Child and Adolescent Psychology

Child and Adolescent Psychology

FLORIDA STATE COLLEGE AT JACKSONVILLE

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PART I
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1. About This Module: The Field of Child Psychology

Introduction

To get things started in this course, you will start first by orienting yourself with the science of developmental psychology. Believe it or not, the scientific analysis of children is a fairly young field, though despite its youth, is a vibrant and diverse field. Though philosophers, poets, and artists have speculated for centuries about the very nature of children, it was not until the birth of the field of psychology in the 20 [th] century that scientists began to objectively and systematically measure and assess the behavior of children.

Child development as a field is encompasses many academic disciplines and perspectives. Thus, there are many scientific angles that you will consider as you read through Chapter 1 (and the whole course!). The topic is approached and investigated by many disciplines; including psychology, medicine, sociology, and health, just to name a few. As you might guess, a variety of research methods are also used to study children's development. It is just as important to understand these research methods and theoretical perspectives as it is to know about the people who have contributed to and shaped the field of child psychology. So, your goal in this module is to become familiar with those scientists whose work shaped the field from its beginning, as well as to learn the main methods of research that child psychologists use to observe and assess children's development.

Just as this field is broad and diverse, so are the backgrounds that you — the students in this course — bring to the table. For example, it can almost be guaranteed that each person in this course has had a different background and upbringing — whether that be the

type of parenting you received, the type of school you attended, the health issues you might have faced, your mother's health during her pregnancy with you, your genetics, or, simply, your basic inborn personality characteristics.

Some of you may have had little or no formal education around human development and psychology. One goal, then, for this first module is to orient you to the history of the field so everyone starts out on similar footing as we gradually move through the course content. Hopefully, by the end of this module, you will have a better understanding of how and why a course like this even exists and how much more there is to learn about human nature and the important milestones of children's development. [1]

Learning Outcomes

1. Students will be able to describe the field of child and adolescent psychology, including the main theories, research methods, and principles of development. [1]

Objectives

Upon completion of this module,the student will be able to:

- Explain the main principles and concepts in the field of child and adolescent psychology.
- Differentiate the research methodologies used in child development.
- Evaluate the developmental theories. [1]

Readings

Online Learning Unit

Greetings and Introductions

Use this forum to introduce yourself to the professor and the class. Tell us a little about yourself, including some of the things you expect to get out of this course.(1)

2. Unit 1: Child Development - Foundations of Child and Adolescent Psychology

Historical Views of Child and Adolescent Development

Since the dawn of civilization, parents and educators have wondered how to best raise a child. From ancient Greek and Chinese philosophers, to those that wrote the Old Testament and Tripitaka, words of wisdom have been shared on how to correctly raise a child. Of course, one's view on how to raise a child is going to be influenced by his or her view of human nature.

Aristotle (384–322 BC) believed that children are born as blank slates. This is known as the tabula rasa view of human nature. An English philosopher, named John Locke (1632–1704) shared the tabula rasa view. This view of human nature sees children and their development shaped by their environment and experiences. Locke advocated for parents to be good role models for their children in order to facilitate the development of character. Children learn self-control, kindness, and honesty by observing their parents exhibit these traits.

Original sin is another view of human nature. Within this view, humans are born with the original sin of Adam and Eve. While Baptism can remove this sin, the soul is still warped and susceptible to choosing evil over good. Within this view, children must be raised to accept the moral doctrine of society and to always be mindful to behave in morally acceptable ways. Without such instruction, children are likely to behave in ways that are either harmful to themselves or harmful to others.

The final view of human nature that we are going to learn about is referred to as the **innate goodness** view. Jean-Jacques Rousseau (1712–1778), a French philosopher, was an advocate of this view. He believed that infants are born inherently good, and that it is society that can corrupt them. In his writings, he refers to the native savage. This is the idea that if a child is raised away from civilization and with minimal restrictions on his freedom, then that child would manifest the innate goodness with which he was born. In this view, parents simply need to give the child freedom to develop along his or her pathway, and to protect them from the corruptible influences of society.

