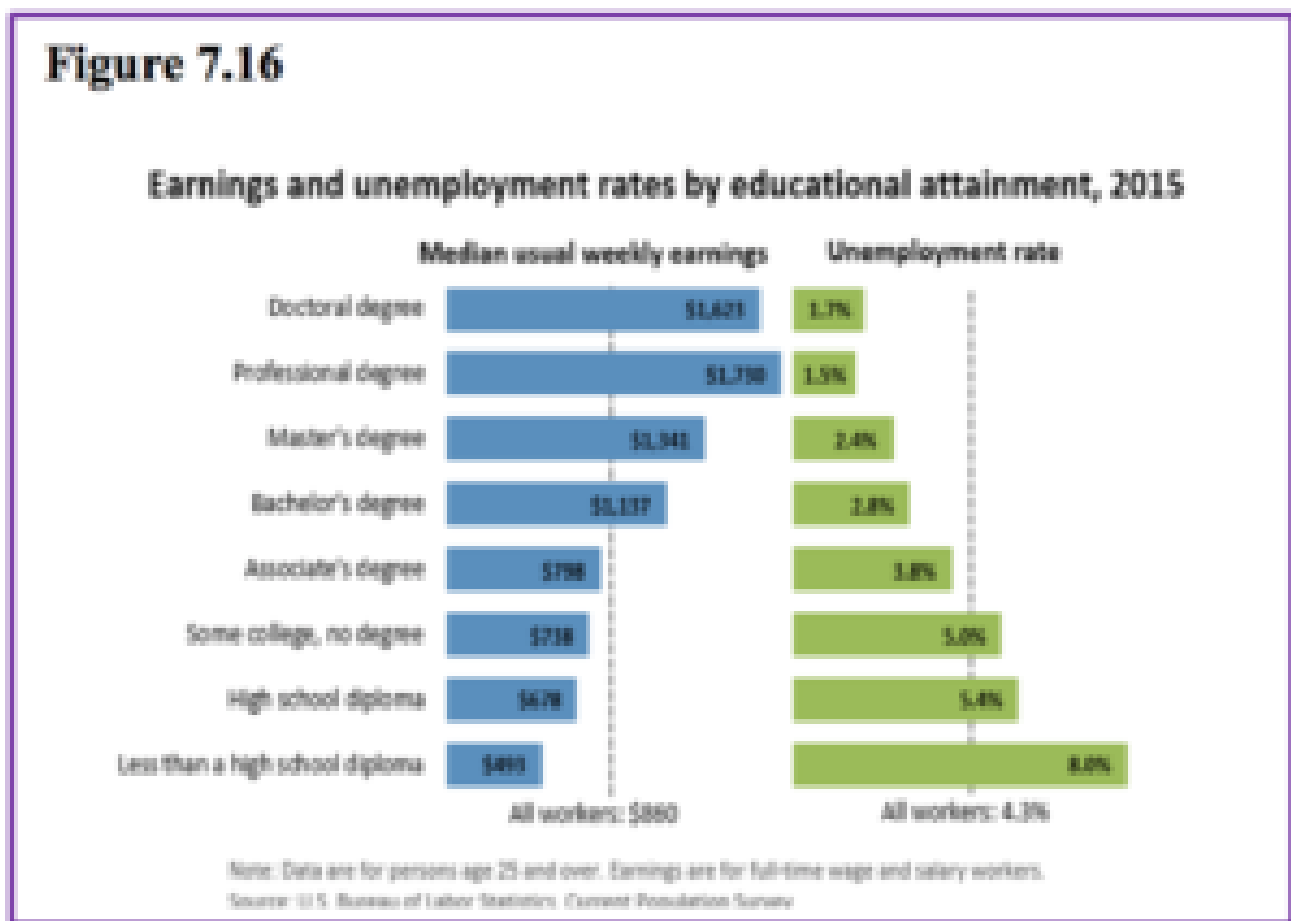


Figure 6.3.2. Earning and unemployment rate by education attainment, 2015.

Worldwide, over 80% of college-educated adults are employed, compared with just over 70% of those with a high school or equivalent diploma, and only 60% of those with no high school diploma (OECD, 2015). Those with a college degree will earn more over the course of their lifetime. Moreover, the benefits of a college education go beyond employment and finances. The OECD found that around the world, adults with higher

educational attainment were more likely to volunteer, felt they had more control over their lives, and thus were more interested in the world around them. Studies of U.S. college students find that they gain a more distinct identity and become more socially competent, less dogmatic, and ethnocentric compared to those not in college (Pascarella, 2006).

Who is Going to College?

Each generation tends to earn (and perhaps need) increased levels of formal education. As we can see in Figure 7.4, approximately one-third of the American adult population has a bachelor's degree or higher, as compared with less than 5% in 1940. Educational attainment rates vary by gender and race. All races combined, women are slightly more likely to have graduated from college than men; that gap widens with graduate and professional degrees. However, wide racial disparities still exist. For example, 23% of African-Americans have a college degree, and only 16.4% of Hispanic Americans have a college degree, compared to 37% of non-Hispanic white Americans. The college graduation rates of African-Americans and Hispanic Americans have been growing in recent years. However, the rate has doubled since 1991 for African-Americans, and it has increased by 60% in the last two decades for Hispanic-Americans.

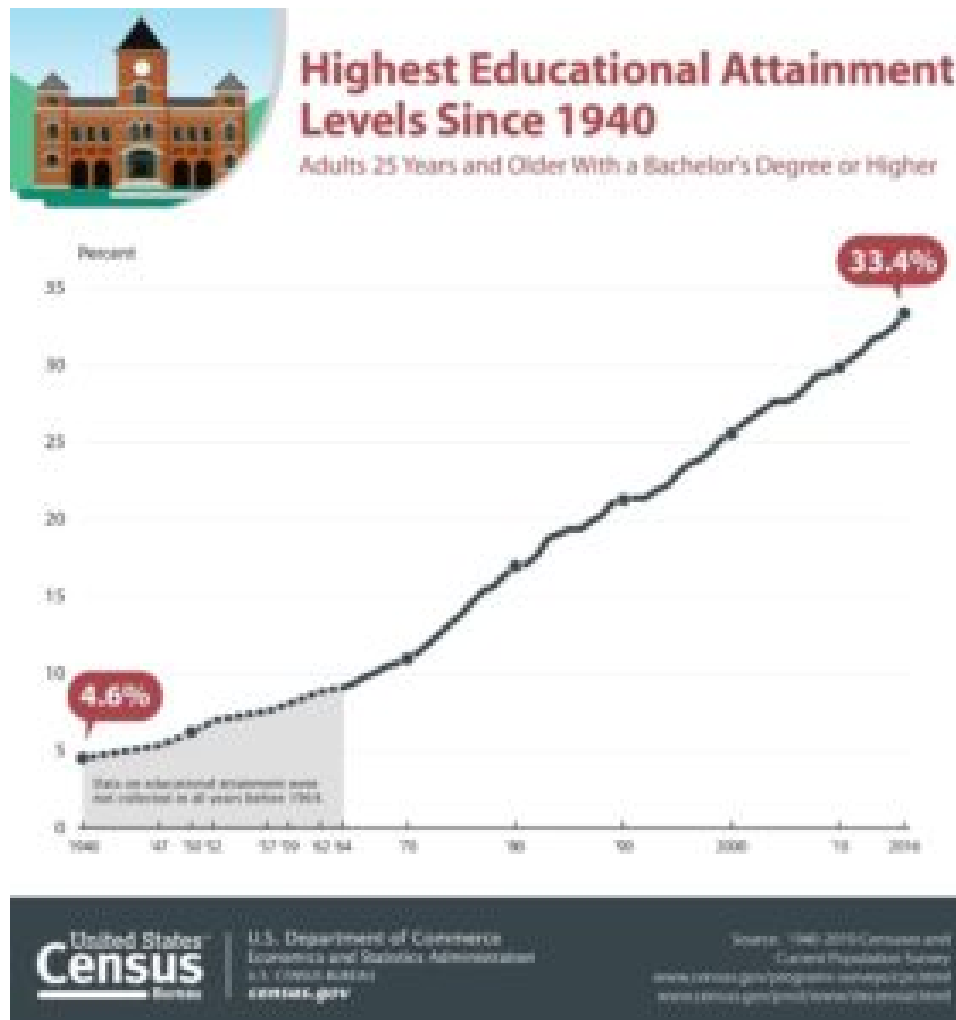


Figure 6.3.3. Higher education attainment for adults over age 25.

What about those young or emerging adults graduating high school today—is the majority of that group going to college? According to the U.S. Bureau of Labor Statistics (2017), 66.7% of youth ages 16-24 who graduated high school between January and October 2017 were enrolled in colleges or universities in October 2017. There were gender differences (71.7% of females vs. 61.1% of males) and racial differences (83% of Asians, 67.1% of non-Hispanic whites, 61% Hispanics, and 59.4% Blacks). Not all of these students will persist and earn college degrees, however (U.S. Census Bureau, 2017).

Higher Education and Career Preparation

Of concern in recent years is the relationship between higher education and the workplace. In 2005, American educator and then Harvard University President, Derek Bok, called for a closer alignment between the goals of educators and the demands of the economy. Companies outsource much of their work, not only to save costs but to find workers with the skills they need. What is required to do well in today's economy? Colleges and universities, he argued, need to promote global awareness, critical thinking skills, the ability to communicate, moral reasoning, and responsibility in their students. Regional accrediting agencies and state organizations provide similar guidelines for educators. Workers need skills in listening, reading, writing, speaking, global awareness, critical thinking, civility, and computer literacy—all skills that enhance success in the workplace.

More than a decade later, the question remains: does formal education prepare young adults for the workplace? It depends on whom you ask. In an article referring to information from the National Association of Colleges and Employers' 2018 Job Outlook Survey, Bauer-Wolf (2018) explains that employers perceive gaps in students' competencies, but many graduating college seniors are overly confident. The biggest difference was in perceived professionalism and work ethic (only 43% of employers thought that students are competent in this area compared to 90% of the students) (Bauer-Wolf, 2018). Similar differences were also found in terms of oral communication, written communication, and critical thinking skills. Only in terms of digital technology skills were more employers confident about students' competencies than were the students (66% compared to 60%).

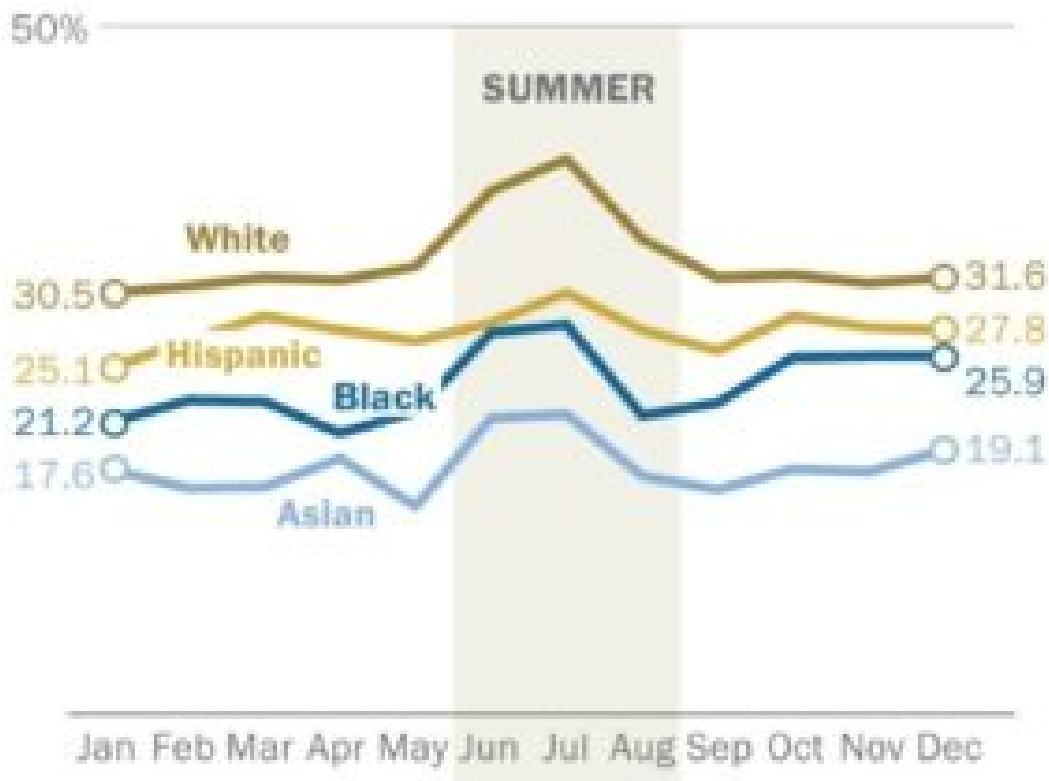
It appears that students need to learn what some call “soft skills,” as well as the particular knowledge and skills within their college major. As education researcher Loni Bordoloi Pazich (2018) noted, most American college students today are enrolling in business or other pre-professional programs and to be effective and successful workers and leaders, they would benefit from the communication, teamwork, and critical thinking skills, as well as the content knowledge, gained from liberal arts education (Bordoloi Pazich, 2018). In fact, two-thirds of children starting primary school now will be employed in jobs in the future that currently do not exist. Therefore, students cannot learn every single skill or fact that they may need to know, but they can learn how to learn, think, research, and communicate well so that they are prepared to continually learn new things and adapt effectively in their careers and lives since the economy, technology, and global markets will continue to evolve (Henseler, 2017).

46.

Work and Career

Working Teens

Many adolescents work either summer jobs or during the school year. Holding a job may offer teenagers extra funds, the opportunity to learn new skills, ideas about future careers, and perhaps the true value of money. However, there are numerous concerns about teenagers working, especially during the school year. A long-standing concern is that it “engenders precocious maturity of more adult-like roles and problem behaviors” (Staff, VanEseltine, Woolnough, Silver, & Burrington, 2011, p. 150). Several studies have found that working more than 20 hours per week can lead to declines in grades, a general disengagement from school (Staff, Schulenberg, & Bachman, 2010; Lee & Staff, 2007; Marsh & Kleitman, 2005), an increase in substance abuse (Longest & Shanahan, 2007), engaging in earlier sexual behavior, and pregnancy (Staff et al., 2011).



Note: Data not seasonally adjusted. Hispanics are of any race.
 Source: Pew Research Center analysis of U.S. Bureau of Labor Statistics data.

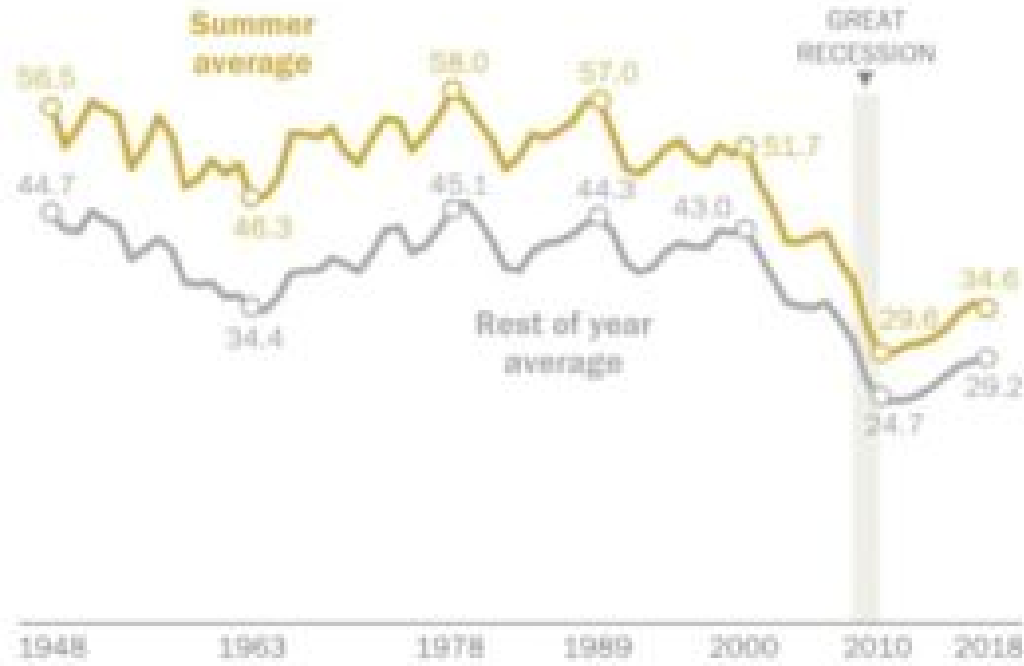
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Figure 6.4.1. Percentage of U.S. 16- to 19-year-olds who are employed by month, 2018.

Teen employment rates have declined dramatically since 2000. Currently, only about a third of teens work. Since the late 1940s, the start of this data collection, through the 1980s, teen employment followed a predictable pattern—employment was up when the economy was good and fell when the economy was bad, but it typically remained between 46% and 58%. This trend changed following the recession of 1990-91 when teen employment did not recover as usual. Teen employment fell again during the 2001 recession, and even more during and after the 2007-09 recession. Teen employment bottomed out at about 30% in 2010, and while it has edged up slightly, it is still well below pre-recession levels. This trend is not purely American—similar declines in youth employment have been observed in other advanced economies (DeSilver, 2018).

Teen employment in the U.S. well below pre-2000 levels, despite post-recession gains

% of 16- to 19-year-olds who are employed



Note: Data not seasonally adjusted. For each year, "summer average" was calculated as the average of the employment-population ratios in June, July and August; "rest of year average" was based on the average for the nine other months of each year.

Source: Pew Research Center analysis of U.S. Bureau of Labor Statistics data.

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Figure 6.4.2. Percentage of 16- to 19-year-olds where are employed by year.

Research has examined reasons for the decline in teen employment rates since 2000 and has discovered multiple possibilities. There are fewer low-skill, entry-level jobs, such as sales clerks or office assistants, than in decades past. While most industries have seen losses in teen workers, food service is the one industry hiring more teens than in previous decades. Another reason may have to do with changes to the academic calendar. More schools are ending in late June and starting back in late August. A shortened summer break makes finding summer employment challenging. In addition, more students are taking classes over the summer, including getting a head start on college credits. More teens are also completing community service hours, often a requirement for graduation or a bolster to their college applications. Finally, more students are doing unpaid internships, which do not count toward employment statistics (DeSilver, 2018).

Why are Fewer Teens Working Summer Jobs?



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://wisconsin.pressbooks.pub/adolescentpsychology/?p=121#oembed-1>

Video 6.4.1. *Why are Fewer Teens Working Summer Jobs?* is an interview with The Atlantic’s Derek Thompson, author of “[Teenagers Have Stopped Getting Summer Jobs—Why?](#)” and discusses some of the reasons for the forward trend in teen employment.

Career Development

Work plays a significant role in the lives of people, and adolescence is a time when we begin to explore our career options and set a course for establishing a career. Career development has a number of stages:

Table 6.4.1. Stages of career development

#	STAGE	DESCRIPTION
1	GROWING	This is a time in the early years (4–13 years old) when you begin to have a sense of the future. You begin to realize that your participation in the world is related to being able to do certain tasks and accomplish certain goals.
2	EXPLORING	This period begins when you are a teenager, and it extends into your mid-twenties. In this stage, you find that you have specific interests and aptitudes. You are aware of your inclinations to perform and learn about some subjects more than others. You may try out jobs in your community or at your school. You may begin to explore a specific career. At this stage, you have some detailed “data points” about careers, which will guide you in certain directions.
3	ESTABLISHING	This period covers your mid-twenties through mid-forties. By now, you are selecting or entering a field you consider suitable, and you are exploring job opportunities that will be stable. You are also looking for upward growth, so you may be thinking about an advanced degree.
4	MAINTAINING	This stage is typical for people in their mid-forties to mid-sixties. You may be in an upward pattern of learning new skills and staying engaged. But you might also be merely “coasting and cruising” or even feeling stagnant. You may be taking stock of what you’ve accomplished and where you still want to go.
5	REINVENTING	In your mid-sixties, you are likely transitioning into retirement. But retirement in our technologically advanced world can be just the beginning of a new career or pursuit—a time when you can reinvent yourself. There are many new interests to pursue, including teaching others what you’ve learned, volunteering, starting online businesses, consulting, etc.

The American School Counselor Association (2017) recommends that school counselors aid students in their career development beginning as early as kindergarten and continue this development throughout their education.

One of the most well-known theories about career choice is from John Holland (1985), who proposed six categories of personality types based on career interests, as well as varying types of work environments. People with similar interests and personalities gravitate toward similar careers. The better matched one’s personality is to the workplace characteristics, the more satisfied and successful one is predicted to be with that career or vocational choice. Research support has been mixed, and we should note that there is more to satisfaction and success in a career than one’s personality traits or likes and dislikes. For instance, education, training, and abilities need to match the expectations and demands of the job, plus the state of the economy, availability of positions, and salary rates may play practical roles in choices about work.



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://wisconsin.pressbooks.pub/adolescentpsychology/?p=121#oembed-2>

Video 6.4.2. *Holland’s Personality Types* explained.

The six personality types are:

- **Realistic.** These people describe themselves as honest, loyal, and practical. They are doers more than thinkers. They may have strong mechanical, motor, and athletic abilities; like the outdoors; and prefer working with machines, tools, plants, and animals.
- **Investigative.** These people love problem-solving and analytical skills. They are intellectually stimulated and often mathematically or scientifically inclined; like to observe, learn, and evaluate; prefer working alone; might be described as reserved.
- **Artistic.** These people are the “free spirits.” They are creative, emotional, intuitive, and idealistic; have a flair for communicating ideas; dislike structure, and prefer working independently; like to sing, write, act, paint, and think creatively. They are similar to the investigative type but are interested in the artistic and aesthetic aspects of things more than the scientific.
- **Social.** These are “people” people. They are friendly and outgoing; love to help others, make a difference, or both; have strong verbal and personal skills and teaching abilities.
- **Enterprising.** These people are confident, assertive risk-takers. They are sociable; enjoy speaking and leadership; like to persuade rather than guide; like to use their influence; have strong interpersonal skills; are status-conscious.
- **Conventional.** These people are dependable, detail-oriented, disciplined, precise, persistent, and practical; value order; and are good at clerical and numerical tasks. They work well with people and data, so they are good organizers, schedulers, and project managers.

Table 6.4.2. Holland’s occupational options

Type	Ideal Environments	Career Options
Realistic	• Structured • Clear lines of authority • Work with things and tools • Motivated to use hands-on skills to produce tangible results	• Contractor • Emergency medical technician (EMT) • Mechanic • Military career • Packaging engineer
Investigative	• Nonstructured • Research-oriented • Intellectual • Work with ideas and data • Motivated to probe questions of intellectual curiosity	• Pharmacist • Lab technician • Nanotechnologist • Geologist • College professor
Artistic	• Non-structured, creative • Rewards unconventional and aesthetic approaches • Creation of products and ideas • Motivated to express themselves through their work	• Advertising career • Architect • Animator • Musician • Journalist
Social	• Collaborative, collegial • Work with people and on people-related problems/issues • Work as a team or community • Motivated to help and empower others	• Teacher • Counselor • Correctional officer • Coach • Nurse
Enterprising	• Typical business environment • Results-oriented, driven • Work with people and data • Entrepreneurial • Motivated to persuade others on the merits of an idea or product	• Sales manager • Banker • Lawyer • Business owner • Restaurant manager
Conventional	• Orderly • Clear rules and policies • Consistent processes • Work with systems to manipulate and organize data • Motivated to organize information and bring order to data and things	• Auditor • Insurance underwriter • Bank teller • Office manager • Database manager

LINK TO LEARNING: WHAT'S YOUR RIGHT CAREER?

To complete a free online career questionnaire and identify potential careers based on your preferences, go to: [Career One Stop Questionnaire](#)

Career Trends

In recent years, young adults are more likely to find themselves job-hopping and periodically returning to school for further education and retraining than in prior generations. However, researchers find that occupational interests remain fairly stable. Thus, despite the more frequent change in jobs, most people are generally seeking jobs with similar interests rather than entirely new careers (Rottinghaus, Coon, Gaffey & Zytowski, 2007).

Recent research also suggests that Millennials are looking for something different in their place of employment. According to a recent Gallup poll report (2016), Millennials want more than a paycheck; they want a purpose. Unfortunately, only 29% of Millennials surveyed by Gallup reported that they were “engaged” at work. In fact, they report being less engaged than Gen Xers and Baby Boomers, with 55% of Millennials saying they are not engaged at all with their job. This indifference to their workplace may explain the greater tendency to switch jobs. With their current job giving them little reason to stay, they are more likely to take any new opportunity to move on. Only half of Millennials saw themselves working at the same company a year later. Gallup estimates that this employment turnover and lack of engagement costs businesses \$30.5 billion a year.

Neet: Neither Employed nor in Education or Training

Since teens and young adults were some of the hardest hit by the economic downturn in recent years (DeSilver, 2016), a number of young people have become **NEETs**, neither employed nor in education or training. While the number of young people who are NEETs has declined, there is concern that “without assistance, economically inactive young people won’t gain critical job skills and will never fully integrate into the wider economy or achieve their full earning potential” (DeSilver, 2016, para. 3). In Europe, where the rates of NEETs are persistently high, there is also concern that having such large numbers of young adults with little opportunity may increase the chances of social unrest.

In the United States, in 2015, nearly 17% of 16 to 29 year-olds were neither employed nor in school, according to data Desilver (2016) obtained from the Bureau of Labor Statistics. This is down slightly from 2013 when approximately 18.5% of this age group fit the category. As noted in Table 7.2, more women

than men find themselves unemployed and not in school. Additionally, most NEETs have high school or less education, and Asians are less likely to be NEETs than any other ethnic group.

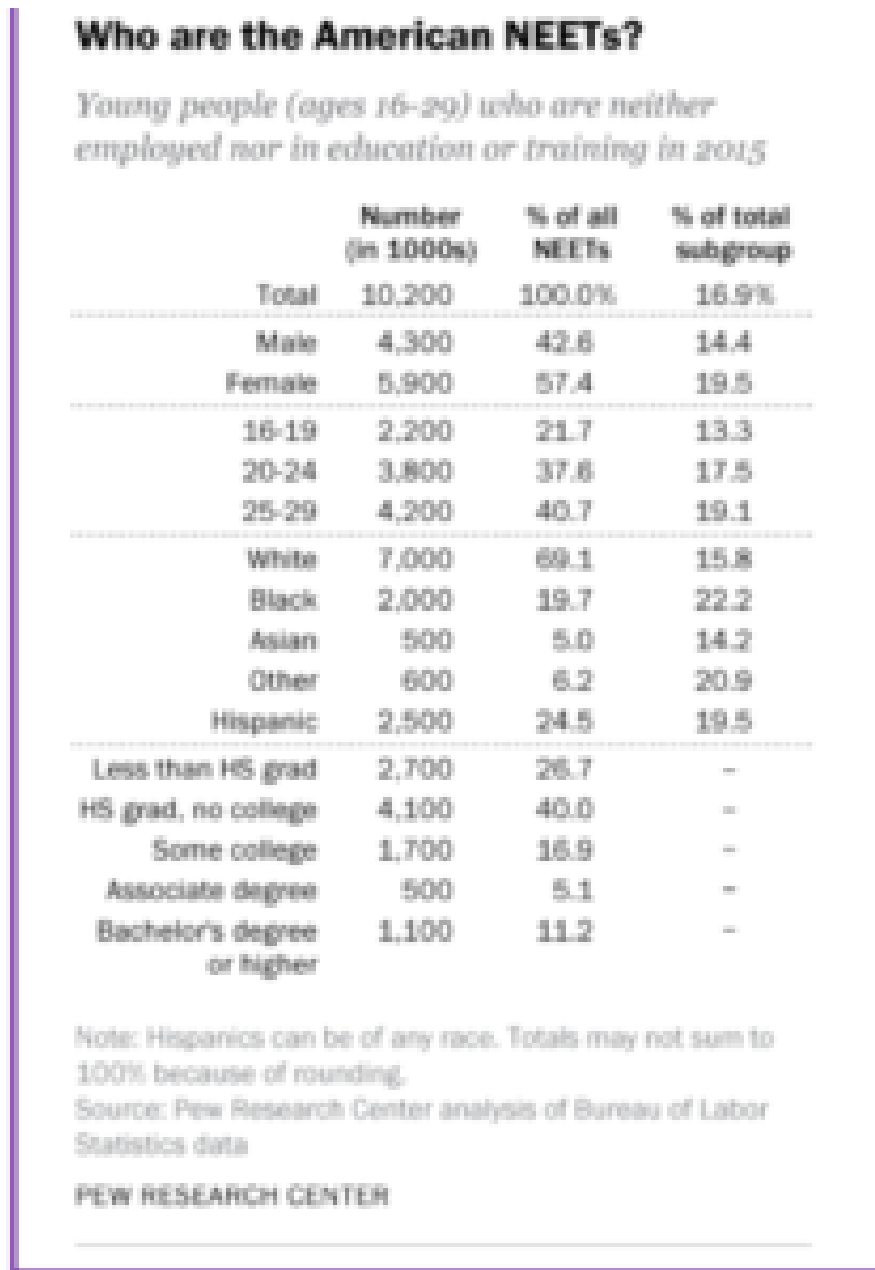


Figure 6.4.3. The American NEETs: young people (ages 16-19) who are neither employed nor in education or training in 2015.

Gender Differences in Careers

Gender also has an impact on career choices. Despite the rise in the number of women who work outside of the home, there are some career fields that are still pursued more by men than women. Jobs held by women

still tend to cluster in the service sector, such as education, nursing, and child-care worker. While in more technical and scientific careers, women are greatly outnumbered by men. Jobs that have been traditionally held by women tend to have lower status, pay, benefits, and job security (Ceci & Williams, 2007).

In recent years, women have made inroads into fields once dominated by males, and today women are almost as likely as men to become medical doctors or lawyers. Despite these changes, women are more likely to have lower-status, and thus less pay than men in these professions. For instance, women are more likely to be a family practice doctor than a surgeon or are less likely to make partner in a law firm (Ceci & Williams, 2007).

47.

Glossary

attention deficit hyperactivity disorder: a neurological and behavioral disorder in which a person has difficulty staying on task, screening out distractions, and inhibiting behavioral outbursts

autism or autism spectrum disorder: a developmental disorder that affects communication and behavior

dyslexia: a specific learning disability that is neurobiological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities

ecological systems model: Bronfenbrenner's theory that we all belong to many communities and are influenced in the context of multiple environments, also known as ecological systems; organized into five levels of external influence: microsystem, mesosystem, exosystem, macrosystem and chronosystem

hidden curriculum: cultural values, concepts, behaviors and roles that are part of the school experience but are not part of the formal curriculum

home state: occurs when parents or siblings visit the school. Children in this state may enjoy special privileges such as going home early or being exempt from certain school rules in the mother's presence, or it can be difficult if the parent is there to discuss trouble at school with a staff member

middle school: a school for children in the grades between elementary school and high school. Middle school usually begins with grade 6 and ends with grade 8

sanctity state: a time in which the child is contemplative, quiet, or prayerful. It is often only a very brief part of the day

secondary education: the period after primary education (elementary or grade school) and before tertiary education (college). It usually occurs from about ages 12 to 18, although there is some variation by school and by nation

street corner state: state in which the child is playful, energetic, excited, and expresses personal opinions, feelings, and beliefs

student state: this state is one in which the student focuses on a task or tries to stay focused on a task, is passive, compliant, and often frustrated

48.