How we view human nature influences every interaction that we have with others. However, we need to examine one more historical issue beyond human nature. At what age are children capable of adult behaviors? In modern America, we do not expect children to be left alone or capable of caring for themselves before late childhood or early adolescence. However, it was not always this way. During the Industrial Revolution, children as young as five worked in factories for up to 12 hours a day. Even today, there are cultures around the globe that allow young children to cook over open fires, carry machetes, and care for younger siblings. Therefore, there is no simple answer to this question. It really depends on where and when you live. [1]

Watch this silent, black and white film. It shows how children were used and treated in hard labor prior to World War I. It shows how the concept and experience of childhood has changed across history.

The Cry of Children (1912) by Carl Lewis Gregory resides in the CC-BY-NC-ND 3.0.

Domains of Development

Development is often viewed as occurring in three distinct, yet interrelated, domains:

1. Physical
2. Cognitive
3. Socioemotional

Our course will examine, in depth, development in each of these three domains. For now, we will just introduce you to the type of topics that are studied within each domain.

Physical development includes genetics, prenatal development, physical development, sensation/perception, and motor skill development.

Cognitive development includes changes in thinking across childhood, attention, memory, intelligence, problem solving, language, and academic skill development.

Socioemotional development includes the influence of parenting style, peers and friendships, play, schools, society, and culture.

While we study these domains separately, it is clear to see how they are interrelated. For example, let us consider a child putting on a pair of shoes. Physically, she has to have the motor skills to put the shoes on. Cognitively, she needs to have the problem solving skills to decide which shoes are appropriate for where she is going. Socioemotionally, her parents, peers, and what she has seen on television are going to influence the type of shoes that she wants. From playing a game to how we grieve, all three domains are always at work. [1]

Developmental Issues

There are a few key developmental issues that help guide research

and theory development. The first issue would be the nature/nurture question.

Nature refers to anything biological in nature, such as genetics. **Nurture** refers to environmental factors, such as family, friends, and schools. Traditionally, this issue was viewed in terms of how much of some characteristic (e.g., personality) was due to nature and how much was due to nurture. However, we now know that such a viewpoint is far too simplistic. Instead, any developmental outcome is due to the collaboration among nature, nurture, and personal agency.

Another developmental issue is the question of sensitive periods of development. Said another way, is there a certain age range where if a child does not acquire a skill or process, it becomes too late? In this course, we will learn about two areas where there is, indeed, a sensitive period: Language acquisition and attachment.

A third developmental issue is focused upon whether development occurs continuously or in stages. If you think about prenatal development, development is occurring every day, from conception to birth. However, when we study prenatal development, you will find that it is divided into three stages, with each stage ending due to an event or major milestone. Some topics that we will study in here will look at development as continuous, while others will be examined as occurring in stages. [1]

Stages of Development

Think about the life span and make a list of what you would consider the periods of development. How many stages are on your list? Perhaps you have three: childhood, adulthood, and old age. Or maybe four: infancy, childhood, adolescence, and adulthood. Developmentalists break the life span into nine stages as follows:

1. Prenatal Development

2. Infancy and Toddlerhood
3. Early Childhood
4. Middle Childhood
5. Adolescence
6. Early Adulthood
7. Middle Adulthood
8. Late Adulthood
9. Death and Dying

This list reflects unique aspects of the various stages of childhood that will be explored in this course. So while both an 8 month old and an 8 year old are considered children, they have very different motor abilities, social relationships, and cognitive skills. Their nutritional needs are different and their primary psychological concerns are also distinctive. But first, here is a brief overview of the stages of life.

Click on each box for information.

Prenatal Development

Conception occurs and development begins. All of the major structures of the body are forming and the health of the mother is of primary concern. Understanding nutrition, teratogens (or environmental factors that can lead to birth defects), and labor and delivery are primary concerns.

Infancy and Toddlerhood

The first year and a half to two years of life are ones of dramatic growth and change. A newborn, with a keen sense of hearing but very poor vision is transformed into a walking, talking toddler within

a relatively short period of time. Caregivers are also transformed from someone who manages feeding and sleep schedules to a constantly moving guide and safety inspector for a mobile, energetic child.

Early Childhood

The ages of six through eleven comprise middle childhood and much of what children experience at this age is connected to their involvement in the early grades of school. Now the world becomes one of learning and testing new academic skills and by assessing one's abilities and accomplishments by making comparisons between self and others. Schools compare students and make these comparisons public through team sports, test scores, and other forms of recognition. Growth rates slow down and children are able to refine their motor skills at this point in life. And children begin to learn about social relationships beyond the family through interaction with friends and fellow students.

Middle Childhood

The ages of six through eleven comprise middle childhood and much of what children experience at this age is connected to their involvement in the early grades of school. Now the world becomes one of learning and testing new academic skills and by assessing one's abilities and accomplishments by making comparisons between self and others. Schools compare students and make these comparisons public through team sports, test scores, and other forms of recognition. Growth rates slow down and children are able to refine their motor skills at this point in life. And children

begin to learn about social relationships beyond the family through interaction with friends and fellow students.

Adolescence

Adolescence is a period of dramatic physical change marked by an overall physical growth spurt and sexual maturation, known as puberty. It is also a time of cognitive change as the adolescent begins to think of new possibilities and to consider abstract concepts such as love, fear, and freedom. Ironically, adolescents have a sense of invincibility that puts them at greater risk of dying from accidents or contracting sexually transmitted infections that can have lifelong consequences.

Early Adulthood

The twenties and thirties are often thought of as early adulthood. It is a time when we are at our physiological peak but are most at risk for involvement in violent crimes and substance abuse. It is a time of focusing on the future and putting a lot of energy into making choices that will help one earn the status of a full adult in the eyes of others. Love and work are primary concerns at this stage of life. [2]

   The late thirties through the mid-sixties is referred to as middle adulthood. This is a period in which aging, that began earlier, becomes more noticeable and a period at which many people are at their peak of productivity in love and work. It may be a period of gaining expertise in certain fields and being able to understand problems and find solutions with greater efficiency than before. It can also be a time of becoming more realistic about possibilities in life previously considered; of recognizing the difference between what is possible and what is likely. This is also the age group hardest

hit by the AIDS epidemic in Africa resulting in a substantial decrease in the number of workers in those economies (Weitz, 2007).

Late Adulthood

This period of the life span has increased in the last 100 years, particularly in industrialized countries. Late adulthood is sometimes subdivided into two or three categories such as the "young old" and "old old" or the "young old", "old old", and "oldest old". We will follow the former categorization and make the distinction between the "young old" who are people between 65 and 79 and the "old old" or those who are 80 and older. One of the primary differences between these groups is that the "young old" are very similar to midlife adults; still working, still relatively healthy, and still interested in being productive and active. The "old old" remain productive and active and the majority continues to live independently, but risks of the diseases of old age, such as arteriosclerosis, cancer, and cerebral vascular disease increases substantially for this age group. Issues of housing, healthcare, and extending active life expectancy are only a few of the topics of concern for this age group. A better way to appreciate the diversity of people in late adulthood is to go beyond chronological age and examine whether a person is experiencing optimal aging, normal aging (in which the changes are similar to most of those of the same age), or impaired aging (referring to someone who has more physical challenge and disease than others of the same age). [2]

3. Theories of Development

Theories of Development

What is a theory?

Students sometimes feel intimidated by theory; even the phrase, "Now we are going to look at some theories…" is met with blank stares and other indications that the audience is now lost. But theories are valuable tools for understanding human behavior; in fact they are proposed explanations for the "how" and "whys" of development. Have you ever wondered, "Why is my 3 year old so inquisitive?" or "Why are some fifth graders rejected by their classmates?" Theories can help explain these and other occurrences. Developmental theories offer explanations about how we develop, why we change over time, and the kinds of influences that impact development.

A theory guides and helps us interpret research findings as well. It provides the researcher with a blueprint or model to be used to help piece together various studies. Think of theories as guidelines much like directions that come with an appliance or other object that required assembly. The instructions can help one piece together smaller parts more easily than if trial and error are used.

Theories can be developed using induction in which a number of single cases are observed and after patterns or similarities are noted, the theorist develops ideas based on these examples. Established theories are then tested through research; however, not all theories are equally suited to scientific investigation. Some theories are difficult to test but are still useful in stimulating debate or providing concepts that have practical application. Keep in mind that theories are not facts; they are guidelines for investigation and

practice, and they gain credibility through research that fails to disprove them. [(3)]

Psychodynamic Theory

We begin with the often controversial figure, Sigmund Freud. 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.