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PART VII

IDENTITY DEVELOPMENT

Learning Objectives

- Define self-concept
- Describe self-esteem and differentiate the different self-esteem types
- Explain Erikson's stages of psychosocial development as it applies to adolescence
- Explain Marcia's four identity statuses
- Identify major domains of identity formation and the developmental processes for each

Middle childhood and Adolescence are periods of personal and social identity formation, in which different roles, behaviors, and ideologies are explored. In the United States, adolescence is seen as a time to develop independence from parents while remaining connected to them. Some key points related to social development during school years include the following:

- Middle childhood is a period of life where children start to have more frequent interactions with their peers. This usually leads to social comparison and more evaluation of their abilities.
- Erik Erikson referred to the task of the older children as industry vs. inferiority. Thus in his view, children this age starts to have a more realistic estimation of their actual ability.
- Starting in middle childhood, cognitive developments result in greater self-awareness, the ability to think about abstract, future possibilities, and the ability to consider multiple possibilities and identities at once.
- Adolescence are the periods of life known for the formation of personal and social identity. Though it is not complete.
- Adolescents must explore, test limits, become autonomous, and commit to an identity or sense of self.
- Erik Erikson referred to the task of the adolescent as one of identity versus role confusion. Thus, in Erikson's view, an adolescent's central questions are "Who am I?" and "Who do I want to be?"
- Changes in the levels of certain neurotransmitters (such as dopamine and serotonin) influence how adolescents experience emotions, typically making them more emotional and more sensitive to stress.
- When adolescents have advanced cognitive development and maturity, they tend to resolve identity issues more efficiently than peers who are less cognitively developed.

- As adolescents work to form their identities, they pull away from their parents, and peer groups become very important; despite this, relationships with parents still play a significant role in identity formation.

49.

Identity Formation



Identity development is a stage in the children's life cycle. For most, the search for identity begins in the adolescent years. During these years, adolescents are more open to 'trying on' different behaviors and appearances to discover who they are. In an attempt to find their identity and discover who they are, adolescents are likely to cycle through several identities to find one that suits them best. Developing and maintaining identity (in adolescent years) is a difficult task due to multiple factors such as family life, environment, and social status. Empirical

studies suggest that this process might be more accurately described as identity development, rather than formation, but confirms a normative process of change in both content and structure of one's thoughts about the self.

Self-Concept

Two main aspects of identity development are self-concept and self-esteem. **Self-concept** is the idea of self-constructed from opinions and beliefs about one's self. These concepts are defined confidently, consistently, and with stability.

Cooley's Looking-Glass Self

Charles Horton Cooley (1964) suggested that our self-concept comes from looking at how others respond to us. This process, known as the looking-glass self involves looking at how others seem to view us and interpreting this as we make judgments about whether we are good or bad, strong or weak, beautiful or ugly, and so on. Of course, we do not always interpret their responses accurately so our self-concept is not simply a mirror reflection of the views of others. After forming an initial self-concept, we may use our existing self-concept as a mental filter screening out those responses that do not seem to fit our ideas of who we are. So compliments may be negated, for example.

Think of times in your life when you felt more self-conscious. The process of the looking-glass self is pronounced when we are preschoolers. Later in life, we also experience this process when we are in a new

school, new job, or are taking on a new role in our personal lives and are trying to gauge our own performance. When we feel more sure of who we are we focus less on how we appear to others.



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Video 7.1.1. *Charles Cooley–Looking Glass Self* explains more about this theory.

Mead's I and Me

George Herbert Mead (1967) offered an explanation of how we develop a social sense of self by being able to see ourselves through the eyes of others. There are two parts of the self: the “I” which is the part of the self that is spontaneous, creative, innate, and is not concerned with how others view us and the “me” or the social definition of who we are.

When we are born, we are all “I” and act without concern about how others view us. But the socialized self begins when we are able to consider how one important person views us. This initial stage is called “taking the role of the significant other.” For example, a child may pull a cat’s tail and be told by his mother, “No! Don’t do that, that’s bad” while receiving a slight slap on the hand. Later, the child may mimic the same behavior toward the self and say aloud, “No, that’s bad” while patting his own hand. What has happened? The child is able to see himself through the eyes of the mother. As the child grows and is exposed to many situations and rules of culture, he begins to view the self in the eyes of many others through these cultural norms or rules. This is referred to as “taking the role of the generalized other” and results in a sense of self with many dimensions. The child comes to have a sense of self as a student, as a friend, as a son, and so on.



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Video 7.1.2. *George Herbert Mead–The I and the Me* explains more about this theory.

50.

Identity Development Theory

A well-developed identity is comprised of goals, values, and beliefs to which a person is committed. It is the awareness of the consistency in self over time, the recognition of this consistency by others (Erikson, 1994). The process of identity development is both an individual and social phenomenon (Adams & Marshall, 1996). Much of this process is assumed during adolescence when cognitive development allows for an individual to construct a 'theory of self' (Elkind, 1998) based on exposure to role models and identity options (Erikson, 1994). Erikson (1994) believed this period of development to be an 'identity crisis,' a crucial turning point in which an individual must develop in one way or another, ushering the adolescent toward growth and differentiation. Identity is formed through a process of exploring options or choices and committing to an option based upon the outcome of their exploration. Failure to establish a well-developed sense of identity can result in identity confusion. Those experiencing identity confusion do not have a clear sense of who they are or their role in society.

Identity development is vital to a person's understanding of self and participation in their social systems. Adams and Marshall (1996) established that identity formation provides five functions: a structure and order to self-knowledge; a sense of consistency and coherence to beliefs, goals, and self-knowledge; a sense of continuity for one's history and future; goals and direction; a sense of personal control of their choices and outcomes.

Erikson's Identity vs. Role Confusion



Figure 8.3.1. Erik Erikson

Erik Erikson’s theory of **psychosocial development** emphasizes the social nature of our development. His theory proposed that our psychosocial development takes place throughout our lifespan. Erikson suggested that how we interact with others is what affects our sense of self, or what he called the ego identity. He also believed that we are motivated by a need to achieve competence in certain areas of our lives.

According to psychosocial theory, we experience eight stages of development over our lifespan (Table 8.1), from infancy through late adulthood. At each stage, there is a conflict, or task, that we need to resolve. Successful completion of each developmental task results in a sense of competence and a healthy personality. Failure to master these tasks leads to feelings of inadequacy.

Table 8.3.1. Erikson’s psychosocial Stages of Development

Stage	Age (years)	Developmental Task	Description
1	0–1	Trust vs. mistrust	Trust (or mistrust) that basic needs, such as nourishment and affection, will be met
2	1–3	Autonomy vs. shame/doubt	Develop a sense of independence in many tasks
3	3–6	Initiative vs. guilt	Take the initiative on some activities—may develop guilt when unsuccessful or boundaries overstepped
4	7–11	Industry vs. inferiority	Develop self-confidence in abilities when competent or sense of inferiority when not
5	12–18	Identity vs. confusion	Experiment with and develop identity and roles
6	19–29	Intimacy vs. isolation	Establish intimacy and relationships with others
7	30–64	Generativity vs. stagnation	Contribute to society and be part of a family
8	65–	Integrity vs. despair	Assess and make sense of life and meaning of contributions



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Video 7.2.1. Erikson’s Psychosocial Development explains all stages of this theory.

Erikson proposed that the primary task of middle childhood is to develop a more accurate sense of one’s own abilities. He referred to this stage as **industry vs. inferiority**, which represents the fourth psychosocial task in his developmental theory. At this stage, older children begin to evaluate their skills and competencies more realistically. Unlike younger children, who often display inflated self-confidence, older children start to understand their strengths and weaknesses through mechanisms like **social comparison**—comparing themselves to peers in academic, athletic, and social domains.

In Erikson’s view, the central question for children in this stage is: “*What can I do?*” The crisis is resolved positively when children experience success and are encouraged by others, leading to the development of self-confidence and the virtue of competence. However, if children frequently experience **failure**, or if their efforts are dismissed or criticized, they may develop feelings of inferiority and low self-esteem. Persistent negative experiences at this stage may result in social withdrawal and a negative self-image.

Moving into adolescence, Erikson believed the central psychosocial task becomes the formation of a personal identity. This stage, called **identity vs. role confusion**, is the fifth psychosocial task, during which adolescents must navigate the complex process of discovering who they are and what they value. This includes exploring appearance, vocational interests, educational goals, relationships, sexuality, political and social beliefs, and personal interests.

Erikson saw adolescence as a time of experimentation and uncertainty, where individuals engage in a psychological moratorium—a temporary pause from making lasting commitments as they explore various identity options. The way adolescents navigate this stage is heavily influenced by how they resolved earlier psychosocial tasks in childhood, making this stage a bridge between childhood and adulthood. The core questions at this stage become: “*Who am I?*” and “*Who do I want to be?*”

A positive resolution leads to identity achievement—a stable, coherent sense of self—and the emergence of fidelity, or the capacity to remain true to one’s values and beliefs. Adolescents may form their identity by adopting the expectations and values of their parents, or by aligning themselves with peers or broader cultural influences. Peer relationships become particularly important during this period, often guiding identity exploration and expression.

However, not all adolescents resolve this crisis successfully during the teenage years. Those who do not achieve a stable sense of identity may experience role confusion, which can manifest as social withdrawal, low self-direction, or a tendency to simply blend into the crowd without clear personal goals. In fact, contemporary

research suggests that full identity achievement is relatively rare by the end of adolescence, and for many, the process continues into young adulthood (Côté, 2006).

Marcia's Identity Statuses

Expanding on Erikson's theory, Marcia (1966) described identity formation during adolescence as involving both *exploration* and *commitment* with respect to ideologies and occupations (e.g., religion, politics, career, relationships, gender roles). Identity development begins when individuals identify with role models who provide them with options to explore for whom they can become. As identity development progresses, adolescents are expected to make choices and commit to options within the confines of their social contexts. In some cases, options are not provided or are limited, and the individual will fail to commit or will commit without the opportunity to explore various options (Marcia, 1980).

Identity confusion/diffusion occurs when adolescents neither explore nor commit to any identities. **Foreclosure** occurs when an individual commits to an identity without exploring options. A **moratorium** is a state in which adolescents are actively exploring options but have not yet made commitments. As mentioned earlier, individuals who have explored different options, discovered their purpose, and have made identity commitments are in a state of **identity achievement**.

		Individual has committed to identity	
		Yes	No
Individual has explored identity options	Yes	Identity Achievement	Moratorium
	No	Foreclosure	Identity Diffusion

Figure 7.2.1. Marcia's identity statuses. Adapted from *Discovering the Lifespan*, by R. S. Feldman, 2009.

The least mature status, and one common in many children, is identity diffusion. **Identity diffusion** is a status that characterizes those who have neither explored the options nor made a commitment to an identity. Marcia (1980) proposed that when individuals enter the identity formation process, they have little awareness or experience with identity exploration or the expectation to commit to an identity. This period of identity

diffusion is typical of children and young adolescents, but adolescents are expected to move out of this stage as they are exposed to role models and experiences that present them with identity possibilities. Those who persist in this identity may drift aimlessly with little connection to those around them or have little sense of purpose in life. Characteristics associated with prolonged diffusion include low self-esteem, easily influenced by peers, lack of meaningful friendships, little commitment, or fortitude in activities or relationships, self-absorbed, and self-indulgent.

Those in **identity foreclosure** *have committed to an identity without having explored the options*. Often, younger adolescence will enter a phase of foreclosure where they may, at least preliminarily, commit to an identity without an investment in the exploration process. This commitment is often a response to anxiety about uncertainty or change during adolescence or pressure from parents, social groups, or cultural expectations. It is expected that most adolescents will progress beyond the foreclosure phase as they can think independently, and we multiple identity options. However, sometimes foreclosure will persist into late adolescence or even adulthood.

In some cases, parents may make these decisions for their children and do not grant the teen the opportunity to make choices. In other instances, teens may strongly identify with parents and others in their life and wish to follow in their footsteps. Characteristics associated with prolonged foreclosure well-behaved and obedient children with a high need for approval, authoritarian parenting style, low levels of tolerance or acceptance of change, high levels of conformity, and conventional thinking.

During high school and college years, teens and young adults move from identity diffusion and foreclosure toward moratorium and achievement. The most significant gains in the development of identity are in college, as college students are exposed to a greater variety of career choices, lifestyles, and beliefs. This experience is likely to spur on questions regarding identity. A great deal of the identity work we do in adolescence and young adulthood is about values and goals, as we strive to articulate a personal vision or dream for what we hope to accomplish in the future (McAdams, 2013).

Identity moratorium *is a status that describes those who are actively exploring in an attempt to establish an identity but have yet to have made any commitment*. This time can be an anxious and emotionally tense period as the adolescent experiments with different roles and explores various beliefs. Nothing is guaranteed, and there are many questions, but few answers. This moratorium phase is the precursor to identity achievement. During the moratorium period, it is normal for adolescents to be rebellious and uncooperative, avoid dealing with problems, procrastinate, experience low self-esteem, feel anxious, and uncertain about decisions.

Identity achievement *refers to those who, after exploration, have committed*. Identity achievement is a long process and is not often realized by the end of adolescence. Individuals that do reach identity achievement feel self-acceptance, stable self-definition, and are committed to their identity.

While Marcia's statuses help us understand the process of developing identity, there are several criticisms of this theory. First, identity status may not be global; different aspects of your identity may be in different statuses. An individual may be in multiple identity statuses at the same time for different aspects of identity.

For example, one could be in the foreclosure status for their religious identity, but in moratorium for career identity, and achievement for gender identity.

Further, identity statuses do not always develop in the sequence described above, although it is the most common progression. Not all people will reach identity achievement in all aspects of their identity, and not all may remain in identity achievement. There may be a third aspect of identity development, beyond exploration and commitment, and that is the reconsideration of commitment. This addition would create a fifth status, **searching moratorium**. This status is a re-exploring after a commitment has been made (Meeus et al., 2012). It is not usual that commitments to aspects of our identity may change as we gain experiences, and more options become available to explore. This searching moratorium may continue well into adulthood.



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://wisconsin.pressbooks.pub/adolescentpsychology/?p=128#oembed-2>

Video 7.2.2. Macia's Stages of Adolescent Identity Development summarizes the various identity statuses and how an individual may move through them.

Supporting identity development

As the process of identity development can be a confusing and challenging period, how can adults support children through this process? First, affirm that the anxiety, doubts, and confusion are reasonable and that most teens do not complete identity achievement before graduating high school. Exposing children to various role models can help them imagine different roles or options for their future selves. Role models can come from within the family, schools, or community. Adults should talk with children about their values, goals, and identities to help build awareness. They may be interested to know how others made decisions while developing their own identities. Finally, support the commitments that children have made. Identity commitments can help someone feel grounded and less confused while they engage in identity exploration.

51.

Starting in middle childhood, cognitive developments result in greater self-awareness, greater awareness of others and their thoughts and judgments, the ability to think about abstract, future possibilities, and the ability to consider multiple possibilities at once. As a result, children experience a significant shift from the simple, concrete, and global self-descriptions typical of young children. Young children defined themselves by physical traits, whereas as they get older, they start to define themselves based on their values, thoughts, and opinions.

One of the ways to gain a clearer sense of self is to exaggerate those qualities that are to be incorporated into the self. Preschoolers often like to exaggerate their own qualities or to seek validation as the biggest or smartest or child who can jump the highest. Much of this may be due to the simple fact that the child does not understand their own limits. Young children may really believe that they can beat their parent to the mailbox, or pick up the refrigerator.

This exaggeration tends to be replaced by a more realistic sense of self in middle childhood as children realize that they do have limitations. Part of this process includes having parents who allow children to explore their capabilities and give the child authentic feedback. Another important part of this process involves the child learning that other people have capabilities, too and that the child's capabilities may differ from those of other people. Children learn to compare themselves to others to understand what they are "good at" and what they are not as good at.

In middle childhood, self-concept becomes more abstract as children place less emphasis on external, concrete traits. As they enter the school system, they begin to experience more frequent social comparisons. For example, they receive both positive and negative feedback from teachers and parents—such as, *"Can't you be as quiet as your sister?"* or *"You did really well on this test—good job!"* These comparisons contribute to the development of a more complex self-concept. Unlike younger children, who often have an unrealistically positive view of themselves, children in middle childhood begin to recognize both their strengths and weaknesses, forming a more balanced and realistic self-image.

During adolescence, social comparison continues to play a role, but identity exploration becomes increasingly important. Adolescents begin to reflect more deeply on who they are and may reconsider their current commitments in favor of exploring alternatives. This ongoing process leads to a more mature and differentiated self-concept. However, research suggests that about half of adolescents remain uncertain about their identity, and this uncertainty may persist into adulthood.

Adolescents can conceptualize multiple "possible selves" that they could become and long-term possibilities and consequences of their choices. Exploring these possibilities may result in abrupt changes in self-presentation as the adolescent chooses or rejects qualities and behaviors, trying to guide the actual self toward

the ideal self (whom the adolescent wishes to be) and away from the feared self (whom the adolescent does not want to be). For many, these distinctions are uncomfortable, but they also appear to motivate achievement through behavior consistent with the ideal and distinct from the feared possible selves.

Further distinctions in self-concept, called “differentiation,” occur as the adolescent recognizes the contextual influences on their behavior and the perceptions of others, and begin to qualify their traits when asked to describe themselves. Differentiation appears fully developed by mid-adolescence. Peaking in the 7th-9th grades, the personality traits adolescents use to describe themselves refer to specific contexts, and therefore may contradict one another. The recognition of inconsistent content in the self-concept is a common source of distress in these years, but this distress may benefit adolescents by encouraging structural development.



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://wisconsin.pressbooks.pub/adolescentpsychology/?p=347#oembed-1>

Video 7.3.1. *Self-Concept, Self-Identity, and Social Identity* explains the various types of self and the formation of identity.

52.

SELF ESTEEM IN MIDDLE CHILDHOOD AND ADOLESCENCE

Self-Esteem

Another aspect of identity formation is self-esteem. **Self-esteem** is defined as one's thoughts and feelings about one's self-concept and identity. Most theories on self-esteem state that there is a grand desire, across all genders and ages, to maintain, protect, and enhance their self-esteem. Similar to self-concept, self-esteem undergoes significant changes during middle childhood and adolescence. As children experience more social comparison and receive feedback across various domains, their self-esteem becomes more nuanced and realistic. Instead of relying on generalized praise, children begin to receive evaluations based on specific areas such as academic performance, athletic ability, and peer relationships. These domain-specific evaluations collectively shape their overall sense of self-worth.

Self-Esteem Development Across the Lifespan - Richard W. Robins, Kali H. Trzesniewski, 2005

Figure. 7.4.1. Changes of self-esteem from middle childhood till older adulthood.

There are several self-concepts and situational factors that tend to impact a child's self-esteem. Children that are close to their parents and their parents are authoritative tend to have higher self-esteem. Further, when they are recognized for their successes, have set high vocational aspirations, are athletic, or feel attractive, they have higher self-esteem. Teens tend to have lower self-esteem when entering middle school, feel peer rejection, and experience academic failure. Also, children that have authoritarian or permissive parents, need to relocate, or have low socioeconomic status, are more likely to experience lower self-esteem.

Girls are most likely to enjoy high self-esteem when engaged in supportive relationships with friends; the most important function of friendship to them is having someone who can provide social and moral support. When they fail to win friends' approval or cannot find someone with whom to share common activities and interests, in these cases, girls suffer from low self-esteem.

In contrast, boys are more concerned with establishing and asserting their independence and defining their relation to authority. As such, they are more likely to derive high self-esteem from their ability to influence their friends. On the other hand, the lack of romantic competence, for example, failure to win or maintain the affection of a romantic interest is the major contributor to low self-esteem in adolescent boys.

Self Esteem Types

According to Mruk (2006), self-esteem is based on two factors: competence and worthiness. The relationship between competence and worthiness defines one's self-esteem type. As these factors are a spectrum, we can even further differentiate self-esteem types and potential issues associated with each (Figure 8.1).

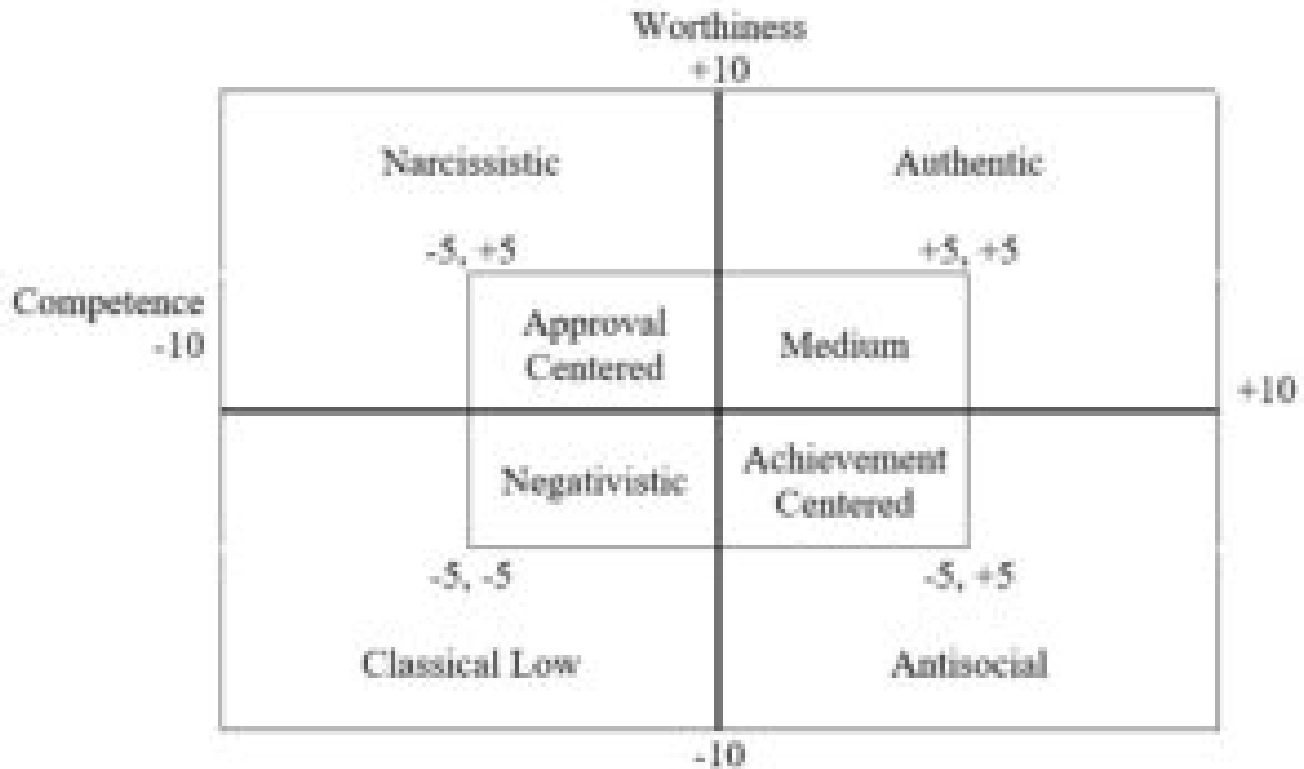


Figure 7.4.2. Self-Esteem meaning matrix with basic types and levels. Adapted from Mruk, 2006.

Those with high levels of competence and those that feel highly worthy will have high self-esteem. This self-esteem type tends to be stable and characterized by openness to new experiences and a tendency towards optimism. Those at the medium-high self-esteem type feel adequately competent and worthy. At the authentic level, individuals are realistic about their competence and feel worthy. They will actively pursue a life of positive, intrinsic values.

Individuals with low levels of competence and worthiness will have low self-esteem. At the negativistic level, people tend to be cautious and are protective of what little self-esteem that they do possess. Those at the classic low self-esteem level experienced impaired function due to their low feelings of competence and worth and are at risk for depression and giving up.

It is also possible to have high levels of competence but feel unworthy. This combination is a defensive or fragile self-esteem type, called competence-based self-esteem, where the person tends to compensate for their low levels of worthiness by focusing on their competence. At the success-seeking level, these individuals' self-

esteem is contingent on their achievements, and they are often anxious about failure. The Antisocial level includes an exaggerated need for success and power, even as to the point of acting out aggressively to achieve it.

The combination of low competence and high worthiness is worthiness-based self-esteem. This type is another defensive or fragile self-esteem where the individual has a low level of competence and compensates by focusing instead on their worthiness. At the approval-seeking level, these individuals are sensitive to criticism and rejection and base their self-esteem on the approval of others. At the narcissistic level, people will have an exaggerated sense of self-worth regardless of the lack of competencies. They also tend to be highly reactive to criticism and are very defensive.

53.

SELF EFFICACY DEVELOPMENT IN MIDDLE CHILDHOOD AND ADOLESCENCE

Self-Efficacy

Imagine two students, Sally and Lucy, who are about to take the same math test. Sally and Lucy have the same exact ability to do well in math, the same level of intelligence, and the same motivation to do well on the test. They also studied together. They even have the same brand of shoes on. The only difference between the two is that Sally is very confident in her mathematical and her test-taking abilities, while Lucy is not. So, who is likely to do better on the test? Sally, of course, because she has the confidence to use her mathematical and test-taking abilities to deal with challenging math problems and to accomplish goals that are important to her—in this case, doing well on the test. This difference between Sally and Lucy—the student who got the A and the student who got the B-, respectively—is self-efficacy. Self-efficacy influences behavior and emotions in particular ways that help people better manage challenges and achieve valued goals.

A concept that was first introduced by Albert Bandura in 1977, **self-efficacy** refers to a person's belief that he or she is able to effectively perform the tasks needed to attain a valued goal (Bandura, 1977). Since then, self-efficacy has become one of the most thoroughly researched concepts in psychology. Just about every important domain of human behavior has been investigated using self-efficacy theory (Bandura, 1977; Maddux, 1995). Self-efficacy does not refer to your abilities but rather to your beliefs about what you can do with your abilities. Also, self-efficacy is not a trait—there are not certain types of people with high self-efficacies and others with low self-efficacies (Stajkovic & Luthans, 1998). Rather, people have self-efficacy beliefs about specific goals and life domains. For example, if you believe that you have the skills necessary to do well in school and believe you can use those skills to excel, then you have high academic self-efficacy.

Self-efficacy may sound similar to a concept you may be familiar with already—*self-esteem*—but these are very different notions. Self-esteem refers to how much you like or “esteem” yourself—to what extent you believe you are a good and worthwhile person. Self-efficacy, however, refers to your self-confidence to perform well and to achieve in specific areas of life such as school, work, and relationships. Self-efficacy does influence self-esteem because how you feel about yourself overall is greatly influenced by your confidence in your ability to perform well in areas that are important to you and to achieve valued goals. For example, if performing well in athletics is very important to you, then your self-efficacy for athletics will greatly influence your self-esteem;

however, if performing well in athletics is not at all important to you, then your self-efficacy for athletics will probably have little impact on your self-esteem.

Self-efficacy begins to develop in very young children. Once self-efficacy is developed, it does not remain constant—it can change and grow as an individual has different experiences throughout his or her lifetime. When children are very young, their parents' self-efficacies are important (Jones & Prinz, 2005). Children of parents who have high parental self-efficacies perceive their parents as more responsive to their needs (Gondoli & Silverberg, 1997). Around the ages of 12 through 16, adolescents' friends also become an important source of self-efficacy beliefs. Adolescents who associate with peer groups that are not academically motivated tend to experience a decline in academic self-efficacy (Wentzel, Barry, & Caldwell, 2004). Adolescents who watch their peers succeed, however, experience a rise in academic self-efficacy (Schunk & Miller, 2002). This is an example of gaining self-efficacy through vicarious performances, as discussed above. The effects of self-efficacy that develop in adolescence are long-lasting. One study found that greater social and academic self-efficacy measured in people ages 14 to 18 predicted greater life satisfaction five years later (Vecchio, Gerbino, Pastorelli, Del Bove, & Caprara, 2007).



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://wisconsin.pressbooks.pub/adolescentpsychology/?p=451#oembed-1>

Video 7.5.1. *Self-Esteem, Self-Efficacy, and Locus of Control.*

Major Influences on Self-Efficacy

Self-efficacy beliefs are influenced in five different ways (Bandura, 1997), which are summarized in the table below.

Influence	Definition
Performance Experiences	When you do well and succeed at a particular task to attain a valued goal, you usually believe that you will succeed again at this task. When you fail you often expect that you will fail again in the future if you try that task.
Vicarious Performances	If someone who seems similar to you succeeds, then you may come to believe that you will succeed as well.
Verbal Persuasion	This involves people telling you what they believe you are and are not capable of doing. Not all people will be equally persuasive.
Imaginal Performances	What you imagine yourself doing and how well or poorly you imagine yourself doing it.
Affective States & Physical Sensations	When you associate negative moods and negative physical sensations with failure, and positive physical sensations with success.

Table 7.5.1. Major Influences on Self-efficacy.

These five types of self-efficacy influence can take many real-world forms that almost everyone has experienced. You may have had previous performance experiences affect your academic self-efficacy when you did well on a test and believed that you would do well on the next test. A vicarious performance may have affected your athletic self-efficacy when you saw your best friend skateboard for the first time and thought that you could skateboard well, too. Verbal persuasion could have affected your academic self-efficacy when a teacher that you respect told you that you could get into the college of your choice if you studied hard for the SATs. It's important to know that not all people are equally likely to influence your self-efficacy though verbal persuasion. People who appear trustworthy or attractive, or who seem to be experts, are more likely to influence your self-efficacy than are people who do not possess these qualities (Petty & Brinol, 2010). That's why a teacher you respect is more likely to influence your self-efficacy than a teacher you do not respect. Imaginal performances are an effective way to increase your self-efficacy. For example, imagining yourself doing well on a job interview actually leads to more effective interviewing (Knudstrup, Segrest, & Hurley, 2003). Affective states and physical sensations abound when you think about the times you have given presentations in class. For example, you may have felt your heart racing while giving a presentation. If you believe your heart was racing because you had just had a lot of caffeine, it likely would not affect your performance. If you believe your heart was racing because you were doing a poor job, you might believe that you cannot give the presentation well. This is because you associate the feeling of anxiety with failure and expect to fail when you are feeling anxious.

Benefits of High Self-Efficacy

Academic Performance

Consider academic self-efficacy in your own life and recall the earlier example of Sally and Lucy. Are you more like Sally, who has high academic self-efficacy and believes that she can use her abilities to do well in school, or are you more like Lucy, who does not believe that she can effectively use her academic abilities to excel in school? Do you think your own self-efficacy has ever affected your academic ability? Do you think you have ever studied more or less intensely because you did or did not believe in your abilities to do well? Many researchers have considered how self-efficacy works in academic settings, and the short answer is that academic self-efficacy affects every possible area of academic achievement (Pajares, 1996).

Students who believe in their ability to do well academically tend to be more motivated in school (Schunk, 1991). When self-efficacious students attain their goals, they continue to set even more challenging goals (Schunk, 1990). This can all lead to better performance in school in terms of higher grades and taking more challenging classes (Multon, Brown, & Lent, 1991). For example, students with high academic self-efficacies might study harder because they believe that they are able to use their abilities to study effectively. Because they studied hard, they receive an A on their next test. Teachers' self-efficacies also can affect how well a student

performs in school. Self-efficacious teachers encourage parents to take a more active role in their children's learning, leading to better academic performance (Hoover-Dempsey, Bassler, & Brissie, 1987).

Although there is a lot of research about how self-efficacy is beneficial to school-aged children, college students can also benefit from self-efficacy. Freshmen with higher self-efficacies about their ability to do well in college tend to adapt to their first year in college better than those with lower self-efficacies (Chemers, Hu, & Garcia, 2001). The benefits of self-efficacy continue beyond the school years: people with strong self-efficacy beliefs toward performing well in school tend to perceive a wider range of career options (Lent, Brown, & Larkin, 1986). In addition, people who have stronger beliefs of self-efficacy toward their professional work tend to have more successful careers (Stajkovic & Luthans, 1998).

One question you might have about self-efficacy and academic performance is how a student's actual academic ability interacts with self-efficacy to influence academic performance. The answer is that a student's actual ability does play a role, but it is also influenced by self-efficacy. Students with greater ability perform better than those with lesser ability. But, among a group of students with the same exact level of academic ability, those with stronger academic self-efficacies outperform those with weaker self-efficacies. One study (Collins, 1984) compared performance on difficult math problems among groups of students with different levels of math ability and different levels of math self-efficacy. Among a group of students with average levels of math ability, the students with weak math self-efficacies got about 25% of the math problems correct. The students with average levels of math ability and strong math self-efficacies got about 45% of the questions correct. This means that by just having stronger math self-efficacy, a student of average math ability will perform 20% better than a student with similar math ability but weaker math self-efficacy. You might also wonder if self-efficacy makes a difference only for people with average or below-average abilities. Self-efficacy is important even for above-average students. In this study, those with above-average math abilities and low math self-efficacies answered only about 65% of the questions correctly; those with above-average math abilities and high math self-efficacies answered about 75% of the questions correctly.

Healthy Behaviors

Think about a time when you tried to improve your health, whether through dieting, exercising, sleeping more, or any other way. Would you be more likely to follow through on these plans if you believed that you could effectively use your skills to accomplish your health goals? Many researchers agree that people with stronger self-efficacies for doing healthy things (e.g., exercise self-efficacy, dieting self-efficacy) engage in more behaviors that prevent health problems and improve overall health (Strecher, DeVellis, Becker, & Rosenstock, 1986). People who have strong self-efficacy beliefs about quitting smoking are able to quit smoking more easily (DiClemente, Prochaska, & Gibertini, 1985). People who have strong self-efficacy beliefs about being able to reduce their alcohol consumption are more successful when treated for drinking problems (Maisto, Connors, & Zywiak, 2000). People who have stronger self-efficacy beliefs about their ability to recover from heart attacks do so more quickly than those who do not have such beliefs (Ewart, Taylor, Reese, & DeBusk, 1983).

One group of researchers (Roach Yadrick, Johnson, Boudreaux, Forsythe, & Billon, 2003) conducted an

experiment with people trying to lose weight. All people in the study participated in a weight loss program that was designed for the U.S. Air Force. This program had already been found to be very effective, but the researchers wanted to know if increasing people's self-efficacies could make the program even more effective. So, they divided the participants into two groups: one group received an intervention that was designed to increase weight loss self-efficacy along with the diet program, and the other group received only the diet program. The researchers tried several different ways to increase self-efficacy, such as having participants read a copy of *Oh, The Places You'll Go!* by Dr. Seuss (1990), and having them talk to someone who had successfully lost weight. The people who received the diet program and an intervention to increase self-efficacy lost an average of 8.2 pounds over the 12 weeks of the study; those participants who had only the diet program lost only 5.8 pounds. Thus, just by increasing weight loss self-efficacy, participants were able to lose over 50% more weight.

Studies have found that increasing a person's nutritional self-efficacy can lead them to eat more fruits and vegetables (Luszczynska, Tryburcy, & Schwarzer, 2006). Self-efficacy plays a large role in successful physical exercise (Maddux & Dawson, 2014). People with stronger self-efficacies for exercising are more likely to plan on beginning an exercise program, actually beginning that program (DuCharme & Brawley, 1995), and continuing it (Marcus, Selby, Niaura, & Rossi, 1992). Self-efficacy is especially important when it comes to safe sex. People with greater self-efficacies about condom usage are more likely to engage in safe sex (Kaneko, 2007), making them more likely to avoid sexually transmitted diseases, such as HIV (Forsyth & Carey, 1998).

Athletic Performance

If you are an athlete, self-efficacy is especially important in your life. Professional and amateur athletes with stronger self-efficacy beliefs about their athletic abilities perform better than athletes with weaker levels of self-efficacy (Wurtele, 1986). This holds true for athletes in all types of sports, including track and field (Gernigon & Delloye, 2003), tennis (Sheldon & Eccles, 2005), and golf (Bruton, Mellalieu, Shearer, Roderique-Davies, & Hall, 2013). One group of researchers found that basketball players with strong athletic self-efficacy beliefs hit more foul shots than did basketball players with weak self-efficacy beliefs (Haney & Long, 1995). These researchers also found that the players who hit more foul shots had greater increases in self-efficacy after they hit the foul shots compared to those who hit fewer foul shots and did not experience increases in self-efficacy. This is an example of how we gain self-efficacy through performance experiences.

54.

SELF REGULATION IN MIDDLE CHILDHOOD AND ADOLESCENCE

Self-Regulation

One of the major reasons that higher self-efficacy usually leads to better performance and greater success is that self-efficacy is an important component of self-regulation. Self-regulation is the complex process through which you control your thoughts, emotions, and actions (Gross, 1998). It is crucial to success and well-being in almost every area of your life. Every day, you are exposed to situations where you might want to act or feel a certain way that would be socially inappropriate or that might be unhealthy for you in the long run. For example, when sitting in a boring class, you might want to take out your phone and text your friends, take off your shoes and take a nap, or perhaps scream because you are so bored. Self-regulation is the process that you use to avoid such behaviors and instead sit quietly through class. Self-regulation takes a lot of effort, and it is often compared to a muscle that can be exhausted (Baumeister, Bratslavsky, Muraven, & Tice, 1998). For example, a child might be able to resist eating a pile of delicious cookies if he or she is in the room with the cookies for only a few minutes, but if that child were forced to spend hours with the cookies, his or her ability to regulate the desire to eat the cookies would wear down. Eventually, his or her self-regulatory abilities would be exhausted, and the child would eat the cookies. A person with strong self-efficacy beliefs might become less distressed in the face of failure than might someone with weak self-efficacy. Because self-efficacious people are less likely to become distressed, they draw less on their self-regulation reserves; thus, self-efficacious people persist longer in the face of a challenge.

Self-efficacy influences self-regulation in many ways to produce better performance and greater success (Maddux & Volkmann, 2010). First, people with stronger self-efficacies have greater *motivation to perform* in the area for which they have stronger self-efficacies (Bandura & Locke, 2003). This means that people are motivated to work harder in those areas where they believe they can effectively perform. Second, people with stronger self-efficacies are more likely to *persevere through challenges* in attaining goals (Vancouver, More, & Yoder, 2008). For example, people with high academic self-efficacies are better able to motivate themselves to persevere through such challenges as taking a difficult class and completing their degrees because they believe that their efforts will pay off. Third, self-efficacious people believe that *they have more control over a situation*. Having more control over a situation means that self-efficacious people might be more likely to engage in the behaviors that will allow them to achieve their desired goal. Finally, self-efficacious people *have*

more confidence in their problem-solving abilities and, thus, are able to better use their cognitive resources and make better decisions, especially in the face of challenges and setbacks (Cervone, Jiwani, & Wood, 1991).

Self-regulation is the capacity to alter one's responses. It is broadly related to the term "self-control". The term "regulate" means to change something—but not just any change, rather change to bring it into agreement with some idea, such as a rule, a goal, a plan, or a moral principle. To illustrate, when the government regulates how houses are built, that means the government inspects the buildings to check that everything is done "up to code" or according to the rules about good building. In a similar fashion, when you regulate yourself, you watch and change yourself to bring your responses into line with some ideas about how they should be.

People regulate four broad categories of responses. They control their thinking, such as in trying to concentrate or to shut some annoying earworm tune out of their mind. They control their emotions, as in trying to cheer themselves up or to calm down when angry (or to stay angry, if that's helpful). They control their impulses, as in trying not to eat fattening food, trying to hold one's tongue, or trying to quit smoking. Last, they try to control their task performances, such as in pushing themselves to keep working when tired and discouraged, or deciding whether to speed up (to get more done) or slow down (to make sure to get it right).

Benefits of Self-Control

People who are good at self-regulation do better than others in life. Follow-up studies with Mischel's samples found that the children who resisted temptation and delayed gratification effectively grew into adults who were better than others in school and work, more popular with other people, and who were rated as nicer, better people by teachers and others (Mischel, Shoda, & Peake, 1988; Shoda, Mischel, & Peake, 1990). College students with high self-control get better grades, have better close relationships, manage their emotions better, have fewer problems with drugs and alcohol, are less prone to eating disorders, are better adjusted, have higher self-esteem, and get along better with other people, as compared to people with low self-control (Tangney, Baumeister, & Boone, 2004). They are happier and have less stress and conflict (Hofmann, Vohs, Fisher, Luhmann, & Baumeister, 2013). Longitudinal studies have found that children with good self-control go through life with fewer problems, are more successful, are less likely to be arrested or have a child out of wedlock, and enjoy other benefits (Moffitt et al., 2011). Criminologists have concluded that low self-control is a—if not the—key trait for understanding the criminal personality (Gottfredson & Hirschi, 1990; Pratt & Cullen, 2000).

Some researchers have searched for evidence that too much self-control can be bad (Tangney et al., 2004)—but without success. There is such a thing as being highly inhibited or clinically "over-controlled," which can impair initiative and reduce happiness, but that does not appear to be an excess of self-regulation. Rather, it may stem from having been punished excessively as a child and, therefore, adopting a fearful, inhibited approach to life. In general, self-control resembles intelligence in that the more one has, the better off one is, and the benefits are found through a broad range of life activities.

Three Ingredients of Effective Self-Regulation

For self-regulation to be effective, three parts or ingredients are involved. The first is standards, which are ideas about how things should (or should not) be. The second is monitoring, which means keeping track of the target behavior that is to be regulated. The third is the capacity to change.

Standards are an indispensable foundation for self-regulation. We already saw that self-regulation means a change in relation to some idea; without such guiding ideas, the change would largely be random and lacking direction. Standards include goals, laws, moral principles, personal rules, other people's expectations, and social norms. Dieters, for example, typically have a goal in terms of how much weight they wish to lose. They help their self-regulation further by developing standards for how much or how little to eat and what kinds of foods they will eat.

The second ingredient is monitoring. It is hard to regulate something without being aware of it. For example, dieters count their calories. That is, they keep track of how much they eat and how fattening it is. In fact, some evidence suggests that dieters stop keeping track of how much they eat when they break their diet or go on an eating binge, and the failure of monitoring contributes to eating more (Polivy, 1976). Alcohol has been found to impair all sorts of self-regulation, partly because intoxicated persons fail to keep track of their behavior and compare it to their standards.

The combination of standards and monitoring was featured in an influential theory about self-regulation by Carver and Scheier (1981, 1982, 1998). Those researchers started their careers studying self-awareness, which is a key human trait. The study of self-awareness recognized early on that people do not simply notice themselves the way they might notice a tree or car. Rather, self-awareness always seemed to involve comparing oneself to a standard. For example, when a man looks in a mirror, he does not just think, "Oh, there I am," but more likely thinks, "Is my hair a mess? Do my clothes look good?" Carver and Scheier proposed that the reason for this comparison to standards is that it enables people to regulate themselves, such as by changing things that do not measure up to their standards. In the mirror example, the man might comb his hair to bring it into line with his standards for personal appearance. Good students keep track of their grades, credits, and progress toward their degree and other goals. Athletes keep track of their times, scores, and achievements, as a way to monitor improvement.

The process of monitoring oneself can be compared to how a thermostat operates. The thermostat checks the temperature in the room compares it to a standard (the setting for the desired temperature), and if those do not match, it turns on the heat or air conditioner to change the temperature. It checks again and again, and when the room temperature matches the desired setting, the thermostat turns off the climate control. In the same way, people compare themselves to their personal standards, make changes as needed, and stop working on change once they have met their goals. People feel good not just when they reach their goals but even when they deem they are making good progress (Carver & Scheier, 2002). They feel bad when they are not making sufficient progress.

That brings up the third ingredient, which is the capacity to change oneself. In effective self-regulation,

people operate on themselves to bring about these changes. The popular term for this is “willpower,” which suggests some kind of energy is expended in the process. Psychologists hesitate to adopt terms associated with folk wisdom because there are many potential implications. Here, the term is used to refer specifically to some energy that is involved in the capacity to change oneself.

Consistent with the popular notion of willpower, people do seem to expend some energy during self-regulation. Many studies have found that after people exert self-regulation to change some response, they perform worse on the next unrelated task if it too requires self-regulation (Hagger, Wood, Stiff, & Chatzisarantis, 2010). That pattern suggests that some energy such as willpower was used up during the first task, leaving less available for the second task. The term for this state of reduced energy available for self-regulation is ego depletion (Baumeister, Bratslavsky, Muraven, & Tice, 1998). Current research provides mixed results on ego depletion, and we need further study to better understand when and how it occurs. It may be that as people go about their daily lives, they gradually become ego-depleted because they are exerting self-control and resisting temptations. Some research suggests that during the state of ego depletion people become less helpful and more aggressive, prone to overeat, misbehave sexually, and express more prejudice (Hofmann, Vohs, & Baumeister, 2012).

Thus, a person’s capacity for self-regulation is not constant, but rather it fluctuates. To be sure, some people are generally better than others at controlling themselves (Tangney et al., 2004). But even someone with excellent self-control may occasionally find that control breaks down under ego depletion. In general, self-regulation can be improved by getting enough sleep and healthy food, and by minimizing other demands on one’s willpower.

There is some evidence that regular exercise of self-control can build up one’s willpower, like strengthening a muscle (Baumeister & Tierney, 2011; Oaten & Cheng, 2006). Even in early adulthood, one’s self-control can be strengthened. Furthermore, research has shown that disadvantaged, minority children who take part in preschool programs such as Head Start (often based on the Perry program) end up doing better in life even as adults. This was thought for a while to be due to increases in intelligence quotient (IQ), but changes in IQ from such programs are at best temporary. Instead, recent work indicates that improvement in self-control and related traits may be what produce the benefits (Heckman, Pinto, & Savelyev, in press). It’s not doing math problems or learning to spell at age 3 that increases subsequent adult success—but rather the benefit comes from having some early practice at planning, getting organized, and following rules.

55.

EMOTION AND EMOTION REGULATION IN MIDDLE CHILDHOOD AND ADOLESCENCE

As we move through our daily lives, we experience a variety of emotions. An **emotion** is a subjective state of being that we often describe as our feelings. Emotions result from the combination of subjective experience, expression, cognitive appraisal, and physiological responses (Levenson, Carstensen, Friesen, & Ekman, 1991). An emotion often begins with a subjective (individual) experience, which is a stimulus. Often the stimulus is external, but it can also be an internal one. For example, if a child thinks about losing a treasured toy, he or she may become sad even though they still have possession of the toy. **Emotional expression** refers to the way one displays an emotion and includes nonverbal and verbal behaviors (Gross, 1999).¹

Emotional Regulation and Self Control

Emotional self-regulation refers to strategies we use to control our emotional states so that we can attain goals (Thompson & Goodvin, 2007). This requires effortful control of emotions and initially requires assistance from caregivers (Rothbart, Posner, & Kieras, 2006). Young infants have very limited capacity to adjust their emotional states and depend on their caregivers to help soothe themselves. It is in early childhood that we see the start of **self-control**, a process that takes many years to fully develop.

As with most abilities, emotion regulation improves in middle childhood and adolescence compared to earlier stages. Older children have access to a wider range of strategies to help them manage their emotions. One such strategy is **cognitive reappraisal**, which involves reinterpreting an event to change its emotional impact. For example, imagine not being invited to a classmate's birthday party. You might initially feel frustrated or left out. Using cognitive reappraisal, you could think, *"My classmate only invited really close friends, and now I have more free time this weekend to enjoy things I like."*

Although children at this stage are better able to regulate their emotions, their emotional experiences are more influenced by social relationships. They tend to have a heightened fear of social rejection and are more

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sensitive to negative social cues. As we discussed in the context of peer relationships, children begin to form broader and more complex friendships. They also spend increasing amounts of time with peers rather than with family members, making them more susceptible to peer influence. This shift in social dynamics can contribute to increased stress as children learn to navigate new interpersonal challenges.

At the same time, family continues to play a crucial role in supporting children's emotional development. Children benefit from parents who model effective emotional expression and regulation. A positive family climate fosters more positive emotional experiences for the child and can act as a buffer against stress from peer-related challenges.

Media Attributions

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56.

While the development of self-concept follows a relatively universal pattern—becoming more abstract, differentiated, and realistic over time—numerous factors influence the *content* and *trajectory* of this development, including **culture, ethnicity, and gender**. For instance, research has shown that Chinese and Japanese children tend to report lower levels of self-esteem despite high academic achievement. This may be due to cultural norms that emphasize humility, self-criticism, and group harmony over individual self-praise. In contrast, African American children often report higher self-esteem than their European American peers, possibly reflecting strong cultural pride and support within their communities, as well as protective socialization practices that promote resilience.

Beyond cultural and ethnic influences, the development of self-concept and self-esteem is also shaped by **individual experiences** such as peer and family support, participation in physical activities, and perceived competence in various domains. For example, adolescents who have caregivers that are emotionally available and maintain a warm, responsive relationship with them are more likely to develop a secure sense of self and higher self-esteem. On the other hand, adolescents who experience harsh criticism, neglect, or emotional distance from their parents may struggle with low self-worth and uncertainty about their identity.

Peer relationships also play a crucial role. Supportive friendships can reinforce positive self-evaluations, while peer rejection or bullying can undermine self-esteem. Similarly, engagement in physical activities—especially those that promote mastery and teamwork—has been linked to increased confidence and a more positive self-concept. These diverse influences underscore that while self-concept development follows a general path, it is deeply shaped by a child's social, cultural, and emotional environment.

57.

Glossary

[glossary-page]

cisgender: an umbrella term used to describe people whose sense of personal identity and gender corresponds with their birth sex

foreclosure: a term for premature identity formation, which occurs when an adolescent adopts his or her parents' or society's role and values without questioning or analysis, according to Marcia's theory

gender: a term that refers to social or cultural distinctions of behaviors that are considered male or female

gender dysphoria: a condition listed in the DSM-5 in which people whose gender at birth is contrary to the identity with which they identify. This condition replaces "gender identity disorder."

gender expression: how one demonstrates gender (based on traditional gender role norms related to clothing, behavior, and interactions); can be feminine, masculine, androgynous, or somewhere along a spectrum

gender identity: the way that one thinks about gender and self-identifies can be woman, man, or genderqueer

identity achievement: Erikson's term for the attainment of identity, or the point at which a person understands who he or she is as a unique individual, in accord with past experiences and future plans; already questioned and made commitment according to Marcia's theory

identity vs. role confusion: Erikson's term for the fifth stage of development, in which the person tries to figure out "Who am I?" but is confused as to which of many possible roles to adopt

moratorium: an adolescent's choice of a socially acceptable way to postpone making identity-achievement decisions. Going to college is a typical example. Engaged in questioning, but not yet committing, according to Marcia's theory

role confusion: a situation in which an adolescent does not seem to know or care what his or her identity is. (Sometimes called identity diffusion or role diffusion)

self-concept: our perceptions of our behavior, abilities, and unique characteristics. It is essentially a mental picture of who you are as a person. For example, beliefs such as "I am a good friend" or "I am a kind person" are part of an overall self-concept

self-esteem: considered an essential component of emotional health, self-esteem encompasses both self-confidence and self-acceptance. It is the way individuals perceive themselves and their self-value

sex: a term that denotes the presence of physical or physiological differences between males and females

transgender: a term used to describe people whose sense of personal identity does not correspond with their birth sex

[/glossary-page]

58.

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PART VIII

MORAL DEVELOPMENT

Learning Objectives

- Identify perspectives on moral development
- Describe Kohlberg's theory of moral development
- Describe Gilligan's theory of moral development
- Identify influences on moral development
- Describe moral development during middle childhood and adolescence

Morality is a system of beliefs about what is right and good compared to what is wrong or bad. These are principles for how individuals ought to treat one another with respect to justice, others' welfare, and rights. In order to investigate how individuals understand morality, it is essential to measure their attitudes, beliefs, emotions, and behaviors that contribute to moral understanding. **Moral beliefs** are related to, but not identical to, moral behavior. It is possible to know the right thing to do but not actually do it. Moral belief is also not the same as knowledge of social conventions, which are arbitrary customs needed for the smooth operation of society.

Moral development focuses on the emergence, change, and understanding of morality over the lifespan. As it pertains to morality, developmentalists study the role of peers and parents in facilitating moral development, the role of conscience and values, socialization and cultural influences, empathy and altruism, and positive development. The interest in morality spans many disciplines (e.g., philosophy, economics, biology, and political science) and specializations within psychology (e.g., social, cognitive, and cultural). Moral developmental psychology research focuses on questions of origins and changes in morality across the lifespan.

59.

Theories of Moral Development

The founder of psychoanalysis, Freud (1962), proposed the existence of a tension between the needs of society and the individual. According to Freud, moral development proceeds when the individual's selfish desires are repressed and replaced by the values of important socializing agents in one's life (for instance, one's parents). A proponent of behaviorism, Skinner (1972) similarly focused on socialization as the primary force behind moral development. In contrast to Freud's notion of a struggle between internal and external forces, Skinner focused on the power of external forces (reinforcement contingencies) to shape an individual's development. While both Freud and Skinner focused on the external forces that bear on morality (parents in the case of Freud, and behavioral contingencies in the case of Skinner), Piaget (1965) focused on the individual's construction, construal, and interpretation of morality from a social-cognitive and social-emotional perspective.

Kohlberg (1963) expanded upon Piagetian notions of moral development. While they both viewed moral development as a result of a deliberate attempt to increase the coordination and integration of one's orientation to the world, Kohlberg provided a systematic 3-level, 6-stage sequence reflecting changes in moral judgment throughout the lifespan. Specifically, Kohlberg argued that development proceeds from a selfish desire to avoid punishment (personal), to a concern for group functioning (societal), to a concern for the consistent application of universal ethical principles (moral).

Turiel (1983) argued for a social domain approach to social cognition, delineating how individuals differentiate moral (fairness, equality, justice), societal (conventions, group functioning, traditions), and psychological (personal, individual prerogative) concepts from early in development throughout the lifespan. Over the past 40 years, research findings have supported this model, demonstrating how children, adolescents, and adults differentiate moral rules from conventional rules, identify the personal domain as a nonregulated domain, and evaluate multifaceted (or complex) situations that involve more than one domain.

For the past 20 years, researchers have expanded the field of moral development, applying moral judgment, reasoning, and emotion attribution to topics such as prejudice, aggression, theory of mind, emotions, empathy, peer relationships, and parent-child interactions.

Kohlberg's Theory of Moral Development

Kohlberg was interested in moral reasoning. Moral reasoning does not necessarily equate to moral behavior. Holding a particular belief does not mean that our behavior will always be consistent with the belief. To develop this theory, Kohlberg posed moral dilemmas to people of all ages, and then he analyzed their answers to find evidence of their particular stage of moral development. After presenting people with this and various

dilemmas, Kohlberg reviewed people's responses and placed them in different stages of moral reasoning. According to Kohlberg, an individual progresses from the capacity for pre-conventional morality (before age 9) to the capacity for conventional morality (early adolescence), and toward attaining post-conventional morality (once formal operational thought is attained), which only a few fully achieve.

Moral Stages According to Kohlberg

Using a stage model similar to Piaget's, Kohlberg proposed three levels, with six stages, of moral development. Individuals experience the stages universally and in sequence as they form beliefs about justice. He named the levels simply pre-conventional, conventional, and post-conventional.

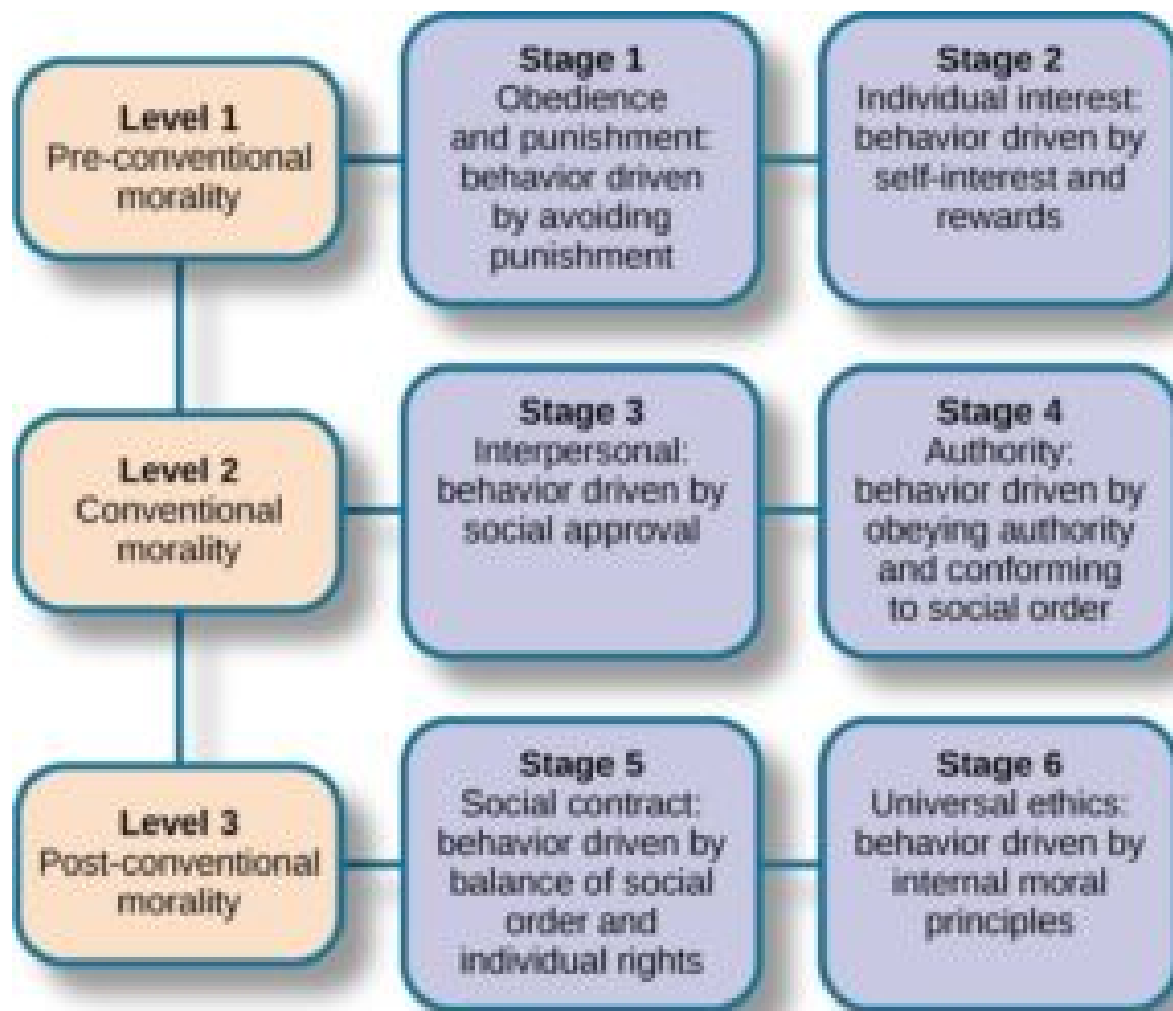


Figure 8.1.1. Kohlberg identified three levels of moral reasoning: pre-conventional, conventional, and post-conventional: Each level is associated with increasingly complex stages of moral development.

Preconventional: Obedience and Mutual Advantage

The preconventional level of moral development coincides approximately with the preschool period of life and with Piaget's preoperational period of thinking. At this age, the child is still relatively self-centered and insensitive to the moral effects of actions on others. The result is a somewhat short-sighted orientation to morality. Initially (Kohlberg's Stage 1), the child adopts an **ethics of obedience and punishment**—a sort of “morality of keeping out of trouble.” The rightness and wrongness of actions are determined by whether actions are rewarded or punished by authorities, such as parents or teachers. If helping yourself to a cookie brings affectionate smiles from adults, then taking the cookie is considered morally “good.” If it brings scolding instead, then it is morally “bad.” The child does not think about why an action might be praised or scolded; in fact, says Kohlberg, he would be incapable, at Stage 1, of considering the reasons even if adults offered them.

Eventually, the child learns not only to respond to positive consequences but also learns how to **produce** them by exchanging favors with others. The new ability creates Stage 2, **ethics of market exchange**. At this stage, the morally “good” action is one that favors not only the child but another person directly involved. A “bad” action is one that lacks this reciprocity. If trading the sandwich from your lunch for the cookies in your friend's lunch is mutually agreeable, then the trade is morally good; otherwise, it is not. This perspective introduces a type of fairness into the child's thinking for the first time. However, it still ignores the larger context of actions—the effects on people not present or directly involved. In Stage 2, for example, it would also be considered morally “good” to pay a classmate to do another student's homework—or even to avoid bullying—provided that both parties regard the arrangement as being fair.

Conventional: Conformity to Peers and Society

As children move into the school years, their lives expand to include a larger number and range of peers and (eventually) of the community as a whole. The change leads to **conventional morality**, which are beliefs based on what this larger array of people agree on—hence Kohlberg's use of the term “conventional.” At first, in Stage 3, the child's reference group are immediate peers, so Stage 3 is sometimes called the **ethics of peer opinion**. If peers believe, for example, that it is morally good to behave politely with as many people as possible, then the child is likely to agree with the group and to regard politeness as not merely an arbitrary social convention, but a moral “good.” This approach to moral belief is a bit more stable than the approach in Stage 2 because the child is taking into account the reactions not just of one other person, but of many. But it can still lead astray if the group settles on beliefs that adults consider morally wrong, like “Shoplifting for candy bars is fun and desirable.”

Eventually, as the child becomes a youth and the social world expands, even more, he or she acquires even larger numbers of peers and friends. He or she is, therefore, more likely to encounter disagreements about ethical issues and beliefs. Resolving the complexities lead to Stage 4, the **ethics of law and order**, in which the young person increasingly frames moral beliefs in terms of what the majority of society believes. Now, an

action is morally good if it is legal or at least customarily approved by most people, including people whom the youth does not know personally. This attitude leads to an even more stable set of principles than in the previous stage, though it is still not immune from ethical mistakes. A community or society may agree, for example, that people of a certain race should be treated with deliberate disrespect, or that a factory owner is entitled to dump wastewater into a commonly shared lake or river. To develop ethical principles that reliably avoid mistakes like these require further stages of moral development.

Postconventional: Social Contract and Universal Principles

As a person becomes able to think abstractly (or “formally,” in Piaget’s sense), ethical beliefs shift from acceptance of what the community **does** believe to the **process** by which community beliefs are formed. The new focus constitutes Stage 5, the **ethics of social contract**. Now an action, belief, or practice is morally good if it has been created through fair, democratic processes that respect the rights of the people affected. Consider, for example, the laws in some areas that require motorcyclists to wear helmets. In what sense are the laws about this behavior ethical? Was it created by consulting with and gaining the consent of the relevant people? Were cyclists consulted, and did they give consent? Or how about doctors or the cyclists’ families? Reasonable, thoughtful individuals disagree about how thoroughly and fairly these **consultation** processes should be. In focusing on the processes by which the law was created; however, individuals are thinking according to Stage 5, the ethics of social contract, regardless of the position they take about wearing helmets. In this sense, beliefs on both sides of a debate about an issue can sometimes be morally sound, even if they contradict each other.