Freud's assumption 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 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. [(4)]

Sigmund Freud: Background

Sigmund Freud (1856–1939) was a Viennese M. D. who was trained in neurology and asked to work with patients suffering from hysteria, a conditioned marked by uncontrollable emotional outbursts, fears and anxiety that had puzzled physicians for centuries. He was also asked to work with women who suffered from physical symptoms and forms of paralysis, which had no organic causes. During that

time, many people believed that certain individuals were genetically inferior and thus more susceptible to mental illness. Women were thought to be genetically inferior and thus prone to illnesses such as hysteria (which had previously been attributed to a detached womb which was traveling around in the body).

However, after World War I, many soldiers came home with problems similar to hysteria. This called into questions the idea of genetic inferiority as a cause of mental illness. Freud began working with patients suffering from hysteria and discovered that when they began to talk about some of their life experiences, particularly those that took place in early childhood, their symptoms disappeared. This led him to suggest the first purely psychological explanation for physical problems and mental illness. What he proposed was that unconscious motives and desires, fears and anxieties drive our actions. When upsetting memories or thoughts begin to find their way into our consciousness, we develop defenses to shield us from these painful realities.

These **defense mechanisms** include:

- Denying a reality
- Repressing or pushing away painful thoughts
- Rationalizing or finding a seemingly logical explanation for circumstances
- Projecting or attributing our feelings to someone else
- Outwardly opposing something we inwardly desire (called reaction formation)

Freud believed that many mental illnesses are a result of a person's inability to accept reality. **Freud emphasized the importance of early childhood experiences in shaping our personality and behavior.** In our natural state, we are biological beings. We are driven primarily by instincts. During childhood, however, we begin to become social beings as we learn how to manage our instincts and transform them into socially acceptable behaviors. The type of parenting the child receives has a very powerful impact on the

child's personality development. We will explore this idea further in our discussion of psychosexual development. [4]

Freud's Theories of Development

This section introduces Freud's theories of development. These include:

- Theory of the Mind
- Theory of the Self
- Psychosexual Stages [1]

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.

Theory of the Self

As adults, our personality or self consists of three main parts:

- Id
- Ego
- 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.

Here is an abbreviated listing of **defense mechanisms** suggested by Freud. If the ego is strong, the individual is realistic and accepting of reality and remains more logical, objective, and reasonable. Building ego strength is a major goal of psychoanalysis (Freudian psychotherapy). So for Freud, having a big ego is a good thing because it does not refer to being arrogant, it refers to being able to accept reality.

Defense mechanisms emerge to help a person distort reality so that the truth is less painful. Defense mechanisms include:

- **Repression** : To push the painful thoughts out of consciousness (in other words, think about something else).
- **Denial** : Not accepting the truth or lying to the self. Thoughts such as "it won't happen to me" or "you're not leaving" or "I don't have a problem with alcohol" are examples.
- **Regression** : Refers to "going back in time" when the world felt like a safer place, perhaps reverting to one's childhood. This is less common than the first two defense mechanisms.
- **Sublimation** : Involves transforming unacceptable urges into more socially acceptable behaviors. For example, a teenager

who experiences strong sexual urges uses exercise to redirect those urges into more socially acceptable behavior.

- **Displacement** : Involves taking out frustrations on to a safer target. A person who is angry with a supervisor may take out their frustration at others when driving home or at a spouse upon arrival.
- **Projection** : Defense mechanism in which a person attributes their unacceptable thoughts onto others. If someone is frightened, for example, he or she accuses someone else of being afraid.
- **Reaction** formation: Defense mechanism in which a person outwardly opposes something they inwardly desire, but that they find unacceptable. An example of this might be homophobia or a strong hatred and fear of homosexuality.

The **superego** is the part of the self that develops as we learn the rules, standards, and values of society. This part of the self takes into account the moral guidelines that are a part of our culture. It is a rule-governed part of the self that operates under a sense of guilt (guilt is a social emotion-it is a feeling that others think less of you or believe you to be wrong). If a person violates the superego, he or she feels guilty. The superego is useful but can be too strong; in this case, a person might feel overly anxious and guilty about circumstances over which they had no control. Such a person may experience high levels of stress and inhibition that keeps them from living well. The id is inborn, but the ego and superego develop during the course of our early interactions with others. These interactions occur against a backdrop of learning to resolve early biological and social challenges and play a key role in our personality development.

Psychosexual Stages

Freud's psychosexual stages of development are presented 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.