Paying attention to due process certainly seems like it should help to avoid mindless conformity to conventional moral beliefs. As an ethical strategy, though, it too can sometimes fail. The problem is that an ethics of social contract places more faith in the democratic process than the process sometimes deserves, and does not pay enough attention to the content of what gets decided. In principle (and occasionally in practice), a society could decide democratically to kill off every member of a racial minority, but would deciding this by due process make it ethical? The realization that ethical means can sometimes serve unethical ends leads some individuals toward Stage 6, the **ethics of self-chosen, universal principles**. At this final stage, the morally good action is based on personally held principles that apply both to the person’s immediate life as well as to the larger community and society. The universal principles may include a belief in democratic due process (Stage 5 ethics), but also other principles, such as a belief in the dignity of all human life or the sacredness of the natural environment. At Stage 6, the universal principles will guide a person’s beliefs even if the principles mean occasionally disagreeing with what is customary (Stage 4) or even with what is legal (Stage 5).



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://wisconsin.pressbooks.pub/adolescentpsychology/?p=135#oembed-1>

Video 8.1.1. *Kohlberg's Six Stages of Moral Development* explains the stages of moral reasoning and applies it to an example scenario.

Kohlberg and the Heinz Dilemma

The Heinz dilemma is a frequently used example to help us understand Kohlberg's stages of moral development. How would you answer this dilemma? Kohlberg was not interested in whether you answer yes or no to the dilemma: Instead, he was interested in the reasoning behind your answer.

In Europe, a woman was near death from a special kind of cancer. There was one drug that the doctors thought might save her. It was a form of radium that a druggist in the same town had recently discovered. The drug was expensive to make, but the druggist was charging ten times what the drug cost him to make. He paid \$200 for the radium and charged \$2,000 for a small dose of the drug. The sick woman's husband, Heinz, went to everyone he knew to borrow the money, but he could only get together about \$1,000, which is half of what it cost. He told the druggist that his wife was dying and asked him to sell it cheaper or let him pay later. But the druggist said: "No, I discovered the drug and I'm going to make money from it." So Heinz got desperate and broke into the man's store to steal the drug for his wife. Should the husband have done that? (Kohlberg, 1969, p. 379)

From a theoretical point of view, it is not important what the participant thinks that Heinz should do. Kohlberg's theory holds that the justification the participant offers is what is significant, the form of their response. Below are some of many examples of possible arguments that belong to the six stages:

- Stage one (obedience): Heinz should not steal the medicine because he will consequently be put in prison, which will mean he is a bad person. OR Heinz should steal the medicine because it is only worth \$200 and not how much the druggist wanted for it; Heinz had even offered to pay for it and was not stealing anything else.
- Stage two (self-interest): Heinz should steal the medicine because he will be much happier if he saves his wife, even if he will have to serve a prison sentence. OR Heinz should not steal the medicine because prison is an awful place, and he would more likely languish in a jail cell than over his wife's death.
- Stage three (conformity): Heinz should steal the medicine because his wife expects it; he wants to be a good husband. OR Heinz should not steal the drug because stealing is bad, and he is not a criminal; he has tried to do everything he can without breaking the law, you cannot blame him.
- Stage four (law-and-order): Heinz should not steal the medicine because the law prohibits stealing, making it illegal. OR Heinz should steal the drug for his wife but also take the prescribed punishment for the crime as well as paying the druggist what he is owed. Criminals cannot just run around without regard for the law; actions have consequences.
- Stage five (social contract orientation): Heinz should steal the medicine because everyone has a right to choose life, regardless of the law. OR Heinz should not steal the medicine because the scientist has a right to fair compensation. Even if his wife is sick, it does not make his actions right.

- Stage six (universal human ethics): Heinz should steal the medicine because saving a human life is a more fundamental value than the property rights of another person. OR Heinz should not steal the medicine because others may need medicine just as badly.

Evaluating the Kohlberg's idea

Although research has supported Kohlberg's idea that moral reasoning changes from an early emphasis on punishment and social rules and regulations to an emphasis on more general ethical principles, as with Piaget's approach, Kohlberg's stage model is probably too simple. For one, people may use higher levels of reasoning for some types of problems but revert to lower levels in situations where doing so is more consistent with their goals or beliefs (Rest, 1979). Second, it has been argued that the stage model is particularly appropriate for Western, rather than non-Western, samples in which allegiance to social norms, such as respect for authority, may be particularly important (Haidt, 2001). In addition, there is frequently little correlation between how we score on the moral stages and how we behave in real life.

Perhaps the most important critique of Kohlberg's theory is that it may describe the moral development of males better than it describes that of females (Jaffee & Hyde, 2000). One of Kohlberg's students, Carol Gilligan (1982) has argued that, because of differences in their socialization, males tend to value principles of justice and rights, whereas females value caring for and helping others. Although there is little evidence for a gender difference in Kohlberg's stages of moral development (Turiel, 1998), it is true that girls and women tend to focus more on issues of caring, helping, and connecting with others than do boys and men (Jaffee & Hyde, 2000).¹

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Carol Gilligan and the Morality of Care



Carol Gilligan ²

As logical as they sound, Kohlberg’s stages of moral justice are not sufficient for understanding the development of moral beliefs. To see why this is, suppose that you have a student who asks for an extension of the deadline for an assignment. The justice orientation of Kohlberg’s theory would prompt you to consider issues of whether granting the request is fair. Would the late student be able to put more effort into the assignment than other students? Would the extension place a difficult demand on you since you would have less time to mark the assignments? These are important considerations related to the rights of students and the teacher. In addition to these, however, are considerations having to do with the responsibilities that you and the requesting student have for each other and for others. Does the student have a valid personal reason (illness, death in the family, etc.) for the assignment being late? Will the assignment lose its educational value if the student has to turn it in prematurely? These latter questions have less to do with fairness and rights, and more to do with taking care of and responsibility for students. They require a framework different from Kohlberg’s to be understood fully.

One such framework has been developed by Carol Gilligan, whose ideas center on the morality of care, or a system of beliefs about human responsibilities, care, and consideration for others. Gilligan proposed three moral positions that represent different extents or breadth of ethical care. Unlike Kohlberg, Piaget, or Erikson, she does not claim that the positions form a strictly developmental sequence, but only that they can be ranked hierarchically according to their depth or subtlety. In this respect, her theory is “semi-developmental” in a way similar to Maslow’s theory of motivation (Brown & Gilligan, 1992; Taylor, Gilligan, & Sullivan, 1995). The table below summarizes the three moral positions from Gilligan’s theory:

Positions of Moral Development According to Gilligan

Table 8.1.1. Gilligan’s three moral positions

Moral Position	Definition of What is Morally Good
Position 1: Survival orientation	Action that considers one’s personal needs only
Position 2: Conventional care	Action that considers others’ needs or preferences, but not one’s own
Position 3: Integrated care	Action that attempts to coordinate one’s own personal needs with those of others.

Position 1: Survival Orientation

The most basic kind of caring is a **survival orientation**, in which a person is concerned primarily with his or her own welfare. If a teenage girl with this ethical position is wondering whether to get an abortion, for example, she will be concerned entirely with the effects of the abortion on herself. The morally good choice

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will be whatever creates the least stress for herself and that disrupts her own life the least. Responsibilities to others (the baby, the father, or her family) play little or no part in her thinking.

As a moral position, a survival orientation is obviously not satisfactory for classrooms on a widespread scale. If every student only looked out for himself or herself, classroom life might become rather unpleasant! Nonetheless, there are situations in which focusing primarily on yourself is both a sign of good mental health and relevant to teachers. For a child who has been bullied at school or sexually abused at home, for example, it is both healthy and morally desirable to speak out about how bullying or abuse has affected the victim. Doing so means essentially looking out for the victim's own needs at the expense of others' needs, including the bully's or abuser's. Speaking out, in this case, requires a survival orientation and is healthy because the child is taking care of herself.

Position 2: Conventional Caring

A more subtle moral position is **conventional caring** (caring for others), in which a person is concerned about others' happiness and welfare, and about reconciling or integrating others' needs where they conflict with each other. In considering an abortion, for example, the teenager at this position would think primarily about what other people prefer. Do the father, her parents, and/or her doctor want her to keep the child? The morally good choice becomes whatever will please others the best. This position is more demanding than Position 1, ethically and intellectually, because it requires coordinating several persons' needs and values. But it is often morally insufficient because it ignores one crucial person: the self.

In classrooms, students who operate from Position 2 can be very desirable in some ways; they can be eager to please, considerate, and good at fitting in and at working cooperatively with others. Because these qualities are usually welcome in a busy classroom, teachers can be tempted to reward students for developing and using them. The problem with rewarding Position 2 ethics, however, is that doing so neglects the student's development—his or her own academic and personal goals or values. Sooner or later, personal goals, values, and identity need attention and care, and educators have a responsibility for assisting students to discover and clarify them.

Position 3: Integrated Caring

The most developed form of moral caring in Gilligan's model is **integrated caring**, the coordination of personal needs and values with those of others. Now the morally good choice takes account of everyone including yourself, not everyone except yourself. In considering an abortion, a woman at Position 3 would think not only about the consequences for the father, the unborn child, and her family but also about the consequences for herself. How would bearing a child affect her own needs, values, and plans? This perspective leads to moral beliefs that are more comprehensive but ironically are also more prone to dilemmas because the widest possible range of individuals are being considered.

In classrooms, integrated caring is most likely to surface whenever teachers give students wide, sustained freedom to make choices. If students have little flexibility about their actions, there is little room for considering anyone's needs or values, whether their own or others. If the teacher says simply: "Do the homework on page 50 and turn it in tomorrow morning," then the main issue becomes compliance, not a

moral choice. But suppose instead that she says something like this: “Over the next two months, figure out an inquiry project about the use of water resources in our town. Organize it any way you want—talk to people, read widely about it, and share it with the class in a way that all of us, including yourself, will find meaningful.” An assignment like this poses moral challenges that are not only educational but also moral since it requires students to make value judgments. Why? For one thing, students must decide what aspect of the topic really matters to them. Such a decision is partly a matter of personal values. For another thing, students have to consider how to make the topic meaningful or important to others in the class. Third, because the timeline for completion is relatively far in the future, students may have to weigh personal priorities (like spending time with friends or family) against educational priorities (working on the assignment a bit more on the weekend). As you might suspect, some students might have trouble making good choices when given this sort of freedom—and their teachers might therefore be cautious about giving such an assignment. But the difficulties in making choices are part of Gilligan’s point: integrated caring is indeed more demanding than caring based only on survival or on consideration of others. Not all students may be ready for it.³

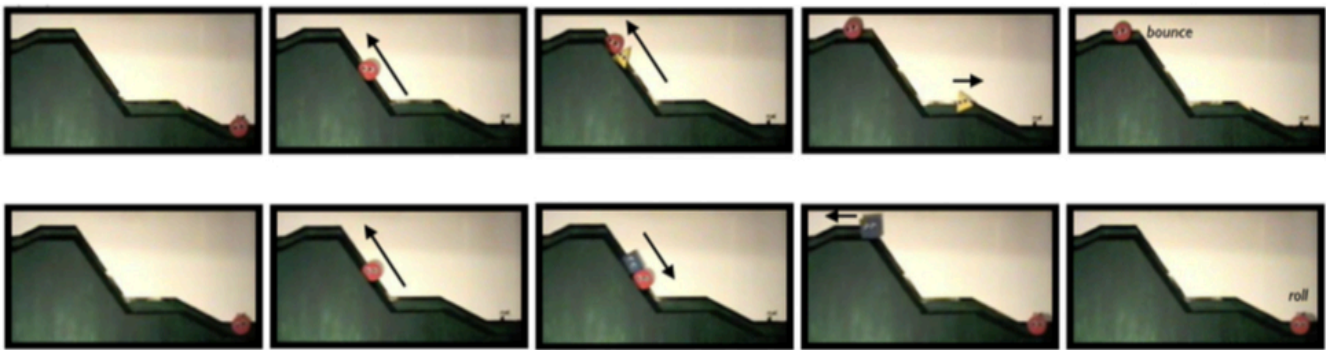
Are We Born Moral? Helpers and Hinderers

In a 2007 Hamlin, Wynn, and Bloom provided the first evidence that preverbal infants at 6 and at 10 months of age evaluate others on the basis of their helpful and unhelpful actions toward unknown third parties using what they called a “hill paradigm.” All events began with a “Climber” (most commonly a red, circular wooden character with large plastic ‘googly’ eyes) resting at the bottom of a hill containing two inclines, one shallow and one steep. To imply that the Climber’s goal was to reach the top of the hill, the googly portions of the Climber’s eyes were fixed diagonally upward such that he “gazed” uphill during the entirety of each event. “Helpers” and “Hinderers” were most commonly a blue square and a yellow triangle (whose googly eyes remained moveable); whether the square or the triangle was the Helper was counterbalanced across infants.

At the start of both Helper and Hinderer events, the Climber first moved easily up the shallow incline to a landing where he wiggled back and forth. He then made two unsuccessful attempts to climb the steeper incline; on his first attempt he made it 1/3 of the way up before coming back down and on his second attempt he made it 2/3 of the way. To imply the Climber’s movements up and down the hill reflected a failed intention to climb to the top, during each ascent the Climber decelerated as though fighting upward against gravity, while during each descent he accelerated as though falling down with gravity. On the Climber’s third attempt, Helper and Hinderer events diverged. During Helper events, the Helper entered the scene from the bottom

3. Educational Psychology by Kelvin Seifert and Rosemary Sutton is licensed under CC BY 4.0 . However, the link for the text is broken. The text with citation can be found at OER Services

of the hill and bumped the Climber up from below twice, pushing him to the top of the steep incline. The Climber then bounced up and down for several seconds (as though happy to have achieved his goal) and the Helper moved back down the hill and offstage. During Hinderer events, the Hinderer entered the scene from the top of the hill and bumped the Climber down from above twice, forcing him to the bottom of the steep incline. The Climber then rolled end-over-end to the very bottom of the hill and the Hinderer moved back up the hill and offstage. Infants viewed alternating Helper and Hinderer events until a pre-set habituation criterion was reached. Following habituation, infants were presented with soft, stuffed, doll images of the the Helper and Hinderer to reach for. Both 6- and 10-month-olds selectively reached for the Helper, leading Hamlin, Wynn, and Bloom (2007) to conclude that the infants had based their decisions on a preference for those who performed positive social acts over those who performed negative social acts, and that this preference formed the basis for the development of later moral cognition⁴



Six and ten-month-old infants were first habituated to a scene (top row) where a red circle or “climber” repeatedly attempts to climb a hill but is not successful. On the third attempt, the “climber” was either assisted by a yellow triangle, a “helper” who pushed the “climber” from behind or was pushed down (bottom row) by a blue, “hinderer” square. [footnote]Image retrieved from Hamlin, J.K. (2015) [Front. Psychol., 29 January 2015](https://doi.org/10.3389/fpsyg.2014.01563) | <https://doi.org/10.3389/fpsyg.2014.01563> is licensed under Creative Commons Attribution License (CC BY 4.0). (modified by Marie Parnes)[/footnote]

4. from Hamlin, J.K. (2015) [Front. Psychol., 29 January 2015](https://doi.org/10.3389/fpsyg.2014.01563) | <https://doi.org/10.3389/fpsyg.2014.01563> is licensed under Creative Commons Attribution License (CC BY 4.0). (modified by Maria Pagano)

Think It Over

Consider your decision-making processes. What guides your decisions? Are you primarily concerned with your personal well-being? Do you make choices based on what other people will think about your decision? Or are you guided by other principles? To what extent is this approach guided by your culture?

Media Attributions

- Private: Chapter 11 Helpers and Hinderers Number 2

60.

Influences on Moral Development

Like most aspects of development, influencing factors are multifaceted. Moral development is strongly influenced by interpersonal factors, such as family, peers, and culture. Intrapersonal factors also impact moral development, such as cognitive changes, emotions, and even neurodevelopment.

Interpersonal Influences

Children's interactions with caregivers and peers have been shown to influence their development of moral understanding and behavior. Researchers have addressed the influence of interpersonal interactions on children's moral development from two primary perspectives: socialization/internalization (Grusec & Goodnow, 1994; Kochanska & Askan, 1995; Kochanska, Askan, & Koenig, 1995) and social domain theory (Turiel, 1983; Smetana 2006). Research from the social domain theory perspective focuses on how children actively distinguish moral from conventional behavior based in part based on the responses of parents, teachers, and peers (Smetana, 1997). Adults tend to respond to children's moral transgressions (e.g., hitting or stealing) by drawing the child's attention to the effect of his or her action on others and doing so consistently across various contexts.

In contrast, adults are more likely to respond to children's conventional misdeeds (e.g., wearing a hat in the classroom, eating spaghetti with fingers) by reminding children about specific rules and doing so only in certain contexts (e.g., at school but not at home) (Smetana, 1984; 1985). Peers respond mainly to moral but not conventional transgressions and demonstrate emotional distress (e.g., crying or yelling) when they are the victim of moral but not conventional transgressions (Smetana, 1984). Children then use these different cues to help determine whether behaviors are morally or conventionally wrong.

Research from a socialization/internalization perspective focuses on how adults pass down standards of behavior to children through parenting techniques and why children do or do not internalize those values (Grusec & Goodnow, 1994; Kochanska & Askan, 1995). From this perspective, moral development involves children's increasing compliance with and internalization of adult rules, requests, and standards of behavior. Using these definitions, researchers find that parenting behaviors vary in the extent to which they encourage children's internalization of values and that these effects depend partially on child attributes, such as age and temperament (Grusec & Goodnow, 1994). For instance, Kochanska (1997) showed that gentle parental discipline best promotes conscience development in temperamentally fearful children. However, the same parental responsiveness and a mutually responsive parent-child orientation best promote conscience development in temperamentally fearless children. These parental influences exert their effects through

multiple pathways, including increasing children's experience of moral emotions (e.g., guilt, empathy) and their self-identification as moral individuals (Kochanska et al., 2010).

Moral Development in the Family

In the formation of children's morals, no outside influence is greater than that of the family. Through punishment, reinforcement, and both direct and indirect teaching, families instill morals in children and help them to develop beliefs that reflect the values of their culture. Although families' contributions to children's moral development are broad, there are particular ways in which morals are most effectively conveyed and learned.

Justice

Families establish rules for right and wrong behavior, which are maintained through positive reinforcement and punishment. Positive reinforcement is the reward for good behavior and helps children learn that certain actions are encouraged above others. Punishment, by contrast, helps to deter children from engaging in bad behaviors, and from an early age helps children to understand that actions have consequences. This system additionally helps children to make decisions about how to act, as they begin to consider the outcomes of their behavior.

Fairness

The notion of what is fair is one of the central moral lessons that children learn in the family context. Families set boundaries on the distribution of resources, such as food and living spaces, and allow members different privileges based on age, gender, and employment. The way in which a family determines what is fair affects children's development of ideas about rights and entitlements, and also influences their notions of sharing, reciprocity, and respect.

Personal Balance

Through understanding principles of fairness, justice, and social responsibilities, children learn to find a balance between their own needs and wants and the interests of the greater social environment. By placing limits on their desires, children benefit from a greater sense of love, security, and shared identity. At the same time, this connectedness helps children to refine their own moral system by providing them with a reference for understanding right and wrong.

Social Roles

In the family environment, children come to consider their actions not only in terms of justice but also in terms of emotional needs. Children learn the value of social support from their families and develop motivations based on kindness, generosity, and empathy, rather than on only personal needs and desires. By learning to care for the interests and well-being of their family, children develop concern for society as a whole.

Morality and Culture

The role of culture on moral development is an important topic that raises fundamental questions about what is universal and what is culturally specific regarding morality and moral development. Many research traditions have examined this question, with social-cognitive and structural-developmental positions theorizing that morality has a universal requirement to it, drawing from moral philosophy. The expectation is that if morality exists, it has to do with those values that are generalizable across groups and cultures. Alternatively, relativistic cultural positions have been put forth mostly by socialization theories that focus on how cultures transmit values rather than what values are applied across groups and individuals.

As an example of some of the debates, Shweder, Mahapatra, and Miller (1987) argued for moral relativism or the notion that different cultures defined the boundaries of morality differently. In contrast, Turiel and Perkins (2004) argued for the universality of morality, focusing largely on evidence throughout the history of resistance movements that fight for justice through the affirmation of individual self-determination rights. In an update on the debate between moral relativism and moral universality, Miller (2006) provides a thoughtful review of the cultural variability of moral priorities. Miller argues that rather than variability in what individuals consider moral (fairness, justice, rights), there is cultural variability in the priority given to moral considerations (e.g., the importance of prosocial helping). Wainryb (2006), in contrast, reviews extensive literature that has demonstrated that children in diverse cultures such as the U.S., India, China, Turkey, and Brazil share a pervasive view about upholding fairness and the wrongfulness of inflicting harm on others. Cultures vary in terms of conventions and customs, but not principles of fairness, which appear to emerge very early in development, before socialization influences. Wainryb and colleagues (1991) shows that many apparent cultural differences in moral judgments are actually due to different informational assumptions or beliefs about the way the world works. When people hold different beliefs about the effects of actions or the status of different groups of people, their judgments about the harmfulness or fairness of behaviors often differ, even when they are applying the same moral principles.

Another powerful socializing mechanism by which values are transmitted is religion, which is for many inextricably linked to cultural identity. Nucci and Turiel (1993) assessed individuals' reactions to dictates from God, and the distinctions in their reactions to God's moral (e.g., stealing) and conventional (e.g., day of worship) dictates. One explicit manner in which societies can socialize individuals is through moral education. Solomon and colleagues (1988) present evidence from a study that integrated both direct instruction and

guided reflection approaches to moral development, with evidence for resultant increases in spontaneous prosocial behavior. Finally, studies of moral development and cultural issues cover many subtopics. For instance, a recent review of studies examining social exclusion identifies cultural similarities in the evaluation of exclusion across a range of societies and cultures (Hitti, Mulvey & Killen, 2011).

Intrapersonal Influences

Moral questions tend to be emotionally charged issues that evoke strong affective responses. Consequently, emotions likely play an important role in moral development. However, there is currently little consensus among theorists on how emotions influence moral development. Psychoanalytic theory, founded by Freud, emphasizes the role of guilt in repressing primal drives. Research on prosocial behavior has focused on how emotions motivate individuals to engage in moral or altruistic acts. Social-cognitive development theories have recently begun to examine how emotions influence moral judgments. Intuitionist theorists assert that moral judgments can be reduced to immediate, instinctive emotional responses elicited by moral dilemmas.

Research on socioemotional development and prosocial development has identified several “moral emotions,” which are believed to motivate moral behavior and influence moral development (Eisenberg, 2000, for a review). The primary emotions consistently linked with moral development are guilt, shame, empathy, and sympathy. Guilt has been defined as “an agitation-based emotion or painful feeling of regret that is aroused when the actor causes, anticipates causing or is associated with an aversive event” (Fergusen & Stegge, 1998). Shame is often used synonymously with guilt but implies a more passive and dejected response to a perceived wrong. Guilt and shame are considered “self-conscious” emotions because they are of primary importance to an individual’s self-evaluation.

In contrast to guilt and shame, empathy and sympathy are considered other-oriented moral emotions. Empathy is commonly defined as an affective response produced by the apprehension or comprehension of another’s emotional state, which mirrors the other’s affective state. Similarly, sympathy is defined as an emotional response produced by the apprehension or comprehension of another’s emotional state, which does not mirror the other’s affect but instead causes one to express concern or sorrow for the other (Eisenberg, 2000).

The relation between moral action and moral emotions has been extensively researched. Very young children have been found to express feelings of care, and empathy towards others, showing concerns for other’s well being (Eisenberg, Spinard, & Sadovsky, 2006). Research has consistently demonstrated that when empathy is induced in an individual, he or she is more likely to engage in subsequent prosocial behavior (Batson 2010; Eisenberg, 2000 for review). Additionally, other research has examined emotions of shame and guilt concerning children’s emphatic and prosocial behavior (Zahn-Waxler & Robinson, 1992).

While emotions serve as information for children in their interpretations about the moral consequences of acts, the role of emotions in children’s moral judgments has only recently been investigated. Some approaches to studying emotions in moral judgments come from the perspective that emotions are automatic intuitions

that define morality (Greene et al., 2001; Haidt, 2001). Other approaches emphasize the role of emotions as evaluative feedback that help children interpret acts and consequences (Turiel & Killen, 2010). Research has shown that children attribute different emotional outcomes to actors involved in moral transgressions than those involved in conventional transgressions (Arsenio, 1988; Arsenio & Fleiss, 1996). Emotions may help individuals prioritize among different information and possibilities and reduce information processing demands in order to narrow the scope of the reasoning process (Lemerise & Arsenio, 2000). In addition, Malti, Gummerum, Keller, and Buchmann (2009), found individual differences in how children attribute emotions to victims and victimizers.

Link To Learning

Parenting has the largest impact on adolescent moral development. Read more here in this article, [“Building Character: Moral Development in Adolescence”](#) from the Center for Parent and Teen Communication.

61.

Moral Reasoning in Adolescence



As children become increasingly independent, they also develop more nuanced thinking about morality, or what is right or wrong. As their cognitive, emotional, and social development continue to mature, their understanding of morality expands, and their behavior becomes more closely aligned with their values and beliefs. Therefore, moral development describes the evolution of these guiding principles and is demonstrated by the ability to apply these guidelines in daily life.

Understanding moral development is important in this stage, where individuals make so many important decisions and gain more and more legal responsibility.

As children's cognitive abilities advance, they begin to develop a more flexible and nuanced understanding of moral rules. They move beyond a rigid, black-and-white view of right and wrong and start to recognize that the morality of a behavior can depend on context and intention. For example, by around age 7, children begin to understand the concept of white lies—realizing that telling the truth is not always inherently good and that lying is not always inherently bad. They may see that lying to protect someone's feelings can be acceptable. As they grow older, children also begin to grasp more complex moral situations, such as the concept of self-defense, where causing harm may be justified under certain circumstances.

Older children and adolescents are receptive to their culture, to the models they see at home, in school, and in the mass media. These observations influence moral reasoning and moral behavior. When children are younger, their family, culture, and religion greatly influence their moral decision-making. During the early adolescent period, peers have a much greater influence. Peer pressure can exert a powerful influence because friends play a more significant role in teens' lives.

Furthermore, the new ability to think abstractly enables youth to recognize that rules are simply created by other people. As a result, teens begin to question the absolute authority of parents, schools, government, and other traditional institutions (Vera-Estay, Dooley, & Beauchamp, 2015). By late adolescence, most teens are less rebellious as they have begun to establish their own identity, their own belief system, and their place in the world.

Unfortunately, some children have life experiences that may interfere with their moral development. Traumatic experiences may cause them to view the world as unjust and unfair. Additionally, social learning also impacts moral development. Children may have observed the adults in their lives, making immoral decisions

that disregarded the rights and welfare of others, leading these youth to develop beliefs and values that are contrary to the rest of society. That being said, adults have opportunities to support moral development by modeling the moral character that we want to see in our children. Parents are particularly important because they are generally the original source of moral guidance. Authoritative parenting facilitates children's moral growth better than other parenting styles, and one of the most influential things a parent can do is to encourage the right kind of peer relations (McDevitt et al., 2012). While parents may find this process of moral development difficult or challenging, it is important to remember that this developmental step is essential to their children's well-being and ultimate success in life.

As mentioned previously, Lawrence Kohlberg (1984) argued that moral development moves through a series of stages, and reasoning about morality becomes increasingly complex (somewhat in line with increasing cognitive skills, as per Piaget's stages of cognitive development). In middle childhood and early adolescence young people begin to care about how situational outcomes impact others and want to please and be accepted (conventional morality). At this developmental phase, people are able to value the good that can be derived from holding to social norms in the form of laws or less formalized rules. From adolescence and beyond, adolescents begin to employ abstract reasoning to justify behaviors. Moral behavior is based on self-chosen ethical principles that are generally comprehensive and universal, such as justice, dignity, and equality, which is postconventional morality.

Forming a Sense of Rights and Responsibilities

When it comes to schooling and teaching, moral choices are not restricted to occasional dramatic incidents but are woven into almost every aspect of classroom life. Imagine this simple example. Suppose that you are teaching, reading to a small group of second-graders, and the students are taking turns reading a story out loud. Should you give every student the same amount of time to read, even though some might benefit from having additional time? Or should you give more time to the students who need extra help, even if doing so bores classmates and deprives others of equal shares of "floor time"? Which option is fairer, and which is more considerate? Simple dilemmas like this happen every day at all grade levels simply because students are diverse, and because class time and a teacher's energy are finite.

Embedded in this rather ordinary example are moral themes about fairness or justice, on the one hand, and about consideration or care on the other. It is important to keep both themes in mind when thinking about how students develop beliefs about right or wrong. A **morality of justice** is about human rights—or, more specifically, about respect for fairness, impartiality, equality, and individuals' independence. A **morality of care**, on the other hand, is about human responsibilities—more specifically, about caring for others, showing consideration for individuals' needs, and interdependence among individuals. Students and teachers need both forms of morality. In the next sections, therefore, we explain a major example of each type of developmental theory, beginning with the morality of justice.

Character Development: Integrating Ethical Understanding, Care, and Action

The theories described so far all offer frameworks for understanding how children grow into youth and adults. From a teacher's point of view, though, the theories are all limited in two ways. One problem is that they focus primarily on cognition—on what children *think* about ethical issues—more than on emotions and actions. The other is that they say little about how to encourage ethical development. Encouragement is part of teachers' jobs, and doing it well requires understanding not only what students know about ethics, but also how they feel about it and what ethical actions they are prepared to take.

Many educators have recognized the need for children to be guided in the development of ethics and morals, and a number of them have, therefore, developed practical programs that integrate ethical understanding, care, and action. As a group, the programs are often called **character education**. However, individual programs have a variety of specific names (for example, moral dilemma education, integrative ethical education, social competence education, and many more). Details of the programs vary, but they all combine a focus on ethical knowledge with attention to ethical feelings and actions (Berkowitz & Bier, 2006; Narvaez, 2010). Character education programs go well beyond just teaching students to obey ethical rules, such as “Always tell the whole truth” or “Always do what the teacher tells you to do.” Such rules require very little thinking on the part of the student, and there are usually occasions in which a rule that is supposedly universal needs to be modified, “bent,” or even disobeyed. (For example, if telling the whole truth might hurt someone's feelings, it might sometimes be more considerate—and thus more ethical—to soften the truth a bit, or even to say nothing at all.)

Instead, character education is about inviting students to think about the broad questions of his or her life, such as “What kind of person should I be?” or “How should I live my life?” Thoughtful answers to such broad questions help to answer a host of more specific questions that have ethical implications. For example, “Should I listen to the teacher right now, even if she is a bit boring, or just tune out?” or “Should I offer to help my friend with the homework she is struggling with, or hold back, so that learns to do it herself?” Most of the time, there is not enough time to reason about questions like these deliberately or consciously. Responses have to become intuitive, automatic and **embodied**—meaning that they have to be based on fairly immediate emotional responses (Narvaez, 2009). The goal of character education is to develop students' capacities to respond to daily ethical choices not only consciously and cognitively, but also intuitively and emotionally. To the extent that this goal is met, students can indeed live a good, ethically responsible life.

Schoolwide Programs of Character Education

In the most comprehensive approaches to character education, an entire school commits itself to develop students' ethical character, despite the immense diversity among students (Minow, Schweder, & Markus, 2008). All members of the staff—not just teachers and administrators, but also custodians and educational

assistants—focus on developing positive relationships with students. The underlying theme that develops is one of cooperation and mutual care, not competition. Fairness, respect, and honesty pervade class and school activities; discipline, for example, focuses on solving conflicts between students and between students and teachers, rather than on rewarding obedience or punishing wrong-doers. The approach requires significant reliance on democratic meetings and discussions, both in classrooms and wherever else groups work together in school.

Building a Culture of Kindness



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://wisconsin.pressbooks.pub/adolescentpsychology/?p=141#oembed-1>

Video 8.3.1. *Building a Culture of Kindness* with a Day of Services discusses ways that schools are building character education into their programs and the impact it is having on students.

Classroom Programs of Character Education

Even if a teacher is teaching character education simply within her classroom, there are many strategies available. The goal, in this case, is to establish the classroom as a place where everyone feels included, and where everyone treats everyone else with civility and respect. Conflicts and disagreements may still occur, but in a caring community, they can be resolved without undue anger or hostility. Here are a few ways to work toward this sort of classroom:

- Use class meetings to decide on as many important matters as possible—such as the expected rules of behavior, important classroom activities, or ongoing disagreements.
- Try arranging for students to collaborate on significant projects and tasks.
- Arrange a “Buddies” program in which students of different grade levels work together on a significant task. Older students can sometimes assist younger students by reading to them, by listening to them read, or both. If an older student is having trouble with reading himself or herself, furthermore, a reading buddies program can sometimes also be helpful to the older student.
- Familiarize students with conflict resolution strategies and practice using them when needed.
- Many areas of curriculum lend themselves to discussions about ethical issues. Obvious examples are

certain novels, short stories, and historical events. However, ethical issues lurk elsewhere as well.

Teaching nutrition, for example, can raise issues about the humane treatment of animals that will be slaughtered for food, and about the ethical acceptability of using a large number of grains to feed animals even though many people in the world do not have enough to eat.

- Service learning projects can be very helpful in highlighting issues of social justice. Planning, working at, and reflecting about a local soup kitchen, tutoring students from low-income families, performing simple repairs on homes in need: projects like these broaden knowledge of society and the needs of its citizens.

62.

conventional moral development: stages 3 and 4 of moral development where morality is internalized, and the concern is on society norms

pre-conventional moral development: first 2 stages of moral development where morality comes from outside the person, and the concern is on physical consequences of actions

post-conventional moral development: stages 5 and 6 of moral development where morality comes from personal understanding of rights and justice, regardless of whether that understanding matches societal norms

63.

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PART IX

CHANGING FAMILY RELATIONSHIPS

Learning Objectives

- Identify the three key components of good parenting
- Describe the impact of different parenting styles on children's development
- Examine changes in family relationships during middle childhood and adolescence
- Explore non-traditional family structures and changes of family structure over time.

As older children work to form their identities, they pull away from their parents, and the peer group becomes very important (Shanahan, McHale, Osgood, & Crouter, 2007). Despite spending less time with their parents, most teens report positive feelings toward them (Moore, Guzman, Hair, Lippman, & Garrett, 2004). Warm and healthy parent-child relationships have been associated with positive child outcomes, such as better grades and fewer school behavior problems, in the United States as well as in other countries (Hair et al., 2005).

Although peers take on greater importance during adolescence, family relationships remain essential too. One of the fundamental changes during adolescence involves a renegotiation of parent-child relationships. As adolescents strive for more independence and autonomy during this time, different aspects of parenting become more salient.

In this chapter, we will explore the changing relationship between older and their families. We will consider the key components of effective parenting, the impact of family on children's development, and we will also discuss how the family structures have evolved over the past several decades.

64.

Function of Family

There is no doubt that family plays a central role in a child's development. According to developmental researcher Kathleen Berger and Tzipi Weiss, the family serves five key functions, which are often represented as a pyramid. At the base are the most basic needs—such as providing food, clothing, and shelter—which most families are able to meet. However, as we move higher up the pyramid, the functions become more complex and developmentally significant, highlighting the family's role in supporting a child's physical, cognitive, and socioemotional growth. While basic survival needs are essential, it is equally important to recognize that family influences everything from emotional security and learning opportunities to socialization and identity formation.

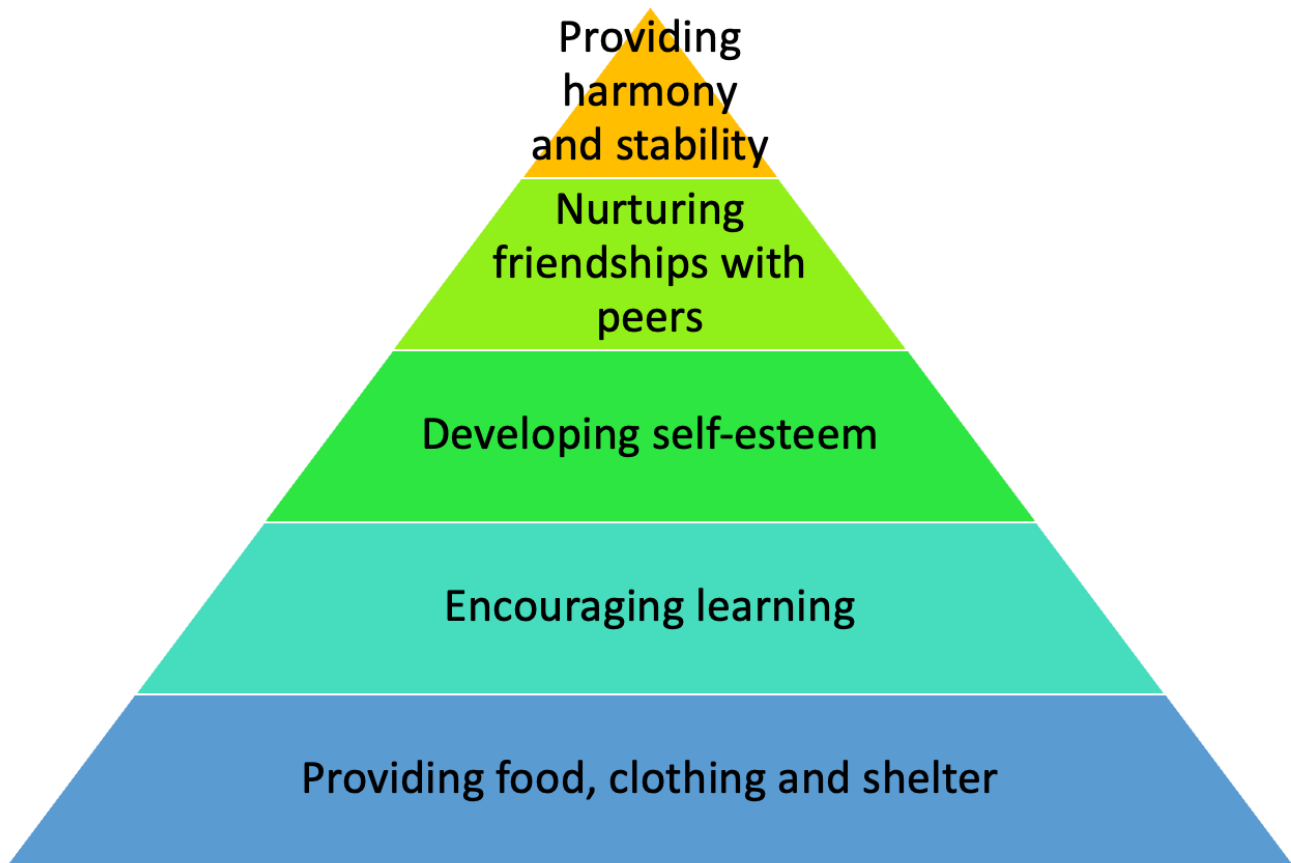


Figure 9.1.1. Five functions of family.

Different Parenting Styles

Parents play a crucial role in children’s development and many researchers have been interested in exploring various parenting styles. Keep in mind that most parents do not follow any model completely. Real people tend to fall somewhere in between these styles. Moreover, sometimes, parenting styles change from one child to the next or in times when the parent has more or less time and energy for parenting. Parenting styles can also be affected by concerns the parent has in other areas of their life. For example, parenting styles tend to become more authoritarian when parents are tired and perhaps more authoritative when they are more energetic. Sometimes parents seem to change their parenting approach when others are around, maybe because they become more self-conscious as parents or are concerned with giving others the impression that they are a “tough” parent or an “easy-going” parent. Of course, parenting styles may reflect the type of parenting someone saw modeled while growing up.

Baumrind's Parenting Styles

Baumrind (1971) offers a model of parenting that includes three styles. In 1983, Maccoby and Martin modified this model, and it has become one of the most commonly referenced models for describing patterns of parenting. The current model is comprised of two components of parenting: the parent’s responsiveness and the parent’s demandingness. **Responsiveness** is the connection that the parent facilitates through love, affection, warmth, and support. Unresponsive parents may ignore a child’s need for connection or even reject the child. **Demandingness** is the parent’s control and management of the child’s behavior; this includes setting expectations, limits, and enforcing consequences. The combination of these two parenting behaviors defines the parenting style.

		Expectations/Control	
		Low	High
Warmth/ Responsiveness	Low	uninvolved	authoritarian
	High	permissive	authoritative

Figure 9.1.2. Baumrind's parenting styles.

The first, the **uninvolved (or neglectful) parenting** style. These parents are low on responsiveness and often disengaged from their children. They are also low on demandingness, with little control over their children's behavior. As a result, their children can be withdrawn, non-compliant, aggressive, and have insecure attachments to others. They suffer in school and in their relationships with their peers (Gecas & Self, 1991).

The **permissive parent** is highly responsive but lacks control. These parents are warm and communicative but provide little structure for their children. They may act as a friend to their child rather than an authority figure. Children are allowed to make their own rules and determine their activities. Children may fail to learn self-discipline and be relatively immature. They have low social competence and may feel somewhat insecure because they do not know the limits. These children may also be demanding, rebellious, and aggressive.

The **authoritarian parent** is low on responsiveness and high on demandingness. This parent makes the rules, and the children are expected to be obedient. Baumrind suggests that authoritarian parents tend to place maturity demands on their children that are unreasonably high and tend to be aloof and distant. Consequently, children reared in this way may fear rather than respect their parents and, because their parents do not allow discussion, may take out their frustrations on safer targets – perhaps as bullies toward peers. These children tend to have lower self-control and are less independent. They also may be more aggressive, resistant to correction, or anxious.

Finally, the **authoritative parent** is responsive and reasonably in control. Parents allow negotiation where appropriate and discipline matches the severity of the offense. As a result, their children are friendly, socially competent, confident, self-reliant, cooperative, successful, and happy (Chao, 2001; Stewart and Bond, 2002).

Lemasters and Defrain's Parenting Model

Lemasters and Defrain (1989) offered yet another model of parenting. This model is interesting because it looks more closely at the motivations of the parent and suggests that parenting styles are often designed to meet the psychological needs of the parent rather than the developmental needs of the child.

The **martyr** is a parent who will do anything for the child, even tasks that the child should do for himself or herself. All of the good deeds performed for the child, in the name of being a “good parent,” may be used later should the parent want to gain compliance from the child. If a child goes against the parent's wishes, the parent can remind the child of all of the times the parent helped the child and evoke a feeling of guilt so that the child will do what the parent wants. The child learns to be dependent and manipulative as a result.

The **pal** is like the permissive parent described in Baumrind's model above. The pal wants to be the child's friend. Perhaps the parent is lonely, or perhaps the parent is trying to win a popularity contest against an ex-spouse. Pals let children do what they want and focus most on being entertaining and fun. They set few limitations. Consequently, the child may have little self-discipline and may try to test limits with others.

The **police officer/drill sergeant** style of parenting is similar to the authoritarian parent described

above. The parent focuses primarily on making sure that the child is obedient and that the parent has full control of the child. Sometimes this can be taken to extremes by giving the child tasks that are really designed to check on their level of obedience. For example, the parent may require that the child fold the clothes and place items back in the drawer in a particular way. If not, the child might be scolded or punished for not doing things “right.” This type of parent has a very difficult time allowing the child to grow and learn to make decisions independently. Furthermore, the child may have much resentment toward the parent that is displaced on others.

The **teacher-counselor** parent is one who pays much attention to expert advice on parenting and who believes that as long as all of the steps are followed, the parent can rear a perfect child. “What is wrong with that?” you might ask. There are two major problems with this approach. First, the parent is taking all of the responsibility for the child’s behavior, at least indirectly. If the child has difficulty, the parent feels responsible and thinks that the solution lies in reading more advice and trying more diligently to follow that advice. Parents can certainly influence children, but thinking that the parent is fully responsible for the child’s outcome is faulty. A parent can only do so much and can never have full control over the child. Another problem with this approach is that the child may get an unrealistic sense of the world and what can be expected from others. For example, if a teacher-counselor parent decides to help the child build self-esteem and has read that telling the child how special he or she is or how important it is to compliment the child on a job well done, the parent may convey the message that everything the child does is exceptional or extraordinary. A child may come to expect that all of his efforts warrant praise, and in the real world, this is not something one can expect. Perhaps children get more of a sense of pride from assessing their performance than from having others praise their efforts.

So what is left? Lemasters and Defrain (1989) suggest that the **athletic coach style of parenting** is best. The principles of coaching are what are important to Lemasters and Defrain. A coach helps players form strategies, supports their efforts, gives feedback on what went right and what went wrong, and stands at the sideline while the players perform. Coaches and referees make sure that the rules of the game are followed and that all players adhere to those rules.

Similarly, the athletic coach as a parent helps the child understand what needs to happen in certain situations, whether in friendships, school, or home life, and encourages and advises the child about how to manage these situations. The parent does not intervene or do things for the child. Instead, the parent’s role is to guide while the child learns first hand how to handle these situations. The rules for behavior are consistent and objective and presented in that way. So, a child who is late for dinner might hear the parent respond in this way, “Dinner was at six o’clock.” Rather than, “You know good and well that we always eat at six. If you expect me to get up and make something for you now, you have got another thing coming! Just who do you think you are showing up late and looking for food? You’re grounded until further notice!”

The most important thing to remember about parenting is that parents can always improve. They can practice being more objective. They can learn about what is reasonable to expect of a child and their stage of development. They can recognize their own needs and limitations. Parenting is more difficult when parents

have physical or psychological needs that interfere with decision making. Some of the best advice for parents is to try not to take the child's actions personally, and be as objective as possible.

Media Attributions

- Berger's proposal of family functions

Changes of Parent-Child Relationship

It is widely recognized that the parent–child relationship evolves significantly throughout a child’s development, with some of the most abrupt changes occurring during adolescence. Despite common perception, it appears that most teens do not experience adolescent “storm and stress” to the degree once famously suggested by G. Stanley Hall, a pioneer in the study of adolescent development. Only small numbers of teens have major conflicts with their parents (Steinberg & Morris, 2001), and most disagreements are minor. For example, in a study of over 1,800 parents of adolescents from various cultural and ethnic groups, Barber (1994) found that conflicts occurred over day-to-day issues such as homework, money, curfews, clothing, chores, and friends. These disputes occur because an adolescent’s drive for independence and autonomy conflicts with the parent’s supervision and control. These types of arguments tend to decrease as teens develop (Galambos & Almeida, 1992).

Increase in Autonomy

Emotional autonomy is a psychological separation from one’s caregivers. It includes a progressive decrease in dependency on their caregivers, individualization, parental de-idealization, and perceiving one’s parents as people (Steinberg & Silberberg, 1986). Despite previous thinking, this is not meant to be the ‘storm and stress’ of adolescent detachment from their family; instead, it is a peaceful process of becoming an individual. Teens are not detaching from their caregivers, but changing their childhood perceptions and dependencies on them. Adolescents will de-idolize their parents and thinking of them more as people.

While the process of developing emotional autonomy is a normal one that usually adaptive in the long-run, it can be distressing at the time. Teens may be experiencing a loss as they lose these childhood conceptualizations of the parents (Hill & Holmbeck, 1986). However, in the end, this emotional distance will allow adolescents to rely more on themselves and develop independence.

Behavioral autonomy, also called decisional autonomy, is the ability to make decisions about one’s behavior (Bosma et al., 1996). Emotional autonomy and behavioral autonomy are highly correlated. As teens become more emotionally autonomous, they desire to make more of their own decisions. With maturation comes increased emotional and behavioral autonomy. However, too much behavioral autonomy too early has been associated with poor adjustment in young teens. Behavioral autonomy in early adolescence has been found to result in higher risk for deviance and poor academic performance (Beyers & Goossens, 1999). Often, parents wonder how much autonomy to allow their teen and at what age.

Co-regulation refers to a form of supervision in which the parent or caregiver provides general oversight while gradually allowing the child to take more responsibility for their own decision-making. As children grow

older—particularly as they enter adolescence—they seek greater independence, and co-regulation becomes increasingly common in the parent-child relationship. Rather than making every decision for the child, parents in a co-regulatory role offer guidance, set boundaries, and provide support, while giving the child space to practice autonomy and self-regulation within those limits.

Increase in Conflict

Although most adolescents do not experience severe or long-term conflict with their parents, research consistently shows that the frequency of conflict tends to increase during adolescence. This rise is largely driven by adolescents' cognitive and social development. As their thinking becomes more sophisticated, they begin to adopt a more egalitarian view of family relationships. Adolescents start to question authority and increasingly see certain domains—such as clothing choices, social life, and use of free time—as matters of personal autonomy rather than areas for parental control. These shifting perceptions often lead to more frequent disagreements as families renegotiate boundaries and expectations.

Despite the increase in conflict, adolescents generally maintain a positive overall perception of their relationship with their parents. Many still view their parents as supportive and caring, even amid more frequent disputes.

Crucially, the manner in which conflicts are managed plays a central role in shaping the long-term quality of the parent-adolescent relationship. When conflicts are resolved through constructive strategies—such as open communication, mutual respect, and problem-solving—they can actually strengthen emotional closeness. In contrast, negative conflict resolution involving emotional volatility, yelling, or avoidance can create greater distance and misunderstandings, potentially harming the parent-child bond over time.

Changes in Sibling Relationships

Siblings spend a considerable amount of time with each other and offer a unique relationship that is not found with same-age peers or with adults. Siblings play an important role in the development of social skills. Cooperative and pretend play interactions between younger and older siblings can teach empathy, sharing, and cooperation (Pike, Coldwell, & Dunn, 2005), as well as negotiation and conflict resolution (Abuhatoum & Howe, 2013). However, the quality of sibling relationships is often mediated by the quality of the parent-child relationship and the psychological adjustment of the child (Pike et al., 2005). For instance, more negative interactions between siblings have been reported in families where parents had poor patterns of communication with their children (Brody, Stoneman, & McCoy, 1994). Children who have emotional and behavioral problems are also more likely to have negative interactions with their siblings. However, the psychological adjustment of the child can sometimes be a reflection of the parent-child relationship. Thus,

when examining the quality of sibling interactions, it is often difficult to tease out the separate effect of adjustment from the effect of the parent-child relationship.

While parents want positive interactions between their children, conflicts are going to arise, and some confrontations can be the impetus for growth in children's social and cognitive skills. The sources of conflict between siblings often depend on their respective ages. Dunn and Munn (1987) revealed that over half of all sibling conflicts in early childhood were disputes about property rights. By middle childhood, this starts shifting toward control over social situations, such as what games to play, disagreements about facts or opinions, or rude behavior (Howe, Rinaldi, Jennings, & Petrakos, 2002). Researchers have also found that the strategies children use to deal with conflict change with age, but that this is also tempered by the nature of the conflict. Abuhatum and Howe (2013) found that coercive strategies (e.g., threats) were preferred when the dispute centered on property rights, while reasoning was more likely to be used by older siblings and in disputes regarding control over the social situation. However, younger siblings also use reasoning, frequently bringing up the concern of legitimacy (e.g., "You're not the boss") when in conflict with an older sibling. This strategy is commonly used by younger siblings and is possibly an adaptive strategy in order for younger siblings to assert their autonomy (Abuhatum & Howe, 2013). A number of researchers have found that children who can use non-coercive strategies are more likely to have a successful resolution, whereby a compromise is reached, and neither child feels slighted (Ram & Ross, 2008; Abuhatum & Howe, 2013).

Not surprisingly, friendly relationships with siblings often lead to more positive interactions with peers. The reverse is also true. A child can also learn to get along with a sibling, with, as the song says, "a little help from my friends" (Kramer & Gottman, 1992).

In late adolescence, as teens become more independent, research has shown a decline in the frequency of interactions between siblings, as presumably peers and romantic relationships become more central to the lives of young people. Aquilino (2006) suggests that during this transition, the task may be to maintain enough of a sibling bond so that there will be a foundation for this relationship in later life. Those who are successful can often move away from the "older-younger" sibling conflicts of childhood, toward an equal relationship between two adults. Siblings that were close to each other in childhood are typically close in adulthood (Gass et al., 2007), and in fact, it is unusual for siblings to develop closeness for the first time in adulthood. Overall, the majority of adult sibling relationships are close (Cicirelli, 2009).

Influence of family on children

The influence of family on children's development is both profound and long-lasting. For instance, the quality of attachment formed in infancy can predict socioemotional outcomes well into adulthood (Groh & Fearon, 2017). Children who have a secure and positive relationship with their caregivers are more likely to develop strong social-emotional skills, display prosocial behavior, form high-quality friendships, and be well-liked by peers. In contrast, children who lack a supportive caregiver relationship are at greater risk for difficulties in these areas.

Parental influence extends beyond socioemotional development and plays a crucial role in shaping children's cognitive growth as well. The home environment and parents' attitudes can significantly impact a child's learning. For example, research has shown that children whose parents are anxious or avoidant about math tend to perform worse in the subject, compared to those whose parents express confidence and a positive attitude toward math (Casad et al., 2015). This highlights the powerful role that parental beliefs and behaviors play in shaping children's academic outcomes.

While peers become increasingly important as children grow older, family continues to play a crucial role in children's development throughout middle childhood and adolescence. The influence of caregivers remains strong, shaping children's emotional well-being, values, academic motivation, and overall development. It is important to recognize the enduring impact of the family environment, and caregivers should strive to provide supportive, responsive, and nurturing conditions that promote healthy growth and adjustment during these formative years.

66.

Family Life

A good home environment is one in which the child's physical, cognitive, emotional, and social needs are adequately met. Sometimes families emphasize physical needs but ignore cognitive or emotional needs. Other times, families pay close attention to physical needs and academic requirements but may fail to nurture the child's friendships with peers or guide the child toward developing healthy relationships. Parents might want to consider how it feels to live in the household. Is it stressful and conflict-ridden? Is it a place where family members enjoy being?

Family Change: Divorce

Much attention has been given to the impact of divorce on the life of children. The assumption has been that divorce has a strong, negative impact on the child and that single-parent families are deficient in some way. However, the research suggests that 75 to 80 percent of children and adults who experience divorce suffer no long term effects (Hetherington & Kelly, 2002). Children of divorce and children who have not experienced divorce are more similar than different (Hetherington & Kelly, 2002).

Mintz (2024) suggests that the alarmist view of divorce was due in part to the newness of divorce when rates in the United States began to climb in the late 1970s. Adults reacting to the change grew up in the 1950s when rates were low. As divorce has become more common, and there is less stigma associated with divorce, this view has changed somewhat. Social scientists have operated from divorce as a deficit model emphasizing the problems of being from a "broken home" (Seccombe & Warner, 2004). More recently, a more objective view of divorce, re-partnering, and remarriage indicate that divorce, remarriage, and life in stepfamilies can have a variety of effects. The exaggeration of the negative consequences of divorce has left the majority of those who do well hidden and subjected them to unnecessary stigma and social disapproval (Hetherington & Kelly, 2002).

The tasks of families listed above are functions that can be fulfilled in a variety of family types-not just intact, two-parent households. Harmony and stability can be achieved in many family forms and when it is disrupted, either through divorce, or efforts to blend families, or any other circumstances, the child suffers (Hetherington & Kelly, 2002).

Factors Affecting the Impact of Divorce

As we look at the consequences (both pro and con) of divorce and remarriage on children, keep these family functions in mind. Some negative consequences are a result of financial hardship rather than divorce per se

(Drexler, 2005). Some positive consequences reflect improvements in meeting these functions. For instance, we have learned that positive self-esteem comes in part from a belief in the self and one's abilities rather than merely being complimented by others. In single-parent homes, children may be given more opportunity to discover their abilities and gain the independence that fosters self-esteem. If divorce leads to fighting between the parents and the child is included in these arguments, the self-esteem may suffer.

The impact of divorce on children depends on several factors. The degree of conflict before divorce plays a role. If the divorce means a reduction in tensions, the child may feel relief. If the parents have kept their conflicts hidden, the announcement of a divorce can come as a shock and be met with enormous resentment. Another factor that has a significant impact on the child concerns financial hardships they may suffer, especially if financial support is inadequate. Another difficult situation for children of divorce is the position they are put into if the parents continue to argue and fight—especially if they bring the children into those arguments.

Short-term consequences: In roughly the first year following divorce, children may exhibit some of these short-term effects:

- **Grief over losses suffered.** The child will grieve the loss of the parent they no longer see as frequently. The child may also grieve about other family members that are no longer available. Grief sometimes comes in the form of sadness, but it can also be experienced as anger or withdrawal. Preschool-aged boys may act out aggressively while the same-aged girls may become more quiet and withdrawn. Older children may feel depressed.
- **Reduced Standard of Living.** Very often, divorce means a change in the amount of money coming into the household. Children experience in new constraints on spending or entertainment. School-aged children, especially, may notice that they can no longer have toys, clothing, or other items to which they have grown accustomed, or it may mean that there is less eating out or canceling satellite television, and so on. The custodial parent may experience stress at not being able to rely on child support payments or having the same level of income as before. This uncertainty can affect decisions regarding healthcare, vacations, rents, mortgages, and other expenditures. The stress can result in less happiness and relaxation in the home. The parent who has to take on more work may also be less available to the children.
- **Adjusting to Transitions.** Children may also have to adjust to other changes accompanying a divorce. The divorce might mean moving to a new home and changing schools or friends. It might mean leaving a neighborhood that has meant a lot to them as well.

Long-Term consequences: The following are some effects found after the first year of a divorce:

- **Economic/Occupational Status.** One of the most commonly cited long-term effects of divorce is that children of divorce may have lower levels of education or occupational status. This finding may be a consequence of lower-income and resources for funding education rather than to divorce per se. In those

households where economic hardship does not occur, there may be no impact on education or occupational status (Drexler, 2005).

- **Improved Relationships with the Custodial Parent**(usually the mother): The majority of custodial parents are mothers (approximately 80.4 percent) and 19.6 percent of custodial parents are fathers. Shared custody is on the rise, however, and shows promising social, academic, and psychological results for the children. Children from single-parent families talk to their mothers more often than children of two-parent families (McLanahan and Sandefur, 1994). Most children of divorce lead happy, well-adjusted lives and develop stronger, positive relationships with their custodial parent (Seccombe and Warner, 2004). In a study of college-age respondents, Arditti (1999) found that increasing closeness and a movement toward more democratic parenting styles was experienced. Others have also found that relationships between mothers and children become closer and stronger (Guttman, 1993) and suggest that greater equality and less rigid parenting is beneficial after divorce (Steward, Copeland, Chester, Malley, and Barenbaum, 1997).
- **Greater emotional independence in sons.** Drexler (2005) notes that sons who are raised by mothers only develop an emotional sensitivity to others that is beneficial in relationships.
- **Feeling more anxious in their own love relationships.** Children of divorce may feel more anxious about their relationships as adults. This anxiety may reflect a fear of divorce if things go wrong, or it may be a result of setting higher expectations for their relationships.
- **Adjustment of the custodial parent.** Furstenberg and Cherlin (1991) believe that the primary factor influencing the way that children adjust to divorce is the way the custodial parent adjusts to the divorce. If that parent is adjusting well, the children will benefit. This factor may explain a good deal of the variation we find in children of divorce. Adults going through a divorce should consider good self-care as beneficial to the children-not as self-indulgent.
- **Mental health issues:** Some studies suggest that anxiety and depression that are common in children and adults within the first year of divorce may not resolve. A 15-year study by Bohman, Låftman, Päären, Jonsson (2017) suggests that parental separation significantly increases the risk for depression 15 years later when depression rates were compared to matched controls. In fact, the risk of depression was related more strongly with parental conflict and parental separation than it was with parental depression!

Changing Family Structure

According to the 2010 U.S. Census, only 66% of children under age 17 lived in a household with two married parents, a decline from 77% in 1980 (U.S. Census, 2011). This family structure—known as the nuclear family—consists of married parents and their children. In recent years, there has been a noticeable rise in variations of the nuclear family, including families in which parents cohabit without being married; about 3% of children live with two cohabiting parents.

Same-sex parents also make up a portion of two-parent households. Over 30% of same-sex couples are

raising children, compared to 43% of opposite-sex couples (U.S. Census, 2009). Among children in same-sex households, 73% are biological children of one parent, 21% are adopted, and 6% are a combination of both (U.S. Census, 2009). Despite some public concern, research shows that children raised by same-sex parents fare just as well as those raised by opposite-sex couples. A meta-analysis of 81 studies found no significant differences in parenting outcomes. In fact, children of lesbian couples were found to have slightly fewer behavioral problems and higher self-esteem (Biblarz & Stacey, 2010).

Single-parent households are also becoming more common. In 2010, 27% of children lived with a single parent, up from 25% in 2008. Of those, 23% lived with their mother and 3% with their father. Some of these children also lived with their parent's cohabiting partner—10% in the case of single mothers and 20% for single fathers.

Stepparent families are another variation within two-parent households. About 9% of children in two-parent homes live with a biological or adoptive parent and a stepparent—most commonly a biological mother and a stepfather (70%). Family structure also varies by child age: older children (15–17) are less likely to live with two parents than younger children and are more likely to live with stepparents.

In some cases, neither biological nor adoptive parents are present. In 2010, 4% of children (about 3 million) lived with other guardians, including grandparents (54%), other relatives (21%), and nonrelatives (24%). This is often referred to as an extended family structure. Among nonrelatives, foster parents represent about a quarter. The rise in grandparents serving as primary caregivers is notable—about 9% of children live with a grandparent, and in nearly half of these cases, the grandparent is the primary caregiver, often due to parental incarceration, substance abuse, or abandonment (De Toledo & Brown, 1995; U.S. Census, 2011).

Changes in family structure raise important questions about their impact on children. Historically, children living with both parents have had greater financial stability and educational opportunities than those in single-parent households (U.S. Census, 1997). Marital status of parents appears to be a significant factor. Children of divorced parents tend to fare better than those whose parents never married, especially if they live with their divorced father. This may reflect broader patterns: never-married parents are often younger, have lower levels of education, and earn less income. For example, 60% of children living with a single mother are at or near the poverty line, compared to 45% of those with divorced mothers (U.S. Census, 1997).

67.

Glossary

[glossary-page]

adverse childhood experiences: abuse, neglect, and violent experiences that contribute to childhood trauma

athletic coach style of parenting: the rules for behavior are consistent and objective and presented in that way. The parent's role is to provide guidance while the child learns first hand how to handle these situations

authoritarian parenting: the traditional model of parenting in which parents make the rules and children are expected to be obedient

authoritative parenting: appropriately strict, reasonable, and affectionate. They are willing to negotiate when appropriate

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permissive parenting: involves being a friend to a child rather than an authority figure. Children are allowed to make their own rules and determine their own activities

police officer/drill sergeant parent: focuses primarily on making sure that the child is obedient and that the parent has full control of the child

teacher-counselor parent: pays much attention to expert advice on parenting and believes that as long as all of the steps are followed, the parent can rear a perfect child

toxic stress: excessive stress that exceeds a child's ability to cope, especially in the absence of supportive caregiving from adults

uninvolved parenting: parents who are disengaged from their children, do not make demands on their children, and are non-responsive

[/glossary-page]

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PART X

CHANGING PEER RELATIONSHIPS

Learning Objectives

- Describe changes in peer relationships during middle childhood and adolescence
- Explain the impact of peer relationship on youth's development
- Identify the sociometric peer statuses and characteristics of each
- Explain the types of bullying and factors that contribute to bullying behavior
- Describe the developmental benefits of dating
- Explain teen dating violence and factors that contribute to this behavior

Parent-child relationships are not the only significant relationships in a child's life. Peer relationships are also important. Social interaction with another child who is similar in age, skills, and knowledge provokes the development of many social skills that are valuable for the rest of life (Bukowski, Buhrmester, & Underwood, 2011). In peer relationships, children learn how to initiate and maintain social interactions with other children. They learn skills for managing conflicts, such as turn-taking, compromise, and bargaining. Through these experiences, children develop friendships that provide additional sources of security and support to those provided by their parents. These relationships become even more prominent during adolescence.