For about the first year of life, the infant is in the **oral stage** of psychosexual development. The infant meets needs primarily through oral gratification. A baby wishes to suck or chew on any object that comes close to the mouth. Babies explore the world through the mouth and find comfort and stimulation as well. Psychologically, the infant is all id. The infant seeks immediate gratification of needs such as comfort, warmth, food, and stimulation. If the caregiver meets oral needs consistently, the child will move away from this stage and progress further. However, if the caregiver is inconsistent or neglectful, the person may stay stuck in the oral stage. As an adult, the person might not feel good unless involved in some oral activity such as eating, drinking, smoking, nail biting, or compulsive talking. These actions bring comfort and security when the person feels insecure, afraid, or bored.

During the **anal stage**, which coincides with toddlerhood or mobility and potty training, the child is taught that some urges must be contained and some actions postponed. There are rules about certain functions and when and where they are to be carried out. The child is learning a sense of self-control. The ego is being developed. If the caregiver is extremely controlling about potty training (stands over the child waiting for the smallest indication that the child might need to go to the potty and immediately scoops the child up and places him on the potty chair, for example), the child may grow up fearing losing control. He may become fixated in this stage or "anal retentive," that is, fearful of letting go. Such a person might be extremely neat and clean, organized, reliable, and controlling of others. If the caregiver neglects to teach the child to

control urges, he may grow up to be "anal expulsive" or an adult who is messy, irresponsible, and disorganized.

The **phallic stage** occurs during the preschool years (ages 3–5) when the child has a new biological challenge to face. Freud believed that the child becomes sexually attracted to his or her opposite sexed parent.

- Boys experience the "Oedipal Complex" in which they become sexually attracted to their mothers but realize that Father is in the way. He is much more powerful. For a while, the boy fears that if he pursues his mother, father may castrate him (castration anxiety). So rather than risking losing his penis, he gives up his affections for his mother and instead learns to become more like his father, imitating his actions and mannerisms and thereby learns the role of males in his society. From this experience, the boy learns a sense of masculinity. He also learns what society thinks he should do and experiences guilt if he does not comply. In this way, the superego develops. If he does not resolve this successfully, he may become a "phallic male" or a man who constantly tries to prove his masculinity (about which he is insecure) by seducing women and beating up men.
- Girls experience the "Electra Complex" in which she develops an attraction for her father but realizes that she cannot compete with mother and so gives up that affection and learns to become more like her mother. This is not without some regret, however. Freud believed that the girl feels inferior because she does not have a penis (experiences "penis envy"). But she must resign herself to the fact that she is female and will just have to learn her inferior role in society as a female. However, if she does not resolve this conflict successfully, she may have a weak sense of femininity and grow up to be a "castrating female" who tries to compete with men in the workplace or in other areas of life.

During middle childhood (6–11), the child enters the latent stage focusing his or her attention outside the family and toward friendships. The biological drives are temporarily quieted (latent) and the child can direct attention to a larger world of friends. If the child is able to make friends, he or she will gain a sense of confidence. If not, the child may continue to be a loner or shy away from others, even as an adult.

The final stage of psychosexual development is referred to as the **genital stage**. From adolescence throughout adulthood a person is preoccupied with sex and reproduction. The adolescent experiences rising hormone levels and the sex drive and hunger drives become very strong. Ideally, the adolescent will rely on the ego to help think logically through these urges without taking actions that might be damaging. An adolescent might learn to redirect his or her sexual urges into safer activity, such as running. Quieting the id with the superego can lead to feeling overly self-conscious and guilty about these urges. Hopefully, it is the ego that is strengthened during this stage and the adolescent uses reason to manage urges.

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 to elaborate and modify subsequent theories of development. Many later theories, particularly behaviorism and humanism, were challenges to Freud's views. [4]

Psychosocial Theory

Now, let's turn to a less controversial psychodynamic theorist, the father of developmental psychology, Erik Erikson.

Erik Erikson (1902–1994) was a student of Freud's and expanded on his theory of psychosexual development 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 life span into eight stages. In each stage, we have a major psychosocial task to accomplish or crisis to overcome. Erikson believed that our personality continues to take shape throughout our life span as we face these challenges in living. We will discuss each of these stages in length as we explore each period of the life span, but here is a brief overview.