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Peer relationships become increasingly important and have a more profound impact on development during middle childhood and adolescence. Before diving into how peer relationships develop, it's important to recognize that we often behave differently when we are part of a group compared to when we are alone.

How do we act differently in a group?

When you think of how we act differently in a group, one example is hazing, which is not uncommon when someone tries to join a specific club or team. Unfortunately, some hazing rituals can be dangerous, even leading to injury or death. Often, people who know those involved are shocked by the behavior and wonder how such things could have happened. Part of the explanation lies in the psychological effects of group dynamics.

When we are in a group, we tend to experience a reduction in self-awareness and are less likely to hold ourselves accountable to personal moral standards. This process, known as **deindividuation**, can lead to behaviors we might not engage in on our own. In group settings, individuals are also more likely to take risks.

Another example is vandalism following high school football games. While it might seem uncharacteristic of individual students, such behavior can sometimes be explained by **groupthink**—the tendency of a group to make poor decisions in order to maintain group cohesion and unity. Groupthink is especially likely when the group is under pressure, feels threatened, or holds strong biases. In these cases, critical thinking is often replaced by conformity, and individuals may suppress dissenting opinions in favor of maintaining harmony within the group. Part of the reason we have group think is due to **socio-conformity**, referring to the pressure to change your behavior or belief in order to fit in with a group.

Theories on friendship development

How our friendship evolves overtime is a topic many has been interested in. We will focus on two theories on how friendship evolves overtime.

Bigelow and La Gaipa's stages of friendship

Bigelow and La Gaipa (1975) outline three stages to children's conceptualization of friendship.

In stage one, **reward-cost**, friendship *focuses on mutual activities*. Children in early, middle, and late childhood all emphasize similar interests as the main characteristics of a good friend.

Stage two, **normative expectation**, *focuses on conventional morality; that is, the emphasis is on a friend as*

someone who is kind and shares with you. Clark and Bittle (1992) found that fifth graders emphasized this in a friend more than third or eighth graders.

In the final stage, **empathy and understanding**, *friends are people who are loyal, committed to the relationship, and share intimate information.* Clark and Bittle (1992) reported eighth graders emphasized this more in a friend. They also found that as early as fifth grade, girls were starting to include a sharing of secrets, and not betraying confidences as crucial to someone who is a friend.

Selman's stages of friendship

Selman (1980) outlines five stages of friendship from early childhood through to adulthood.

In stage 1, **momentary physical interaction**, *a friend is someone who you are playing with at this point in time.* Selman notes that this is typical of children between the ages of three and six. These early friendships are based more on circumstances (e.g., a neighbor) than on genuine similarities.

In stage 2, **one-way assistance**, *a friend is someone who does nice things for you*, such as saving you a seat on the school bus or sharing a toy. However, children in this stage, do not always think about what they are contributing to the relationships. Nonetheless, having a friend is important and children will sometimes put up with a not so nice friend, just to have a friend. Children as young as five and as old as nine may be in this stage.

In stage 3, **fair-weather cooperation**, children are very concerned with fairness and reciprocity, and thus, *a friend is someone who returns a favor.* In this stage, if a child does something nice for a friend there is an expectation that the friend will do something nice for them at the first available opportunity. When this fails to happen, a child may break off the friendship. Selman found that some children as young as seven and as old as twelve are in this stage.

In stage 4, **intimate and mutual sharing**, typically between the ages of eight and fifteen, *a friend is someone who you can tell them things you would tell no one else.* Children and teens in this stage no longer “keep score”, and do things for a friend because they genuinely care for the person. If a friendship dissolves in the stage it is usually due to a violation of trust. However, children in this stage do expect their friend to share similar interests and viewpoints and may take it as a betrayal if a friend likes someone that they do not.

In stage 5, **autonomous interdependence**, *a friend is someone who accepts you and that you accept as they are.* In this stage children, teens, and adults accept and even appreciate differences between themselves and their friends. They are also not as possessive, so they are less likely to feel threatened if their friends have other relationships or interests. Children are typically twelve or older in this stage.

As you can see, both theories suggest that middle childhood and adolescence are key periods of advancement in children’s understanding of friendship. During these stages, peer relationships evolve beyond simple physical interaction to include deeper emotional and social connections. This theoretical perspective aligns with real-world observations: as children grow older, they spend increasing amounts of time with peers, and these

relationships become more significant and meaningful in their social and emotional development. We will further discuss these changes in this chapter.

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Peer Relationships

As children enter the formal school system, they start to have a structured setting where they consistently spend a lot of time with people of their ages. As a result, they usually begin spending more time with their peers and less time with their families, and these peer interactions are increasingly unsupervised by adults as their age increases. Younger children's notions of friendship often focus on shared activities, whereas older children's notions of friendship increasingly focus on intimate exchanges of thoughts and feelings.

As the age increases, peer groups evolve from primarily single-sex to mixed-sex. Older children within a peer group tend to be similar to one another in behavior and attitudes, which has been explained as being a function of **homophily** (adolescents who are similar to one another choose to spend time together in a “birds of a feather flock together” way) and influence (adolescents who spend time together shape each other's behavior and attitudes).

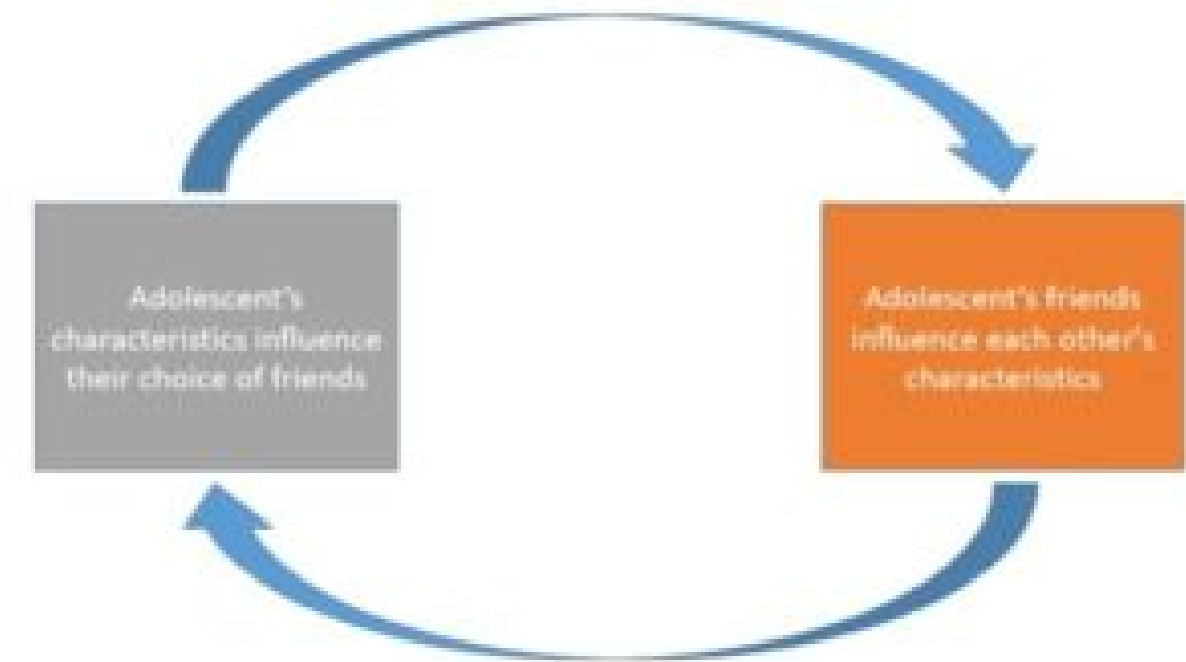


Figure 10.2.1. Reciprocal influences on friend selection and personal characteristics.

Peer pressure is usually depicted as peers pushing a child to do something that adults disapprove of, such as breaking laws or using drugs. One of the most widely studied aspects of adolescent peer influence is known as **deviant peer contagion** (Dishion & Tipsord, 2011). This influence is the process by which peers reinforce problem behavior by laughing or showing other signs of approval that then increase the likelihood of future problem behavior. Although deviant peer contagion is more extreme, regular peer pressure is not

always harmful. Peers can serve both positive and negative functions. Negative peer pressure can lead children to make riskier decisions or engage in more problematic behavior than they would alone or in the presence of their family. For example, adolescents are much more likely to drink alcohol, use drugs, and commit crimes when they are with their friends than when they are alone or with their family. However, peers also serve as an essential source of social support and companionship during middle childhood and adolescence and children with positive peer relationships are happier and better adjusted than those who are socially isolated or who have conflictual peer relationships.

Crowds are an emerging level of peer relationships in adolescence. In contrast to friendships (which are reciprocal dyadic relationships) and **cliques** (which refer to groups of individuals who interact frequently), crowds are characterized more by shared reputations or images than actual interactions (Brown & Larson, 2009). These crowds reflect different prototypic identities (such as jocks or brains) and are often linked with adolescents' social status and peers' perceptions of their values or behaviors. Eventually, these crowds and cliques become less critical to teens as they place more value on close friendships and romantic relationships.

Crowds

Crowds are large groups of peers socially connected by a shared image and reputation (Brown, 2004), especially within the setting of a single school. A single person can belong to more than one crowd if their image matches the crowds' criteria (Brown, 2004). Because membership in a crowd depends on peers' perceptions, crowds in any given peer group will correspond to the local preconceived "types" of children. Specific stereotypes vary from place to place, but many remain consistent. They are based on peer status, socioeconomic status, residential area, activities, social characteristics, or a combination of attributes (jocks, nerds, populars, and druggies are among the most commonly observed) (Brown, 2004; Arnett, 2002). Crowds are very different from cliques: while cliques are relatively small, close-knit groups based on frequent interaction and collectively determined membership, members of a crowd may not even know each other. Crowd membership reflects external assessments and expectations, providing a social context for identity exploration and self-definition as adolescents internalize or reject their crowd identities.

Because crowd membership is initially outwardly imposed, peers can classify children as belonging to a crowd that they do not consider themselves a member. Members of some crowds are more aware of and comfortable with their crowd designation than others; members of stigmatized or low-status groups, in particular, may resist or deny their undesirable categorization (Brown et al., 1992). Usually, however, children embrace their crowd affiliation, using it to define themselves and advertise where they fit in their peer group's social structure (Newman & Newman, 2001; Brown et al., 1990).

Crowds and Identity Development

Crowds serve an essential purpose in identity development, shaping individual values, behavior, and personal

and peer expectations. “[One’s group] is often tantamount to one’s own provisional identity” (Brown et al., 1994); the individual defines themselves by the crowd to which they see themselves belonging. Different crowds expose the individual to different norms. These norms encourage adolescents to interact with some people while avoiding others and reward certain behaviors while discouraging others, a process of normative social influence (Brown et al., 1990; Brown et al., 1994; Brown & Larson, 2009). For example, a member of a “preppy” crowd might be rewarded for dressing in a fashion for which a member of an “emo” crowd would be teased, and vice versa.

Crowd effects on norms of interaction:

- Norms affect how the individual interacts with others. Members of high-status (preppie, popular) groups often interact with many people, but most of these relationships are superficial and instrumental; interpersonal connections are used to establish and maintain social status (Eder, 1985; Lesko, 1988). By contrast, members of lower-caste groups (e.g., dorks, druggies) generally have fewer friends, mostly from within the crowd; however, these relationships are typically marked by greater loyalty, stability, and honesty (Lesko, 2000).
- Norms affect with whom the individual interacts. Crowds steer the individual toward certain people, attitudes, and behaviors. There are also effects of peer perception and expectations when individuals attempt to interact across crowds. In essence, one may be interested in a cross-crowd friendship, but whether or not the target reciprocates depends on their crowd’s norms as well. The adolescent’s social options for friendship and romance are limited by their crowd and by other crowds (Brown et al., 1994).

Often crowds reinforce the behaviors that initially caused an individual to be labeled part of that crowd, which can positively or negatively influence the individual (toward academic achievement or drug use, for example). These pressures are often linked to the stereotypes members of crowds hold about themselves and members of other crowds: unity by the denigration of the outgroup (Brown et al., 1994).

Racial Crowds and Sub-Crowds

Students’ perception of crowd differences may depend on how closely related the student observer is to a particular crowd. The primary, recurring crowd divisions (jocks, geeks, partiers) have been most often studied in predominantly white high schools, but they also exist for minority students. In multiracial schools, students seem to divide along ethnic lines first, then into these archetypical crowds within their ethnicity. However, one ethnic group may not notice the further divisions in other ethnic groups after the first, race-based split (Brown & Mounts, 1993). For instance, black students see themselves as divided into jocks, geeks, emos, stoners, popular kids, and so on, but white students may see them as just one crowd defined solely by ethnicity, “the black kids.” Sometimes crowd membership transcends race, however, and adolescents are classified as “jocks”

or “geeks” regardless of race (Horvat & Lewis, 2003; Tyson et al., 2005). This classification seems to vary and depend heavily on the context of the individual school.

Stereotypes, Stigma, and Cross-Crowd Friendships

While crowds are structured around prototypical caricatures of their members, real adolescents rarely match these extremes. Furthermore, not all students agree on the characteristics typical of a stereotype (Brown et al., 1994). In other words, a regular manifestation of just a few central characteristics of a crowd is a sufficient basis for classification as a member of that crowd. Thus, not all “jocks” neglect their schoolwork, though that is part of the typical jock stereotype, and a person interested in fashion could still be considered a “geek.”

Often a crowd is stigmatized by one or more other crowds. This stigmatization can affect students’ willingness to associate with members of that crowd, or even other crowds similar to it. For example, people may avoid being seen as a “brain,” a middle-status crowd, because of the similarity between brains and “nerds,” a lower-status crowd (Brown et al., 1990).

Shared interests form the basis of many friendships, so often students are drawn to members of their own crowds, especially if their crowd is defined by activities rather than more superficial characteristics such as race or socioeconomic status. However, interests can be shared across crowd divisions. Accordingly, while a student’s closest friends are almost always part of the same clique (i.e., they interact frequently within the same small friend group), they are not always part of the same crowd, especially if multiple crowds have similar lifestyles (Brown et al., 1994).

Crowd-Hopping

Further emphasizing the flexible nature of crowd membership, some adolescents are not stably linked to one specific crowd—some individuals are associated with multiple crowds, while others are not stably linked to any crowds and “float” among several. These appear more closely attached to individuals outside the peer group (family, dropout friends, friends from a non-school organization, etc.). Others may consciously work to change crowd affiliations to express different interests or achieve a change in social status. The crowd with which a student desires to be identified is far less stable than the personal attributes by which the student is likely to be categorized by peers. Accordingly, students who change crowd membership (a process known as “crowd-hopping”) tend to have lower self-esteem, perhaps because they have not yet found an environment and peer group that supports them. They likely continue changing crowd membership until they find a fulfilling niche (Brown et al., 1992).

The Rise of Crowds

Crowds emerge to group students by caricature and structure interactions between students of each type

(Brown et al., 1994). Early crowds are often based on social status, especially among girls, with a small group of well-known children being “popular” and the rest “unpopular.” To maintain their status, popular girls will avoid the overtures of less-popular children, which actually makes them disliked (Eder, 1985). Many children stop attempting to gain entry into the popular crowd and make friends with other children instead, giving rise to new crowds (Brown et al., 1994).

The stereotypes on which crowd definitions are based change over time as students shift from grouping people by abstract characteristics rather than activities (“geeks” rather than “the kids who read a lot”). With age, students become more conscious of crowd divisions and the social hierarchy (Brown, 2004). Distinctions between crowds also become more nuanced, developing from simple popular/unpopular dichotomies to less hierarchical structures in which there are more than two levels of social acceptability, often with several crowds at each level (Kinney, 1993; Horn, 2003). As seen in cross-crowd friendships, some crowds interact with each other more readily than others. This transition to a more fluid social structure allows adolescents to change their status over time by changing crowds, remaining in a crowd that undergoes a change in status, or gaining the confidence and perspective to reject the assumptions of the social hierarchy (Brown et al., 1994; Kinney, 1993). Willingness to do so reflects a growing sense of personal identity distinct from crowd membership.

The Decline of Crowds

Students’ attitudes toward crowds change over time—while ninth-graders are willing to discriminate against members of other crowds, twelfth-graders are less likely to do so (Horn, 2003). Students also develop more multifaceted self-concepts and reject crowd labels as simplistic attempts to describe an entire personality (Brown et al., 1994). Across the high school years, crowd significance as a basis for affiliation wanes (Horn, 2003), as does the influence of crowds on an individual’s behavior (Brown, 2004). In fact, some studies indicate the importance of crowds peaks at age 12 or 13 (Brown et al., 1986). By the end of high school, adolescents often feel constrained by impersonal, crowd-derived identities (Larkin, 1979). This constraint, combined with the splintering off of romantic couples from the rest of the crowd, may account for the decline of crowd significance over time (Kuttler & La Greca, 2004).

Cliques



A **clique** is a group of individuals who interact with one another and share similar interests. Interacting with cliques is part of normative social development regardless of gender, ethnicity, or popularity. Although cliques are most commonly studied during adolescence and middle childhood development, they exist in all age groups. They are often bound together by shared social characteristics such as ethnicity and socioeconomic status.

Typically, people in a clique will not have a completely open friend group and can, therefore, “ban” members if they do something considered unacceptable, such as talking to someone disliked. Some cliques tend to isolate themselves as a group and view themselves as superior to others, which can be demonstrated through bullying and other antisocial behaviors.

One person may be part of multiple cliques, each forming and functioning independently from one another. Cliques are relevant in society due to the social influence or peer pressure that results from the interactions with individuals who share a common characteristic. The outcomes associated with clique formations may be endless, with varying degrees of influence (Miller, 1958). So, a formal clique, such as a professional organization, would have a different kind of influence as compared to a social clique consisting of close friends.

A clique can also involve a high degree of social commitment to a specific group. A stronger level of commitment results in an individual having a reduced amount of interaction with other social groups. Cliquish behavior often involves repetition with regard to activities, vernacular, preferences, and manner, which can result in conflict with other cliques, creating “outsiders.” Individuals can also experience social isolation within their clique if their values and/or behavior begin to differ from the rest of the group.

Every clique has some form of organization that makes up the network of social interaction (Peay, 1974). Informal clique networks are groups that do not have a legitimate organizational structure in which they can be established and dissolved in a shorter period. An informal clique may consist of a person’s friend group or co-workers, while it may also identify other, more informal groups, such as criminal gangs (Krackhardt, 1988). On the other hand, a formal clique is a group with a socially accepted organization that is hierarchical in structure. A formal clique is composed of members who have identifiable roles and interactions with one another and is found in the structure of numerous professional organizations, businesses, and even family structure. Culture is a very influential factor in the organization of clique structures because the boundaries established through differences in cultural aspects are persistent, even when the membership varies from time to time. For example, the differences in language, beliefs, traditions, etc. have

always created a distinct separation or boundary between groups of people even though the members of that particular group are continually changing (Barth, 1998).

Development of Cliques

The formation and deformation of clique structures do not end with adolescence, even though the number of interactions with clique groups decreases, and the type of groups may change. As individuals become adults, their social interpretations alter, and the formation of their cliques originates from their immediate environment, rather than from common social characteristics (Carstensen, 2016). A clique should not be confused with a crowd because the smaller size and specific boundaries of a group are what causes the group formation to be considered a clique. A clique can develop in several different ways and within environments that consist of individuals who interact regularly. The structural cohesion of the clique is the constant face-to-face interaction between members that can either create or dissolve the group, depending upon the level of interaction. If face-to-face interaction is regularly established, then cohesion between individuals will form. However, if the face-to-face interaction depreciates, then the cohesive social bond between said individuals will eventually dissolve (Friedkin, 1984).

Social impact of Cliques

A clique may inhibit external social influence by impacting the emotions, opinions, or behaviors of group members (Hochschild, 1979). There are many ways in which the perception of information between members in a clique can influence other members on a greater level than if they had received the same information from a different source. For example, receiving information from a close friend or family member is interpreted and responded to differently compared to receiving the same information from someone who is not within the clique structure. The satisfaction, interaction, and closeness between the clique groups that we involve ourselves in develops and changes throughout the years. Nevertheless, there is always a constant morphing of both the individual and the group as time goes on.

Homosociality to Hetersociality

Homosociality is the relationship between people of the same-sex, not romantic in nature. In children and young adolescence, more friendships are with peers of the same sex. As adolescents mature, they become open to **heterosociality**, having relationships with people of the opposite sex, and **bisociality**, having relationships with same- and opposite-sex peers.

This process tends to occur in stages, as children transition from almost exclusive homosociality to heterosociality and eventually to romantic relationships. In stage one of this progression, cliques are same-sex and segregated from the opposite sex. In the second stage, opposite-sex cliques with similar interests start to

associate. During the third stage, sex-segregated cliques break down, often with clique leaders pairing off into close friendships and romantic relationships. The fourth stage is when other clique members also leave the homosocial clique for hetero- and bisocial or romantic relationships. By stage five, cliques are less important to teens, and close or romantic relationships are the priority.

Cliques, Crowds, and Conformity



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://wisconsin.pressbooks.pub/adolescentpsychology/?p=157#oembed-1>

Video 10.2.1. *Adolescence, Cliques, Crowds, Conformity* discusses the different peer groups and the influence on youth culture.

Close Friendships

Peer relationships are particularly important for children. They can be supportive but also challenging. Peer rejection may lead to behavioral problems later in life. However, peer relationships can be challenging, as well as supportive (Rubin, Coplan, Chen, Bowker, & McDonald, 2011). Being accepted by other children is an essential source of affirmation and self-esteem. At the same time, peer rejection can foreshadow later behavior problems (especially when children are rejected due to aggressive behavior). With increasing age, children confront the challenges of bullying, peer victimization, and managing conformity pressures. Social comparison with peers is an important means by which children evaluate their skills, knowledge, and personal qualities, but it may cause them to feel that they do not measure up well against others. For example, a boy who is not athletic may feel unworthy of his football-playing peers and revert to shy behavior, isolating himself, and avoiding conversation. Conversely, an athlete who does not “get” Shakespeare may feel embarrassed and avoid reading altogether. Also, with the approach of adolescence, peer relationships become focused on psychological intimacy, involving personal disclosure, vulnerability, and loyalty (or its betrayal)—which significantly influences a child’s outlook on the world. Each of these aspects of peer relationships requires developing very different social and emotional skills than those that emerge in parent-child relationships. They also illustrate the many ways that peer relationships influence the growth of personality and self-concept.

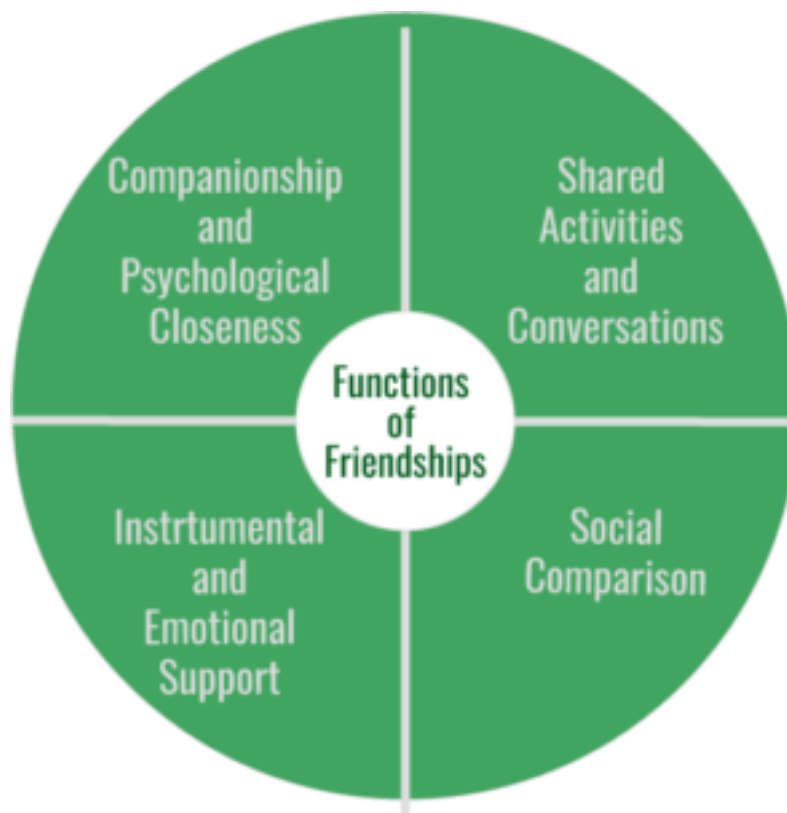


Figure 10.1.2. Functions of friendship. By Florida State College at Jacksonville, licensed under [CC-BY 4.0](#).

Romantic Relationships

Adolescence is the developmental period during which romantic relationships typically first emerge. Initially, same-sex peer groups that were common during childhood expand into mixed-sex peer groups that are more characteristic of adolescence. Romantic relationships often form in the context of these mixed-sex peer groups (Connolly, Furman, & Konarski, 2000).

Although romantic relationships during adolescence are often short-lived rather than long-term committed partnerships, their importance should not be minimized. Adolescents spend a great deal of time focused on romantic relationships, and their positive and negative emotions are more tied to romantic relationships (or lack thereof) than to friendships, family relationships, or school (Furman & Shaffer, 2003). Romantic relationships contribute to adolescents' identity formation, changes in family and peer relationships, and adolescents' emotional and behavioral adjustment.

Furthermore, romantic relationships are centrally connected to adolescents' emerging sexuality. Parents, policymakers, and researchers have devoted a great deal of attention to adolescents' sexuality, in large part because of concerns related to sexual intercourse, contraception, and preventing teen pregnancies. However,

sexuality involves more than this narrow focus. Romantic relationships are a domain in which adolescents experiment with new behaviors and identities.

71.

Sociometric Peer Status

A child’s status among their peers will influence their membership in peer groups and their ability to make friends. **Sociometric status** is a measurement that reflects the degree to which someone is liked or disliked by their peers as a group. In developmental psychology, this system has been used to examine children’s status in peer groups, its stability over time, the characteristics that determine it, and the long-term implications of one’s popularity or rejection by peers.

The most commonly used sociometric system, developed by Coie & Dodge (1988), asks children to rate how much they like or dislike each of their classmates and uses these responses to classify them into five groups.

		Number of “least liked” nominations		
		Many		Few
Number of “most liked” nominations	Many	Controversial		Popular
			Average	
	Few	Rejected		Neglected

Figure 10.3.1. Sociometric peer statuses.

Popular students are those liked by many of their peers and disliked by few. These individuals are skilled at social interactions and maintain positive peer relationships. They tend to be cooperative, friendly, sociable, and sensitive to others. They are capable of being assertive without being aggressive, thus can get what they want without harming others. Among this group, there may be distinct levels of popularity:

- **Accepted** students are the most common sub-group among the popular. While they are generally well-liked, they are not as magnetic as the very popular kids.
- **Very popular** students are highly charismatic and draw peers to them.

Rejected students are designated as rejected if they receive many negative nominations and few positive

nominations. These individuals often have poor academic performance and more behavior problems in school. They are also at higher risk for delinquent behaviors and legal problems. These kids are more likely to be diagnosed with ADHD, conduct disorder, and substance abuse. They tend to be isolated, lonely and are at risk for depression. Rejected youth can be categorized into two types:

- **Aggressive-rejected** students display hostile and threatening behavior, are physically aggressive, and disruptive. They may bully others, withhold friendship, ignore and exclude others. While they are lacking, they tend to overestimate their social competence.
- **Withdrawn-rejected** students are socially withdrawn, wary, timid, anxious in social situations, and lack confidence. They are at risk of being bullied.

Individuals that are liked by many peers, but also disliked by many are designated as **controversial**. This group may possess characteristics of both the popular and the rejected group. These individuals tend to be aggressive, disruptive, and prone to anger. However, they may also be cooperative and social. They are often socially active and a good group leader. Their peers often view them as arrogant and snobbish.

The **neglected students** are designated as neglected if they receive few positive or negative nominations. These children are not especially liked or disliked by peers and tend to go unnoticed. As a result, they may be isolated and especially avoid confrontation or aggressive interactions. This group does tend to do well academically.

Finally, the **average** students are designated as such because they receive an average number of both positive and negative nominations. They are liked by a small group of peers, but not disliked by very many.

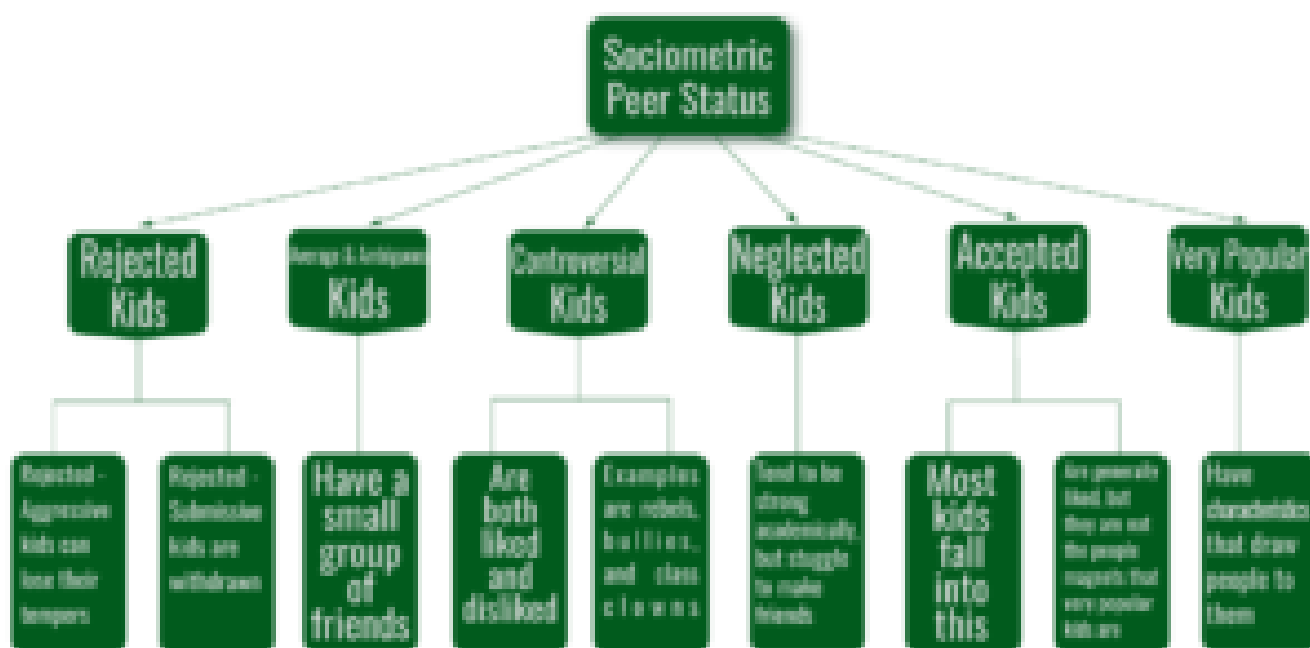


Figure 10.3.2. Sociometric peer statuses and characteristics.

Popularity

What makes an adolescent popular? Several physical, cognitive, and behavioral factors impact popularity. First, adolescents that are perceived to be physically attractive tend to be more popular among their peers. Cognitive traits matter too. Individuals that demonstrate higher intelligence and do well academically tend to be more liked. Also, those that can take another's perspective and demonstrate social problem-solving skills are favored. Teens that can manage their emotions and behave appropriately gain higher status. Finally, teens like peers that are confident without being conceited.

Interventions

What can be done to help those adolescents that are not well-liked? For neglected teens, social skills training and encouraging them to join activities can help them become noticed by their peers and make friends. For rejected teens, they may need support to help with anger management, to overcome anxiety, and cope with depression. This group can also benefit from social skills training to learn social competence and gain confidence.

Culture

As you might imagine, peer relationships are shaped by a wide range of contextual factors, and their development is not universal across all environments. One of the most significant influences is culture, which plays a key role in shaping how children and adolescents form and maintain relationships with their peers.

For example, in cultures that emphasize individualism—such as the United States—peer relationships tend to be more intimate and emotionally expressive. U.S. students often form close, dyadic friendships that are highly influential in shaping their social and emotional development. These friendships typically involve high levels of self-disclosure, loyalty, and mutual support.

In contrast, in cultures that emphasize collectivism—such as Indonesia—peer relationships are often broader and more group-oriented. Indonesian students may interact with a wider network of peers, placing greater value on group harmony, cooperation, and shared responsibility rather than deep individual closeness. While these relationships may seem less emotionally intense from a Western perspective, they reflect a strong sense of belonging within the peer group.

These differences highlight how cultural values shape not only the structure of peer relationships but also the expectations, behaviors, and emotional expressions within them. Recognizing these cultural variations helps us understand that peer development is deeply embedded within social and cultural contexts.

Family

In addition to culture, family also plays an important role in shaping children's peer relationships. Parents and caregivers can exert both direct and indirect influences. Directly, families influence who children associate with—for example, by arranging playdates or enrolling them in specific schools or activities. Indirectly, the neighborhood a family chooses can shape the peer group available to the child, especially in early and middle childhood, when friendships are often formed based on physical proximity.

Families also influence peer relationships through their impact on children's social skills and behavior. Children observe how their parents interact with others and often model these behaviors. Furthermore, parenting styles that support socioemotional development—such as warm, responsive caregiving—are associated with children who possess better social skills, emotional regulation, and empathy (Moroni et al., 2019). These skills, in turn, enhance children's ability to build and maintain positive peer relationships.

Social Media

Finally, with the rise of technology and social media, peer relationships have undergone significant transformation. Social media increases the frequency and immediacy of peer interactions, making it easier for children and adolescents to stay connected. This can have positive effects, such as providing immediate social support, but may also lead to negative outcomes, like increased co-rumination or social comparison. Moreover, social media enables the formation of entirely online friendships, expanding the peer network beyond school and neighborhood boundaries. As a result, peer relationships are no longer limited by geographical proximity and are increasingly shaped by the digital environment, which can both enhance and complicate children's social experiences.



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Video 10.4.1. The influence of social media on adolescents' peer relationships

Impact of peer relationship

Throughout this book, we have emphasized the importance of peers in children's development. Just like the family, peer relationships play a critical role across multiple domains of development. In fact, as children grow older—particularly after entering the formal school system—peer relationships become increasingly influential. Peers impact development in many areas, especially on their cognitive and socioemotional development.

As discussed in the section on academic achievement, peer influence plays a significant role in children's learning. Participation in structured learning environments—such as collaborative study groups or classroom-based peer interactions—is positively associated with academic success. These settings not only reinforce academic skills but also foster motivation and engagement. As children mature, they become more likely to seek academic support from peers rather than family members, highlighting the growing importance of peer networks in educational contexts.

In addition to cognitive development, positive peer relationships are crucial for socioemotional development. Through peer interactions, children learn to navigate social dynamics, resolve conflicts, practice cooperation, and regulate their emotions. These experiences help them build essential social skills that contribute to emotional resilience and interpersonal competence. Children with supportive peer relationships tend to be more emotionally stable, exhibit higher self-esteem, and report greater life satisfaction.

Conversely, children who experience peer rejection or social exclusion are at greater risk for emotional

difficulties. Repeated rejection or bullying can lead to heightened stress, which may contribute to serious consequences such as anxiety, depression, and poor academic outcomes. Therefore, fostering healthy peer relationships is essential for promoting well-rounded development and long-term well-being.

73.

Bullying

Bullying is unwanted, aggressive behavior among school-aged children that involves a real or perceived power imbalance. The behavior is repeated, or has the potential to be repeated, over time. Both kids who are bullied and who bully others may have serious, lasting problems.

In order to be considered bullying, the behavior must be aggressive and include:

- **An Imbalance of Power:** Kids who bully use their power—such as physical strength, access to embarrassing information, or popularity—to control or harm others. Power imbalances can change over time and in different situations, even if they involve the same people.
- **Repetition:** Bullying behaviors happen more than once or have the potential to happen more than once.

Bullying includes actions, such as making threats, spreading rumors, attacking someone physically or verbally, and excluding someone from a group on purpose. Bullying is not peer conflict, dating violence, hazing, gang violence, harassment (legal definition), or stalking. While these issues may also be problematic, they do not meet the criteria for bullying behavior.

Types of Bullying

There are several types of bullying, and it is not unusual for a bully to utilize more than one type. **Verbal bullying is** saying, or writing mean things and may include behaviors like teasing or name-calling, inappropriate sexual comments, taunting, and threatening to cause harm. **Social bullying is** sometimes referred to as relational bullying. It involves behaviors such as hurting someone's reputation or relationships by purposely excluding them or getting others to exclude them, spreading rumors about someone, or embarrassing someone in public. **Physical bullying is** hurting a person's body or possessions by hitting, kicking, or pinching, spitting, tripping or pushing, taking or breaking someone's things, or making mean or rude hand gestures.

The Roles in Bullying

There are many roles that individuals may take in bullying situations. Kids can bully others, they can be bullied, or they may witness bullying. Some may play more than one role, sometimes being both bullied and the bully.

It is important to understand the multiple roles involved in these situations in order to prevent and respond to bullying effectively.

Importance of Not Labeling Kids

When referring to a bullying situation, it is easy to call the kids who bully others “bullies” and those who are targeted “victims,” but this may have unintended consequences. When children are labeled as “bullies” or “victims,” it may send the message that the individual’s behavior cannot change. It also fails to recognize the multiple roles one might play in different bullying situations. Labeling also disregards other factors contributing to the behavior such as peer influence or school climate.

Instead of labeling the teens involved, focus on the behavior. For instance, instead of calling someone a “bully,” refer to them as “the person who bullied.” Instead of calling a person a “victim,” refer to them as “the person who was bullied.”

The Role of Bully

The roles individuals play in bullying are not limited to those who bully others and those who are bullied. Some researchers talk about the “circle of bullying” to define both those directly involved in bullying and those who actively or passively assist the behavior or defend against it. Direct roles include:

- **Those who Bully:** These teens engage in bullying behavior towards their peers. There are many risk factors that may contribute to their involvement in the behavior. Often, these kids require support to change their behavior and address any other challenges that may be influencing their behavior.
- **Those who are Bullied:** These teens are the targets of bullying behavior. Some factors put them at more risk of being bullied, but not all kids with these characteristics will be bullied. Sometimes, these individuals may need help learning how to respond to bullying.

Witnesses to Bullying

Even if a person is not directly involved in bullying, they may be contributing to the behavior. Witnessing the behavior may also affect the situation, so they need to learn what they should do when they see bullying happen. Roles kids play when they witness bullying include:

- **Those who Assist:** These individuals may not start the bullying or lead in the bullying behavior, but serve as an “assistant” to those who are bullying. These kids may encourage bullying behavior and occasionally join in.
- **Those who Reinforce:** These kids are not directly involved in the bullying behavior, but they give the

bullying an audience. They will often laugh or provide support for those who are engaging in bullying. This may encourage the bullying to continue.

- **Outsiders:** These individuals remain separate from the bullying situation. They neither reinforce the bullying behavior nor defend the person being bullied. Some may watch what is going on but do not provide feedback about the situation to show they are on anyone's side. Even so, providing an audience may encourage bullying behavior. These witnesses may want to help but do not know-how.
- **Those who Defend:** These witnesses actively comfort the person being bullied and may come to their defense when bullying occurs.

Most participants play more than one role in bullying over time. In some cases, they may be directly involved in bullying as the one bullying others or being bullied. In others, they may witness bullying and play an assisting or defending role. Every situation is different. Some kids are both bullied and bully others. It is important to note the multiple roles kids play, because those who are both bullied and bully others may be at more risk for adverse outcomes, such as depression or suicidal ideation. Also, it highlights the need to engage all kids in prevention efforts, not just those who are known to be directly involved.

Bystanders: Become an Upstander to Bullying



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Video 10.5.1. *Bystander* discusses the roles of a bullying incident and how bystanders may be key to preventing and stopping bullying.

Who Is at Risk?

No single factor puts a child at risk of being bullied or bullying others. Bullying can happen anywhere—cities, suburbs, or rural towns. Depending on the environment, some groups—such as lesbian, gay, bisexual, transgender, or questioning (LGBTQ) youth, youth with disabilities, and socially isolated youth—may be at an increased risk of being bullied.

Those at Risk of Being Bullied

Generally, those who are bullied have one or more risk factors. Adolescents that are perceived as different from their peers, such as being overweight or underweight, wearing glasses or different clothing, being new to a school, or being unable to afford what kids consider “cool” are at risk for bullying. As are those perceived as weak or unable to defend themselves or are less popular than others and have few friends. Also, at risk for bullying are those that are depressed, anxious, or have low self-esteem. Finally, those that do not get along well with others, are seen as annoying or provoking, or antagonize others for attention are more likely to be bullied. However, even if a child has these risk factors, it does not mean that they will be bullied.

Those More Likely to Bully Others

There are two types of kids who are more likely to bully others. The first is well-connected to their peers, have social power, are overly concerned about their popularity, and like to dominate or be in charge of others. The others are more isolated from their peers and may be depressed or anxious, have low self-esteem, be less involved in school, be easily pressured by peers, or not identify with the emotions or feelings of others.

There are specific risk factors that make someone more likely to bully others. Those that are aggressive or easily frustrated, have difficulty following rules, and view violence in a positive way are more likely to bully. Also, those that think badly of others and have friends who bully are at higher risk for the same behavior. Finally, kids that have less parental involvement or are having issues at home may display more bullying behaviors.

Remember, those who bully others do not need to be stronger or bigger than those they bully. The power imbalance can come from several sources—popularity, strength, cognitive ability—and children who bully may have more than one of these characteristics.

Warning Signs of Bullying

There are many warning signs that may indicate that someone is affected by bullying—either being bullied or bullying others. Recognizing the warning signs is an essential first step in taking action against bullying. Not all children who are bullied or are bullying others ask for help.

It is important to talk with children who show signs of being bullied or bullying others. These warning signs can also point to other issues or problems, such as depression or substance abuse. Talking to the child can help identify the root of the problem.

Signs of Being Bullied

Look for changes in the child. However, be aware that not all children who are bullied exhibit warning signs.

Some signs that may point to a bullying problem are unexplainable injuries or lost and destroyed clothing, books, electronics, or jewelry. Those being bullied may report frequent headaches or stomach aches, feeling sick or faking illness. They may have changes in eating habits, like suddenly skipping meals or binge eating. Kids may come home from school hungry because they did not eat lunch. They may also have difficulty sleeping or frequent nightmares.

Signs of Bullying Others

Kids may be bullying others if they get into physical or verbal fights or have friends who bully others. They may demonstrate increasing levels of aggressive behavior and get sent to the principal's office or detention frequently. They may also have unexplained extra money or new belongings.

Why Don't Kids Ask for Help?

Statistics from the 2012 Indicators of School Crime and Safety show that an adult was notified in less than half (40%) of bullying incidents. Kids do not tell adults for many reasons. For one, bullying can make a child feel helpless. Kids may want to handle it on their own to feel in control again. They may fear being seen as weak or a tattletale. Kids may fear backlash from the kid who bullied them. Bullying can be a humiliating experience. Kids may not want adults to know what is being said about them, whether true or false. They may also fear that adults will judge them or punish them for being weak. Kids who are bullied may already feel socially isolated. They may feel like no one cares or could understand. Finally, kids may fear being rejected by their peers. Friends can help protect kids from bullying, and kids can fear of losing this support.

Effects of Bullying

Bullying can affect everyone—those who are bullied, those who bully, and those who witness bullying. Bullying is linked to many negative outcomes, including impacts on mental health, substance use, and suicide. It is important to talk to kids to determine whether bullying—or something else—is a concern.

Kids Who Are Bullied

Kids who are bullied can experience negative physical, school, and mental health issues. Kids who are bullied are more likely to experience depression and anxiety, increased feelings of sadness and loneliness, changes in sleep and eating patterns, and loss of interest in activities they used to enjoy. These issues may persist into adulthood. They may have more health complaints. Decreased academic achievement and school participation is a common effect of being bullied. They are also more likely to miss, skip, or drop out of school. A very small

number of bullied kids might retaliate through extremely violent measures. In 12 of 15 school shooting cases in the 1990s, the shooters had a history of being bullied.

Kids Who Bully Others

Kids who bully others can also engage in violent and other risky behaviors into adulthood. Kids who bully are more likely to abuse alcohol and other drugs in adolescence and as adults. They are also more likely to get into fights, vandalize property, and drop out of school. They have criminal convictions and traffic citations as adults. They may engage in early sexual activity. They are also more likely to be abusive toward their romantic partners, spouses, or children as adults.

Bystanders

Kids who witness bullying are more likely to miss or skip school. They are also more likely to use tobacco, alcohol, or other drugs. Bystanders are at increased risk of developing mental health problems, including depression and anxiety.

The Relationship Between Bullying and Suicide

Media reports often link bullying with suicide. However, most youth who are bullied do not have thoughts of suicide or engage in suicidal behaviors. Although kids who are bullied are at risk of suicide, bullying alone is not the cause. Many issues contribute to suicide risk, including depression, problems at home, and trauma history. Additionally, specific groups have an increased risk of suicide, including American Indian and Alaskan Native, Asian American, lesbian, gay, bisexual, and transgender youth. This risk can be increased further when these kids are not supported by parents, peers, and schools. Bullying can make an unsupportive situation worse.

Special Concern: Cyberbullying

Cyberbullying is bullying that takes place over digital devices like cell phones, computers, and tablets. Cyberbullying can occur through SMS, Text, and apps, or online in social media, forums, or gaming where people can view, participate in, or share content. Cyberbullying includes sending, posting, or sharing negative, harmful, false, or mean content about someone else. It can include sharing personal or private information about someone else, causing embarrassment or humiliation. Some cyberbullying crosses the line into unlawful or criminal behavior.

With the prevalence of social media and digital forums, comments, photos, posts, and content shared by individuals can often be viewed by strangers, as well as acquaintances. The content an individual shares online

— both their personal content as well as any negative, mean, or hurtful content — creates a kind of permanent public record of their views, activities, and behavior. This public record can be thought of as an online reputation, which may be accessible to schools, employers, colleges, clubs, and others who may be researching an individual now or in the future. Cyberbullying can harm the online reputations of everyone involved – not just the person being bullied, but those doing the bullying or participating in it. Cyberbullying has unique concerns in that it can be:

- **Persistent:** Digital devices offer the ability to immediately and continuously communicate 24 hours a day, so it can be difficult for children experiencing cyberbullying to find relief.
- **Permanent:** Most information communicated electronically is permanent and public, if not reported and removed. A negative online reputation, including for those who bully, can impact college admissions, employment, and other areas of life.
- **Hard to Notice:** Because teachers and parents may not overhear or see cyberbullying taking place, it is harder to recognize.

Cyberbullying and Online Gaming

Playing videogames is a popular activity, with 72 percent of teens gaming online. Many video games — whether they are console, web, or computer-based — allow users to play with friends they know in person and others they have met only online. While gaming can have positive benefits like making new friends, socializing, and learning how to strategize and problem solve, it is also another place where cyberbullying occurs.

The anonymity of players and the use of avatars allow users to create alter-egos or fictional versions of themselves, which is part of the fun of gaming. However, it also allows users to harass, bully, and sometimes gang up on other players, sending or posting negative or hurtful messages and using the game as a tool of harassment. If someone is not performing well, other children may curse or make negative remarks that turn into bullying, or they might exclude the person from playing together.

Because players are anonymous, they cannot necessarily be held accountable for their behavior, and their harassment can cause some players to leave games. Some anonymous users use the game as a means to harass strangers or to get their personal information, like user names and passwords.

There are things adults can do to prevent cyberbullying of children who are gaming. Parents should play the game or observe when the gaming happens to understand how it works and what a child is exposed to in the game. Check-in periodically with children about who is online, playing the game with them. Teach children about safe online behavior, including not clicking on links from strangers, not sharing personal information, not participating in bullying behavior of other players, and what to do if they observe or experience bullying. Establish rules about how much time a child can spend playing video games.

Warning Signs of Cyberbullying

Many of the warning signs that cyberbullying is occurring happen around a child's use of their device. Some of the warning signs that a kid may be involved in cyberbullying include noticeable increases or decreases in device use. Kids may exhibit unusual emotional responses (laughter, anger, upset) to what is happening on their device. A teen hides their screen or device when others are near, and avoids discussion about what they are doing on their device. There may be sudden changes to social media accounts, with accounts being shut down or new ones appear. If a teen starts to avoid social situations, even those that were enjoyed in the past. Alternatively, if they become withdrawn or depressed, or loses interest in people and activities.

What to Do When Cyberbullying Happens

When warning signs that a child may be involved in cyberbullying, adults should take steps to investigate that kid's digital behavior. Cyberbullying is a form of bullying, and adults should take the same approach to address it: support the person being bullied, address the bullying behavior of a participant, and show all involved that cyberbullying is taken seriously. Because cyberbullying happens online, responding to it requires different

approaches. If an adult thinks that cyberbullying is occurring, several things can be done. First, *recognize* if there has been a change in mood or behavior and explore what the cause might be. Try to determine if these changes happen around a child's use of their digital devices. *Ask* questions to learn what is happening, how it started, and who is involved. *Document* what is happening and where. Take screenshots of harmful posts or content, if possible. Most laws and policies note that bullying is a repeated behavior, so records help to document it. *Report* issues to social media platforms and refer to the school's reporting policies. If a child has received physical threats, or if a potential crime or illegal behavior is occurring, report it to the police. *Provide support*. Peers, mentors, and trusted adults can sometimes intervene publicly to positively influence a situation where negative or hurtful content posts about a child. Public Intervention can include posting positive comments about the person targeted with bullying to try to shift the conversation in a positive direction. It can also help to reach out to the child who is bullying and the target of the bullying to express concern. If possible, try to determine if more professional support is needed for those involved, such as speaking with a guidance counselor or mental health professional.

Watch it

Video 10.5.2. *Ways to Stop Bullying.*



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74.

Teen Dating

Healthy relationships in adolescence can help shape a young person's identity and prepare teens for more positive relationships during adulthood. Providing adolescents with tools to start and maintain healthy relationships (with romantic partners as well as peers, employers, teachers, and parents) may have a positive influence on young people's overall development.

The Role of Healthy Romantic and Dating Relationships

Adolescents tend to become more interested in dating around their mid-teens and become more involved in dating relationships during high school. Although dating does increase during this time, it is also normal for adolescents not to be in a relationship. Nearly two-thirds of teens (ages 13-17) have not been in a dating or romantic relationship. Thirty-five percent of teens (ages 13-17) have some experience with romantic relationships, and 19 percent are currently in a relationship. Older teens (ages 15-17) are more likely than younger teens to have experience with romantic relationships (Lenhart et al., 2015).

Adolescents date less now than they did in the past. This change is most striking for 12th-grade students, where the percentage of youth who did not date increased from 14 percent in 1991 to 38 percent in 2013. Adolescent sexual activity also has decreased from previous decades (Child Trends Databank, 2015). The percentage of U.S. high school students who had ever had sex decreased from 54 percent in 1992 to 40 percent in 2017 (Centers for Disease Control and Prevention, 2018).

Experiencing healthy dating relationships does have benefits to adolescent development. Knowing how to establish and maintain healthy romantic relationships can help adolescents grow. Healthy dating during the teenage years can be an essential way to develop social skills, learn about other people, and grow emotionally. These relationships also can play a role in supporting youth's ability to develop positive relationships in other areas, including: in school, with employers, and with partners during adulthood.

Both male and female youth value intimacy, closeness, and emotional investment in romantic relationships. These relationships can be accompanied by extreme excitement and happiness, but also by disappointment and sadness. However, some youth might go beyond the normal range of emotions and may experience depression.

While meeting partners online has been growing in popularity and is becoming more common among adults, few teens meet their romantic partners online. In 2015, only 8 percent of all teenagers had met a romantic partner online. Of course, many teens have never dated anyone, but among those with dating experience, 24 percent dated or hooked up with someone they first met online. Among this 24 percent, half of

the teens had met just one romantic partner online, while the other half had met more than one partner online (Lenhart et al., 2015).

Teen Dating Violence

Healthy relationships consist of trust, honesty, respect, equality, and compromise. Unfortunately, teen dating violence—the type of intimate partner violence that occurs between two young people who are, or who were once in, an intimate relationship—is a serious problem in the United States. Teen dating violence can take place in person or electronically, such as repeated texting or posting sexual pictures of a partner online without consent. Unhealthy relationships can start early and last a lifetime. Teens often think some behaviors, like teasing and name-calling, are a “normal” part of a relationship—but these behaviors can become abusive and develop into serious forms of violence. However, many teens do not report unhealthy behaviors because they are afraid to tell family and friends.

A national survey found that ten percent of teens, 1 in 11 females and 1 in 15 males, had been the victims of physical dating violence within the past year. Approximately 29 percent of adolescents reported being verbally or psychologically abused within the previous year. About 1 in 9 female and 1 in 36 male high school students report having experienced sexual dating violence in the last year. The burden of teen dating violence is not shared equally across all groups—sexual minority groups are disproportionately affected by all forms of violence, and some racial/ethnic minority groups are disproportionately affected by many types of violence.

As for perpetration rates, there are currently no nationwide estimates for who does the abusing, and state estimates vary significantly. In South Carolina, for example, nearly 8 percent of adolescents reported being physically violent to a romantic partner. Interestingly, the rates of reported victimization versus perpetration in the state were similar for boys and girls. However, when it comes to severe teen dating violence — including sexual and physical assault — girls were disproportionately the victims

Research on teen dating violence has found that girls and boys perpetrate the same frequency of physical aggression in romantic relationships. This finding was at odds with common perceptions and the experience of practitioners that work with these youth. Practitioners overwhelmingly report encountering female victims and hear that males are the primary perpetrators.

Teen Dating Violence Requires a Different Framework

Because teen dating violence has only recently been recognized as a significant public health problem, the complex nature of this phenomenon is not fully understood. Although research on rates of perpetration and victimization exists, research that examines the problem from a longitudinal perspective and considers the dynamics of teen romantic relationships is lacking. Consequently, those in the field have to rely on an adult framework to examine the problem of teen dating violence.

However, we find that this adult framework does not take into account key differences between adolescent

and adult romantic relationships. Thus, to help further the discussion, we offer in this article a gender-based analysis of teen dating violence with a developmental perspective. We look at what we know — and what we do not know — about who is the perpetrator and who is the victim in teen dating violence. We also discuss how adult and adolescent romantic relationships differ in the hope that an examination of existing research will help us better understand the problem and move the field toward the creation of developmentally appropriate prevention programs and effective interventions for teenagers.

Victims and Perpetrators: What the Research Says

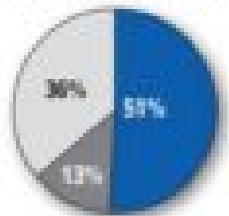
In 2001-2005, Peggy Giordano and her colleagues at Bowling Green State University interviewed more than 1,300 seventh, ninth and 11th graders in Toledo, Ohio. More than half of the girls in physically aggressive relationships said both they and their dating partner committed aggressive acts during the relationship. About a third of the girls said they were the sole perpetrators, and 13 percent reported that they were the sole victims. Almost half of the boys in physically aggressive relationships reported mutual aggression, nearly half reported they were the sole victim, and 6 percent reported that they were the sole perpetrator.

These findings are generally consistent with another study that looked at more than 1,200 Long Island, N.Y., high school students who were currently dating. In that 2007 survey, 66 percent of boys and 65 percent of girls who were involved in physically aggressive relationships reported mutual aggression (O’Leary et al., 2008). Twenty-eight percent of the girls said that they were the sole perpetrator; 5 percent said they were the sole victim. These numbers were reversed for the boys: 5 percent said they were the sole perpetrator, 27 percent the sole victim.

In a third study, teen couples were videotaped while performing a problem-solving task. Researchers later reviewed the tapes and identified acts of physical aggression that occurred between the boys and girls during the exercise. They found that 30 percent of all the participating couples demonstrated physical aggression by both partners. In 17 percent of the participating couples, only the girls perpetrated physical aggression, and in 4 percent, only the boys were perpetrators (Capaldi et al., 2007). The findings suggest that boys are less likely to be physically aggressive with a girl when someone else can observe their behavior.

Who Perpetrates Teen Dating Violence?

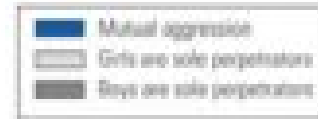
How girls in physically aggressive relationships see it



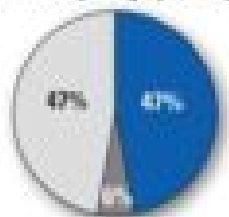
Source: Toledo Adolescent Relationship Study



Source: Suffolk County Study of Dating Aggression in High Schools



How boys in physically aggressive relationships see it



Source: Toledo Adolescent Relationship Study



Source: Suffolk County Study of Dating Aggression in High Schools

What is observed in physically aggressive couples



Source: Oregon Youth (Couple) Study

Figure 10.6.1. Statistics on the perpetration of physical teen violence by gender.

Considered together, the findings from these three studies reveal that frequently there is mutual physical aggression by girls and boys in romantic relationships. However, when it comes to *motivations* for using violence, and the consequences of being a victim of teen dating violence, the differences between the sexes are pronounced. Although both boys and girls report that anger is the primary motivating factor for using violence, girls also commonly report self-defense as a motivating factor, and boys also commonly cite the need to exert control. Boys are also more likely to react with laughter when their partner is physically aggressive. Girls experiencing teen dating violence are more likely than boys to suffer long-term negative behavioral and health consequences, including suicide attempts, depression, cigarette smoking, and marijuana use.

Applying Adult Perspectives to Teen Dating Violence

Why do teenagers commit violence against each other in romantic relationships? We have already touched on the existing body of research on perpetration and victimization rates. Nevertheless, there is not a great deal of research that uses a longitudinal perspective or that considers the dynamics of teen romantic relationships. As a result, practitioners and researchers in the field tend to apply an adult intimate partner violence framework when examining the problem of teen dating violence.

A split currently exists, however, among experts in the adult intimate partner violence arena. Some experts hold that men and women are mutually combative and that this behavior should be seen as part of a larger pattern of family conflict. Supporters of this view generally cite studies that use “act” scales, which measure the number of times a person perpetrates or experiences certain acts, such as pushing, slapping, or hitting. These studies tend to show that women report perpetrating slightly more physical violence than men. It is interesting to note that most studies on teen dating violence that have been conducted to date have relied primarily on “act” scales.

Another group of experts holds that men generally perpetrate serious intimate partner violence against women. They contend that men in patriarchal societies use violence to exert and maintain power and control over women. These experts also maintain that “act” scales do not accurately reflect the nature of violence in intimate relationships because they do not consider the degree of injury inflicted, coercive and controlling behaviors, the fear induced, or the context in which the acts occurred. Studies using “act” scales, they contend, lack information on power and control and emphasize the more common and relatively minor forms of aggression rather than more severe, relatively rare forms of violence in dating and intimate partner relationships. Instead, supporters of this perspective use data on injuries and in-depth interviews with victims and perpetrators.

We believe, however, that applying either of these adult perspectives to adolescents is problematic. Although both views of adult intimate partner violence can help inform our understanding of teen dating violence, it is important to consider how adolescent romantic relationships differ from adult romantic relationships in several key areas.

How Teen Dating Violence Differs: Equal Power

One difference between adolescent and adult relationships is the absence of elements traditionally associated with greater male power in adult relationships. Adolescent girls are not typically dependent on romantic partners for financial stability, and they are less likely to have children to provide for and protect.

The study of seventh, ninth and 11th graders in Toledo (Giordano et al., 2010), for example, found that a majority of the boys and girls who were interviewed said they had a relatively “equal say” in their romantic relationships. In cases in which there was a power imbalance, they were more likely to say that the female had more power in the relationship. Overall, the study found that the boys perceived that they had less power in the relationship than the girls did. Interestingly, males involved in relationships in which one or

both partners reported physical aggression had a perception of less power than males in relationships without physical aggression. Meanwhile, the girls reported no perceived difference in power regardless of whether their relationships included physical aggression.

It is interesting to note that adults who perpetrate violence against family members often see themselves as powerless in their relationships. This dynamic has yet to be adequately explored among teen dating partners.

Lack of Relationship Experience

A second key factor that distinguishes violence in adult relationships from violence in adolescent relationships is the lack of experience teens have in negotiating romantic relationships. Inexperience in communicating and relating to a romantic partner may lead to the use of poor coping strategies, including verbal and physical aggression. A teen who has difficulty expressing himself or herself may turn to aggressive behaviors (sometimes in play) to show affection, frustration, or jealousy. A recent study in which boys and girls participated in focus groups on dating found that physical aggression sometimes stemmed from an inability to communicate feelings and a lack of constructive ways to deal with frustration.

As adolescents develop into young adults, they become more realistic and less idealistic about romantic relationships. They have a greater capacity for closeness and intimacy. Holding idealistic beliefs about romantic relationships can lead to disillusionment and ineffective coping mechanisms when conflict emerges. It also seems reasonable to expect that physical aggression may be more common when adolescents have not fully developed their capacity for intimacy, including their ability to communicate.

The Influence of Peers

We would be remiss to try to understand teen behavior and not consider the profound influence of friends. Peers exert more influence on each other during their adolescent years than at any other time. Research has confirmed that peer attitudes and behaviors are critical influences on teens' attitudes and behaviors related to dating violence.

Not only are friends more influential in adolescence than in adulthood, but they are also more likely to be “on the scene” and a key element in a couple's social life. In fact, roughly half of adolescent dating violence occurs when a third party is present. Relationship dynamics often play out in a very public way because teens spend a large portion of their time in school and in groups. For various reasons, a boyfriend or girlfriend may act very differently when in the presence of peers, a behavior viewed by adolescents as characteristic of an unhealthy relationship. For example, boys in one focus group study said that if a girl hit them in front of their friends, they would need to hit her back to “save face.”

Conflict over how much time is spent with each other versus with friends, jealousies stemming from too much time spent with a friend of the opposite sex, and new romantic possibilities are all part of the social fabric of adolescence. Although “normal” from a developmental perspective, navigating such issues can cause conflict

and, for some adolescents, lead to aggressive responses and problematic coping strategies, such as stalking, psychological or verbal abuse, and efforts to gain control.

Risk Factors for Teen Dating Violence Victimization

Findings suggest that the frequency and severity of teen dating violence increase with age. In addition, the likelihood of being subjected to violence in a relationship increases for teens who:

- Experience stressful life events or show symptoms of trauma (including a history of sexual abuse or prior sexual victimization).
- Live in poverty, come from disadvantaged homes, or receive child protective services.
- Are exposed to community or neighborhood violence.
- Participate in risky behaviors (e.g., substance abuse, alcohol use, violence).
- Begin dating at an early age.
- Participate in sexual activity before age 16.
- Have problem behaviors in other areas.
- Have a friend involved in dating violence.
- Participate in peer violence or have violent friends.
- Believe that dating violence is acceptable or is more accepting of rape myths and violence against women.
- Begin menstruating at an early age (for women).
- Have been exposed to harsh parenting, inconsistent discipline, or lack supervision, monitoring, and warmth.
- Have low self-esteem, anger, or depressed mood.
- Use emotional disengagement and confrontational blaming as coping mechanisms.
- Exhibit maladaptive or antisocial behaviors.
- Have aggressive conflict-management styles.
- Have low help-seeking proclivities.

Risk Factors for Teen Dating Violence Perpetration

In addition to the issues discussed above, there are additional factors that are associated with teen dating violence perpetration include:

- Believing that it is acceptable to use threats or violence to get one's way or to express frustration or anger.
- Problems managing anger or frustration.
- Association with violent peers.
- Low self-esteem and depression.

- Not having parental supervision and support.
- Witnessing violence at home or in the community.

Impacts of Teen Dating Violence

Unhealthy, abusive, or violent relationships can have severe consequences and short-and long-term adverse effects on a developing teen. For example, youth who are victims of teen dating violence are more likely to experience symptoms of depression and anxiety, engage in unhealthy behaviors, like using tobacco, drugs, and alcohol, exhibit antisocial behaviors, like lying, theft, bullying, or hitting, and think about suicide.

Violence in an adolescent relationship sets the stage for problems in future relationships, including intimate partner violence and sexual violence perpetration and/or victimization throughout life. For example, youth who are victims of dating violence in high school are at higher risk for victimization during college.

In the case of sexual teen dating violence, it can negatively influence the development of healthy sexuality, intimacy, and identity as youth grow into adulthood. These experiences can increase the risk of physical injury, poor academic performance, binge drinking, suicide attempts, unhealthy sexual behaviors, substance abuse, negative body image and self-esteem, and violence in future relationships.

Teen dating violence can be prevented. Prevention is most successful when there is a focus on reducing risk factors as well as fostering protective factors. Teens should also be empowered through family, friends, and others (including role models such as teachers, coaches, mentors, and youth group leaders) to lead healthy lives and establish healthy relationships. It is crucial to create spaces, such as school communities, where the behavioral norms are not tolerant of abuse in dating relationships. The message must be clear that treating people in abusive ways will not be accepted, and policies must enforce this message to keep students safe.

Prevention Programs

The ultimate goal of education about youth violence is to stop teen dating violence before it begins. During the preteen and teen years, young people are learning the skills they need to form positive, healthy relationships with others. Therefore, it is an ideal time to promote healthy relationships and prevent patterns of teen dating violence that can last into adulthood.

In addition to teaching relationship skills, prevention programs can focus on promoting protective factors—that is, characteristics of a teen’s environment that can support healthy development—and positive youth development. These can also be fostered by a teen’s home and community. For example, higher levels of bonding to parents and enhanced social skills can protect girls against victimization. Similarly, for boys, high levels of parental bonding are associated with less externalizing behavior, which in turn is associated with less teen dating violence victimization.

Most of the handful of programs that have been empirically investigated are school-based and use a group format. Program length varies from less than a day to more than 20 sessions. A few programs frame the

issue using a feminist perspective, while others use a more skills-based and gender-neutral approach. Teen dating violence prevention programs tend to focus on attitudes about violence, gender stereotyping, conflict management, and problem-solving skills. Activities aimed at increasing awareness and dispelling myths about violence in relationships are often included in the curriculum.

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Glossary

[glossary-page]

clique: used to describe a group of persons who interact with each other more regularly and intensely than others in the same setting. Cliques are distinguished from “crowds” in that their members interact with one another

crowds: large groups of adolescents defined by their shared image and reputation

homophily: a tendency of individuals to form links disproportionately with others like themselves

deviant peer contagion: the process by which peers reinforce problem behavior by laughing or showing other signs of approval that then increase the likelihood of future problem behavior

peer pressure: encouragement to conform to one’s friends or contemporaries in behavior, dress, and attitude; usually considered a negative force, as when adolescent peers encourage one another to defy adult authority

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PART XI

GENDER & SEXUALITY DEVELOPMENT

Learning Objectives

- Differentiate between gender and sex
- Explain gender identity development through middle childhood and adolescence
- Compare and contrast the biological, cognitive, and social perspective on gender identity development
- Explain sexual identity development through middle childhood and adolescence
- Explain the development of gender stereotype and factors contributing to gender stereotype through middle childhood and adolescence

Gender refers to the social, psychological, cultural, and behavioral traits associated with being male, female, or another gender identity. As children's identity develops, their understanding of their own gender identity also changes. It is important to note that gender is a socially constructed term. As such, we do not born with understanding of gender identity or perceptions of what is "typical" and "atypical" of a specific gender. As children entered school system and as their sexuality develops, their understanding of gender as a category and their own gender identity also goes through changes. Family, social media, and peers all played an important role in this development as well as their attitude towards their own gender and other genders. We will explore the different theories on the development of gender and sexual identity, how we form gender stereotype and what influences the development of our gender stereotype in this chapter.



As mentioned previously, **Gender identity** is one's self-conception of their gender. Sex is the term to refer to the biological differences between males and females, such as the genitalia and genetic differences. While gender refers to the socially constructed characteristics of women and men, such as norms, roles, and relationships between groups of women and men. **Cisgender** is an umbrella term used to describe people whose sense of personal identity and gender corresponds with their birth sex,

while **transgender** is a term used to describe people whose sense of personal identity does not correspond with their birth sex.

Gender expression, or how one demonstrates gender (based on traditional gender role norms related to clothing, behavior, and interactions), can be feminine, masculine, androgynous, or somewhere along a spectrum. Many adolescents use their analytic, hypothetical thinking to question traditional gender roles and expression. If their genetically assigned sex does not line up with their gender identity, they may refer to themselves as transgender, non-binary, or gender-nonconforming.

Fluidity and uncertainty regarding sex and gender are especially common during middle childhood and early adolescence when hormones increase and fluctuate, creating a difficulty of self-acceptance and identity achievement (Reisner et al., 2016). Gender identity is becoming an increasingly prolonged task as attitudes and norms regarding gender keep changing. The roles appropriate for males and females are evolving, and some adolescents may foreclose on a gender identity as a way of dealing with this uncertainty by adopting more stereotypic male or female roles (Sinclair & Carlsson, 2013). Those that identify as transgender or 'other' face even more significant challenges.

Biological Approach to Gender Identity Development

The biological approach explores how gender identity development is influenced by genetics, biological sex characteristics, brain development, and hormone exposure.

Humans usually have 23 pairs of chromosomes, each containing thousands of genes that govern various aspects of our development. The 23rd pair of chromosomes are called the sex chromosomes. This pair determines a person's sex, among other functions. Most often, if a person has an XX pair, they will develop into a female, and if they have an XY pair, then they will be male.

Around the sixth week of prenatal development, the SRY gene on the Y chromosome signals the body to

develop as a male. This chemical signal triggers a cascade of other hormones that will tell the gonads to develop into testes. If the embryo does not have a Y or the if, for some reason, the SRY gene is missing or not activate, then the embryo will develop female characteristics. The baby is born and lives as a female, but genetically her chromosomes are XY. Rat studies have found that the reverse is also possible. Researchers implanted the SRY gene in rats with XX chromosomes, and the result was male baby mice.

Individuals with atypical chromosomes may also develop differently than their typical XX or XY counterparts. These chromosomal abnormalities include syndromes where a person may have only one sex chromosome or three sex chromosomes. Turner's Syndrome is a condition where a female has only one X chromosome (XO). This missing chromosome results in a female external appearance but lacking ovaries. These XO females do not mature through puberty like XX females and they may also have webbed skin around the neck. Cognitively, these females tend to have high verbal skills, poor spatial and math skills, and poor social adjustment.

Klinefelter's Syndrome is a condition where a male has an extra X chromosome (XXY). This XXY combination results in male genitals, although their genitals may be underdeveloped even into adulthood. Even after puberty, they tend to have less body and facial hair and may develop breasts. From infancy, these children often have a passive, cooperative, and shy personality that remains into adulthood. Cognitively, they are often late to talk and have poor language and reading skills.

As we learned in the physical development chapter, sex hormones cause biological changes to the body and brain. While the same sex hormones are present in males and females, the amount of each hormone and the effect of that hormone on the body is different. Males have much higher levels of testosterone than females. In the womb, testosterone causes the development of male sex organs. It also impacts the hypothalamus, causing an enlarged sexually dimorphic nucleus, and results in the 'masculinization' of the brain. Around the same time, testosterone may contribute to greater lateralization of the brain, resulting in the two halves working more independently of each other. Testosterone also affects what we often consider male behaviors, such as aggression, competitiveness, visual-spatial skills, and higher sex drive.

Cognitive Approaches to Gender Identity Development

Cognitive Learning Theory

Cognitive learning theory states that children develop gender at their own levels. At each stage, the child thinks about gender characteristically. As a child moves forward through stages, their understanding of gender becomes more complex.

The following cognitive model, formulated by Kohlberg, asserts that children recognize their gender identity around age three but do not see it as relatively fixed until the ages of five to seven. This identity marker provides children with a schema, a set of observed or spoken rules for how social or cultural interactions should happen.

Information about gender is gathered from the environment; thus, children look for role models to emulate maleness or femaleness as they grow.

Stage 1: Gender Labeling (2-3.5 years). The child can label their gender correctly.

Stage 2: Gender Stability (3.5-4.5 years). The child's gender remains the same across time.

Stage 3: Gender Constancy (6 years). The child's gender is independent of external features (e.g., clothing, hairstyle).

Once children form a basic gender identity, they start to develop gender schemas. These gender schemas are organized set of gender-related beliefs that influence behaviors. The formation of these schemas explains the process by which gender stereotypes become so psychologically ingrained in our society.

Gender Schema Theory

Sandra Bem's **Gender Schema Theory**, rooted in Piaget's cognitive developmental theory, views children as active learners who build mental frameworks—or schemas—to understand gender as a social category. Children observe and categorize behaviors, roles, and attributes associated with gender, and over time, they assimilate new information into these schemas or adjust them through accommodation. This process helps refine their understanding of what is considered “appropriate” for each gender based on social input. According to this theory, gender schemas can be organized into four general categories. The **sex-type schema** is the belief that gender matches biological sex. **Sex-reversed schema** is when gender is the opposite of biological sex. Possessing both masculine and feminine traits is an **androgynous schema**. While possessing few masculine or feminine traits is an **undifferentiated schema**.

Social Approaches to gender identity development

Social Learning Theory

Social Learning Theory is based on outward motivational factors that argue that if children receive positive reinforcement, they are motivated to continue a particular behavior. If they receive punishment or other indicators of disapproval, they are more motivated to stop that behavior. In terms of gender development, children receive praise if they engage in culturally appropriate gender displays and punishment if they do not. When aggressiveness in boys is met with acceptance or a “boys will be boys” attitude, but a girl's aggressiveness earns them little attention, the two children learn different meanings for aggressiveness as it relates to their gender development. Thus, boys may continue being aggressive while girls may drop it out of their repertoire.

Intergroup Theory

Intergroup theory suggests that while young children can perceive gender differences, they do not automatically attach meaning or stereotypes to those differences. However, adults often

use gendered language and emphasize gender distinctions, which signals to children that gender is an important category. Over time, this emphasis leads children to form stereotypes based on gender. For example, a young girl may notice differences between herself and her brother, but she might not see those differences as meaningful unless her parents treat them differently—for instance, assigning her brother physical chores like mowing the lawn while she is asked to do indoor tasks like washing dishes.



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Transgender Identity Development

Individuals who identify with the role that is different from their biological sex are called **transgender**. Approximately 1.4 million U.S. adults or .6% of the population are transgender, according to a 2016 report (Flores et al., 2016).

Transgender individuals may choose to alter their bodies through medical interventions such as surgery and hormonal therapy so that their physical being is better aligned with gender identity. They may also be known as male-to-female (MTF) or female-to-male (FTM). Not all transgender individuals choose to alter their bodies; many will maintain their original anatomy but may present themselves to society as another gender. This expression is typically done by adopting the dress, hairstyle, mannerisms, or other characteristics typically assigned to another gender. It is important to note that people who cross-dress or wear clothing that is traditionally assigned to a different gender is not the same as identifying as transgender. Cross-dressing is typically a form of self-expression, entertainment, or personal style, and it is not necessarily an expression against one's assigned gender (APA 2008).

After years of controversy over the treatment of sex and gender in the American Psychiatric Association Diagnostic and Statistical Manual for Mental Disorders (Drescher 2010), the most recent edition, DSM-5, responded to allegations that the term “gender identity disorder” is stigmatizing by replacing it with “**gender dysphoria**.” Gender identity disorder as a diagnostic category stigmatized the patient by implying there was something “disordered” about them. Removing the word “disorder” also removed some of the stigmas while still maintaining a diagnosis category that will protect patient access to care, including hormone therapy and gender reassignment surgery.

In the DSM-5, gender dysphoria is a condition of people whose gender at birth is contrary to the one with which they identify. For a person to be diagnosed with gender dysphoria, there must be a marked difference between the individual's expressed/experienced gender and the gender others would assign him or her, and it must continue for at least six months. In children, the desire to be of the other gender must be present and

verbalized (APA, 2013). Changing the clinical description may contribute to greater acceptance of transgender people in society. A 2017 poll showed that 54% of Americans believe gender is determined by sex at birth, and 32% say society has “gone too far” in accepting transgender people; views are sharply divided along political and religious lines (Salam, 2018).

Many psychologists and the transgender community are now advocating an affirmative approach to transgender identity development. This approach advocates that gender non-conformity is not a pathology but a normal human variation. Gender non-conforming children do not systemically need mental health treatment if they are not “pathological.” However, care-givers of gender non-conforming children can benefit from a mixture of psycho-educational and community-oriented interventions. Some children or teens may benefit from counseling or other interventions to help them cope with familial or societal reactions to their gender-nonconformity.

Studies show that people who identify as transgender are twice as likely to experience assault or discrimination as non-transgender individuals; they are also one and a half times more likely to experience intimidation (National Coalition of Anti-Violence Programs 2010; Giovanniello, 2013). Trans women of color are most likely to be victims of abuse. There are also systematic aggressions, such as “deadnaming,” (whereby trans people are referred to by their birth name and gender), laws restricting transpersons from accessing gender-specific facilities (e.g., bathrooms), or denying protected-class designations to prevent discrimination in housing, schools, and workplaces. Organizations such as the National Coalition of Anti-Violence Programs and Global Action for Trans Equality work to prevent, respond to and end all types of violence against transgender and homosexual individuals. These organizations hope that by educating the public about gender identity and empowering transgender individuals, this violence will end.

Like other domains of identity, stage models for transgender identity development have helped describe a typical progression in identity formation. Lev’s Transgender Emergence Model looks at how trans people come to understand their identity. Lev is working from a counseling/therapeutic point of view, thus this model talks about what the individual is going through and the responsibility of the counselor.

Stage 1: Awareness. In this first stage of awareness, gender-variant people are often in great distress; the therapeutic task is the normalization of the experiences involved in emerging as transgender.

Stage 2: Seeking Information/Reaching Out. In the second stage, gender-variant people seek to gain education and support about transgenderism; the therapeutic task is to facilitate linkages and encourage outreach.

Stage 3: Disclosure to Significant Others. The third stage involves the disclosure of transgenderism to significant others (spouses, partners, family members, and friends); the therapeutic task involves supporting the transgender person’s integration in the family system.

Stage 4: Exploration (Identity & Self-Labeling). The fourth stage involves the exploration of various (transgender) identities; the therapeutic task is to support the articulation and comfort with one’s gendered identity.

Stage 5: Exploration (Transition Issues & Possible Body Modification). The fifth stage involves

exploring options for transition regarding identity, presentation, and body modification; the therapeutic task is the resolution of the decision and advocacy toward their manifestation.

Stage 6: Integration (Acceptance & Post-Transition Issues). In the sixth stage, the gender-variant person can integrate and synthesize (transgender) identity; the therapeutic task is to support adaptation to transition-related issues.

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Sexual Identity

Sexual identity is how one thinks of oneself in terms of to whom one is romantically or sexually attracted (Reiter, 1989). Sexual identity may also refer to **sexual orientation identity**, which is when people identify or dis-identify with a sexual orientation or choose not to identify with a sexual orientation (APA, 2009). Sexual identity and sexual behavior are closely related to sexual orientation but they are distinguished (Reiter, 1989), with *identity* referring to an individual's conception of themselves, *behavior* referring to actual sexual acts performed by the individual, and *sexual orientation* referring to romantic or sexual attractions toward persons of the opposite sex or gender, the same sex or gender, to both sexes or more than one gender, or no one.

Sexual orientation is typically discussed as four categories: *heterosexuality*, the attraction to individuals of the other sex; *homosexuality*, the attraction to individuals of the same sex; *bisexuality*, the attraction to individuals of either sex; and *asexuality*, no attraction to either sex. However, others view sexual orientation as less categorical and more of a continuum.

Alfred Kinsey was among the first to conceptualize sexuality as a continuum rather than a strict dichotomy of gay or straight. He created a six-point rating scale that ranges from exclusively heterosexual to exclusively homosexual (Figure 11.2.1). In his 1948 work, *Sexual Behavior in the Human Male*, Kinsey writes, "Males do not represent two discrete populations, heterosexual and homosexual. The world is not to be divided into sheep and goats ... The living world is a continuum in each and every one of its aspects" (Kinsey et al., 1948).

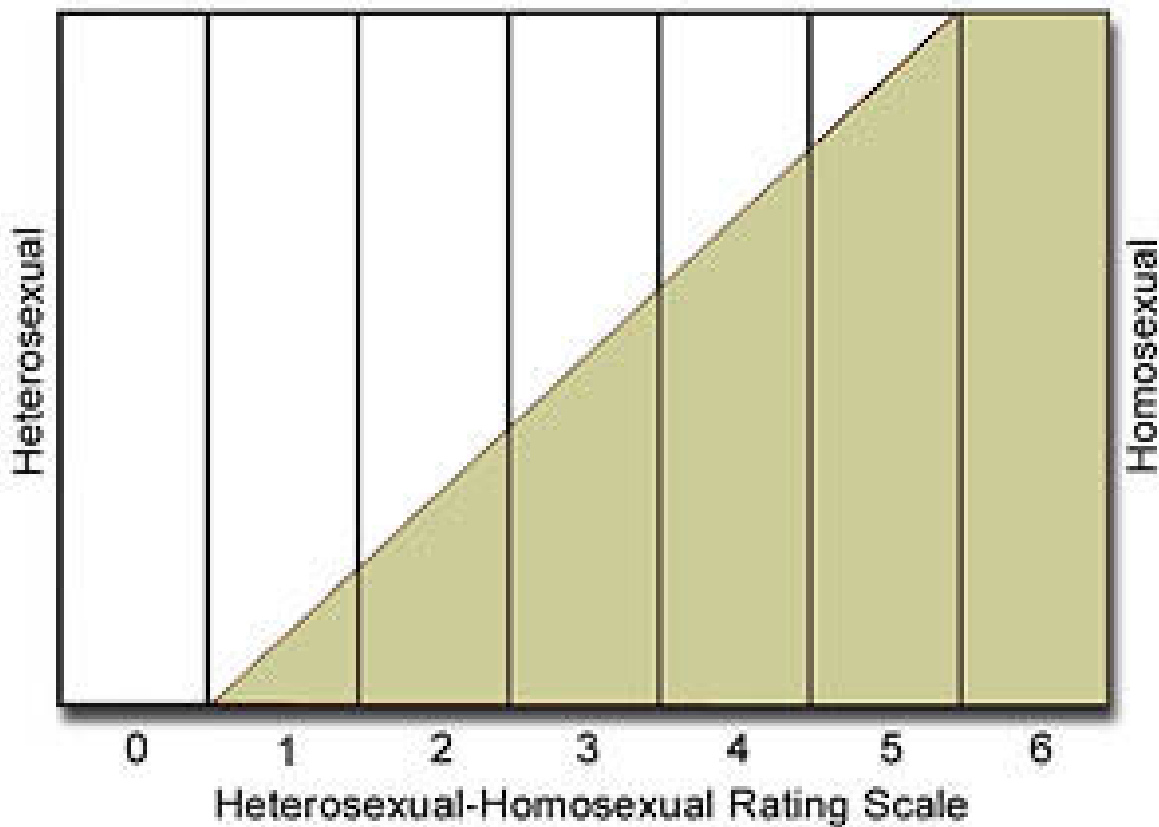


Figure. 11.2.4. The Kinsey scale indicates that sexuality can be measured by more than just heterosexuality and homosexuality.

Later scholarship by Eve Kosofsky Sedgwick expanded on Kinsey’s notions. She coined the term “homosocial” to oppose “homosexual,” describing nonsexual same-sex relations. Sedgwick recognized that in U.S. culture, males are subject to a clear divide between the two sides of this continuum, whereas females enjoy more fluidity. This difference can be illustrated by the way women in the United States can express homosocial feelings (nonsexual regard for people of the same sex) through hugging, handholding, and physical closeness. In contrast, U.S. males refrain from these expressions since they violate the heteronormative expectation that male sexual attraction should be exclusively for females. Research suggests that it is easier for women to violate these norms than men because men are subject to more social disapproval for being physically close to other men (Sedgwick, 1985).

The issue of sexual identity and orientation can be further complicated when considering differences in romantic attraction versus sexual attraction. A person could be romantically interested in the same sex, different sex, or any gender but could feel sexually attracted to the same or different group. For example, an individual could be interested in a romantic relationship with males but be sexually attracted to males and females. Alternatively, someone may be open to a romantic relationship with any gender but is primarily only sexually attracted to one sex.

The United States is a **heteronormative society**, meaning it assumes that heterosexuality is the norm and

that sexual orientation is biologically determined and unambiguous. Consider that homosexuals are often asked, “When did you know you were gay?” but heterosexuals are rarely asked, “When did you know that you were straight?” (Ryle 2011). However, there is no scientific consensus regarding the exact reasons why an individual holds a particular sexual orientation. Research has been conducted to study the possible genetic, hormonal, developmental, social, and cultural influences on sexual orientation, but there has been no definitive evidence that links sexual orientation to one factor (APA, 2008).

According to current understanding, individuals are usually aware of their sexual orientation between middle childhood and early adolescence (APA, 2008). They do not have to participate in sexual activity to be aware of these emotional, romantic, and physical attractions; people can be celibate and still recognize their sexual orientation. Homosexual women (also referred to as lesbians), homosexual men (also referred to as gays), and bisexuals of both genders may have very different experiences of discovering and accepting their sexual orientation. At the point of puberty, some may be able to announce their sexual orientations, while others may be unready or unwilling to make their homosexuality or bisexuality known since it goes against U.S. society’s historical norms (APA 2008).

Most of the research on sexual orientation identity development focuses on the development of people who are attracted to the same sex. Many people who feel attracted to members of their own sex ‘come out’ at some point in their lives. *Coming out* is described in three phases. The first phase is the phase of “knowing oneself,” and the realization emerges that one is sexually and emotionally attracted to members of one’s own sex. This step is often described as an internal coming out and can occur in childhood or at puberty, but sometimes as late as age 40 or older. The second phase involves a decision to come out to others, e.g., family, friends, and/or colleagues. The third phase involves living openly as an LGBT person (Human Rights Campaign, 2007). In the United States today, people often come out during high school or college age. At this age, they may not trust or ask for help from others, especially when their orientation is not accepted in society. Sometimes they do not inform their own families.

According to Rosario, Schrimshaw, Hunter, Braun (2006), “the development of a lesbian, gay, or bisexual (LGB), sexual identity is a complex and often difficult process. Unlike members of other minority groups (e.g., ethnic and racial minorities), most LGB individuals are not raised in a community of similar others from whom they learn about their identity. Their identity may not be reinforced and supported by their community. Instead, “LGB individuals are often raised in communities that are either ignorant of or openly hostile toward homosexuality.”

Cass' Homosexual Identity Model

Cass (1979) was one of the early creators of a model for explaining how individuals progress through the development of a homosexual identity. Cass proposed six stages. It may take several years to get through a particular stage and not all make it to stage 6. “Foreclosure” (when an individual denies their identity or hides it from others) can occur at any stage and halt the process.

Stage 1: Identity Awareness. The individual is aware of being “different” from others.

Stage 2: Identity Comparison. The individual compares their feelings and emotions to those they identify as heterosexual.

Stage 3: Identity Tolerance. The individual tolerates their identity as being non-heterosexual.

Stage 4: Identity Acceptance. The individual accepts their new identity and begins to become active in the “gay community.”

Stage 5: Identity Pride. The individual becomes proud of their identity and becomes fully immersed in “gay culture.”

Stage 6: Identity Synthesis. The individual fully accepts their identity and synthesizes their former “heterosexual life” and their new identity.

A criticism of Cass’ model is that her research primarily studied white gay men and lesbian women of middle- to upper-class status. This stage model is not necessarily reflective of the process a bisexual or transgender individual may experience and, ultimately, may not be reflective of the process experienced by all non-heterosexual individuals.

Some individuals with unwanted sexual attractions may choose to actively dis-identify with a sexual minority identity, which creates a different sexual orientation identity from their actual sexual orientation. Sexual orientation identity, but not sexual orientation, can change through psychotherapy, support groups, and life events. A person who has homosexual feelings can self-identify in various ways. An individual may come to accept an LGB identity, to develop a heterosexual identity, to reject an LGB identity while choosing to identify as ex-gay or to refrain from specifying a sexual identity (APA, 2009).

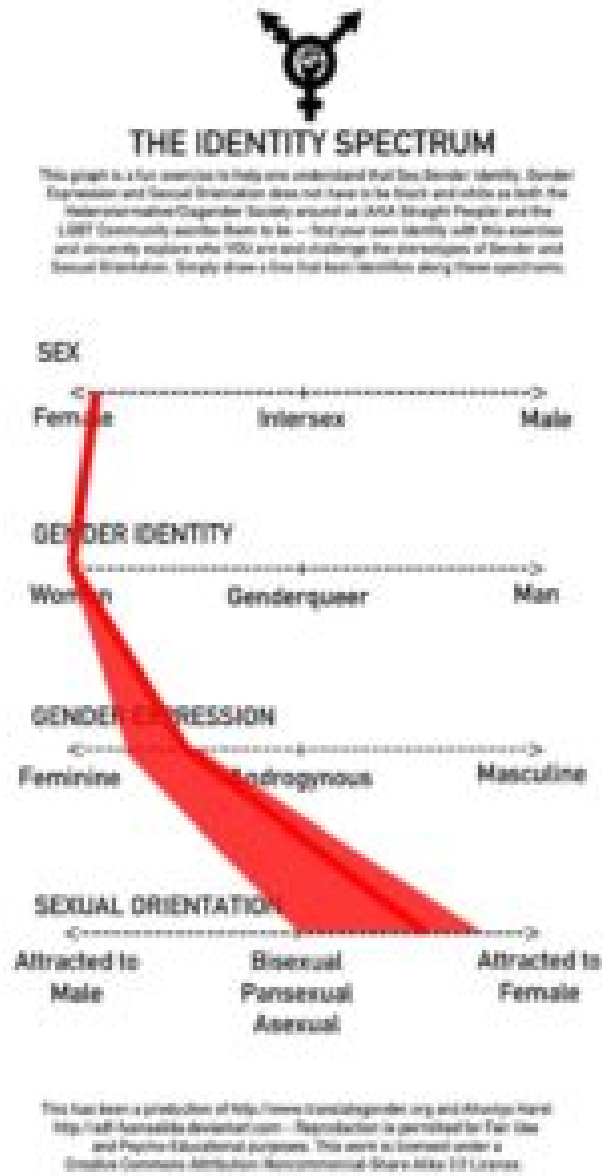


Figure 8.4.5. This identity spectrum shows the fluidity between sex, gender identity, gender expression, and sexual orientation.



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Video 11.2.2. *Demographic Structure of Society–Sex, Gender, and Sexual Orientation* explains various aspects of gender and sexual identity.

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As we previously discussed, gender is distinct from sex. **Gender** refers to the social, psychological, cultural, and behavioral traits associated with being male, female, or another gender identity. **Sex**, in contrast, refers to biological characteristics, such as chromosomes, hormones, and reproductive anatomy. As children's gender identity continues to develop, their understanding of the traits, roles, and expectations associated with different genders also evolves over time.

In general, younger children tend to hold rigid gender stereotypes, but this rigidity often decreases as they enter middle childhood. For example, one study found that while only 33.8% of 5-year-olds believed that objects like vacuum cleaners were for both men and women, that number increased to 87.8% among 11-year-olds (Banse et al., 2010). However, this flexibility may decline again during adolescence, a time when youth begin exploring identity more deeply and often conform more closely to traditional gender roles. A study by Alferi and colleagues (1996) found that gender flexibility peaked in grades 7–8 and declined afterward, suggesting a return to more rigid views during later adolescence.

Measuring gender stereotypes

Gender stereotypes are commonly measured by assessing whether youth categorize certain attributes as male- or female-typical (i.e., gender stereotypes) and whether they view it as acceptable for both genders to express those traits (i.e., gender flexibility). In recent years, researchers have also turned to implicit measures such as the Implicit Association Test (IAT) to capture unconscious gender biases. In these tasks, participants categorize words or images related to gender (e.g., “man,” “woman”) and domains (e.g., “math,” “language”). In congruent trials, gender-stereotypical pairings are grouped together (e.g., male/math), while in incongruent trials, non-stereotypical pairings are grouped (e.g., female/math). If participants have implicit stereotypes (e.g., associating men more strongly with math), they tend to respond more slowly in the incongruent trials. Research has consistently shown that such implicit biases are common in both adolescents and adults.



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Video 11.3.1. Explaining what is an implicit bias test

What influences gender stereotype?

Multiple factors contribute to the development of gender stereotypes, including family, media, and peers. Families, particularly fathers, often reinforce traditional gender roles, sometimes unconsciously. For example, boys are typically encouraged to be more independent and are often granted more autonomy than girls at an early age. These expectations extend to academic domains as well. One study found that when parents believed girls should be better at language arts and boys at math, their daughters internalized these beliefs—resulting in lower math performance and reduced enrollment in advanced STEM courses (Aidy et al., 2021).

Social media and peer influence also play a powerful role in shaping gender perceptions during adolescence. Social media often promotes narrow ideals, such as unrealistic body standards for girls, which can increase body dissatisfaction and reinforce gendered expectations. Similarly, peer influence can strengthen traditional gender role beliefs. A study of Belgian adolescents found that those with more same-sex friendships and higher levels of peer pressure were more likely to adopt traditional gender attitudes during early adolescence (Halimi et al., 2020).

Middle childhood and adolescence are critical periods for identity exploration, including gender identity and beliefs. During this time, children and adolescents form more complex understandings of themselves and others. Therefore, it is crucial for families and schools to foster supportive environments that encourage gender flexibility and challenge harmful stereotypes. Doing so can promote healthier development and reduce stress related to rigid or limiting gender expectations.

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Contacts

Email: n.ardinivanhoos@hvcc.edu

Website: <https://sites.google.com/view/profavh>

LinkedIn: <https://www.linkedin.com/in/nicoleardinivanhoose/>

Affiliations

Associate Professor of Psychology
Social Sciences & Education Department
Hudson Valley Community College, Troy, NY

Ph.D., Educational Psychology
School of Education
University at Albany, SUNY, Albany, NY

Post-Graduate Study, Counseling
M.S.Ed., Educational Psychology
B.S., Education
Lally School of Education

The College of Saint Rose, Albany, NY

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