The Ego Rules

Psychosocial Stages

1. **Trust vs. mistrust** (0–1): infant must have basic needs met in a consistent way in order to feel that the world is a trustworthy place
2. **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
3. **Initiative vs. Guilt** (3–5): preschoolers like to initiate activities and emphasize doing things "all by myself"
4. **Industry vs. inferiority** (6–11): school aged children focus on accomplishments and begin making comparisons between themselves and their classmates
5. **Identity vs. role confusion** (adolescence): teenagers are trying to gain a sense of identity as they experiment with various roles, beliefs, and ideas
6. **Intimacy vs. Isolation** (young adulthood): in our 20s and 30s we are making some of our first long-term commitments in intimate relationships
7. **Generativity vs. stagnation** (middle adulthood): 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
8. **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. [5]

4. Behavioral and Social Learning Theories and Cognitive Theories

Behavioral Learning Theories: How Do We Act?

Learning theories focus on how we respond to events or stimuli rather than emphasizing what motivates our actions. These theories provide an explanation of how experience can change what we are capable of doing or feeling.

Classical Conditioning and Emotional Responses

Classical Conditioning theory helps us to understand how our responses to one situation become attached to new situations. For example, a smell might remind us of a time when we were a kid (elementary school cafeterias smell like milk and mildew!). If you went to a new cafeteria with the same smell, it might evoke feelings you had when you were in school. Or a song on the radio might remind you of a memorable evening you spent with your first true love. Or, if you hear your entire name (John Wilmington Brewer, for instance) called as you walk across the stage to receive your diploma and it makes you tense because it reminds you of how your father used to use your full name when he was upset with you, you've been classically conditioned!

Classical conditioning explains how we develop many of our emotional responses to people, events, or "gut level" reactions to situations. New situations may bring about an old response because

the two have become connected. Attachments form in this way. Addictions are affected by classical conditioning, as anyone who's tried to quit smoking can tell you. When you try to quit, everything that was associated with smoking makes you crave a cigarette.

Pavlov: Classical Conditioning

Ivan Pavlov (1880–1937) 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 actually began to salivate before the food arrived, as the researcher walked down the hall and toward the cage. "This," he thought, "is not natural!" One would expect a dog to automatically salivate when the food hit their palate, but BEFORE the food comes? Why would this happen? The dogs knew that the food was coming because they had learned to associate the footsteps with the food. The key word here is "learned." A learned response is called a "conditioned" response. Pavlov began to experiment with this "psychic" reflex. 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 a conditioned response. The response, salivation, is the same whether it is conditioned or unconditioned (unlearned or natural). What changed is the stimulus to which the dog salivates. One is natural (unconditioned) and one is learned (conditioned). Why is this important? Consider how classical conditioning is used on us. Psychologist, John B. Watson, is known for one of the most widespread applications of classical conditioning principles.

Watson and Behaviorism

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. He believed that parents could be taught to help shape their children's behavior and tried to demonstrate the power of classical conditioning with his famous experiment on 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 each of these things. Watson knew that one of our 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 became fearful of 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 outcome they desired, if they would only follow his advice.

Consider the experiment with little Albert, identify the unconditioned stimulus, the unconditioned response, and, after conditioning, the conditioned stimulus and the conditioned response. [6]

Behavioral Learning Theory

Operant Conditioning and Repeating Actions

Operant Conditioning is another learning theory that emphasizes a more conscious type of learning than that of classical conditioning. A person (or animal) does something (operates something) to see

what effect it might bring. Simply said, operant conditioning describes how we repeat behaviors because they pay off for us. It is based on a principle authored by a psychologist named Thorndike (1874–1949) called the law of effect. The law of effect suggests that we will repeat an action if it is followed by a good effect.

Skinner and Reinforcement

B.F. Skinner (1904–1990) expanded on Thorndike's principle and outlined the principles of operant conditioning. Skinner believed that we learn best when our actions are reinforced. For example, a child who cleans his room and is reinforced (rewarded) with a big hug and words of praise is more likely to clean it again than a child whose deed goes unnoticed. Skinner believed that almost anything could be reinforced. A reinforcer is anything following a behavior that makes it more likely to occur again. It can be something intrinsically rewarding (called intrinsic or primary reinforcers), such as food or praise, or it can be something that is rewarding because it can be exchanged for what one really wants (such as money to buy a cookie). Such reinforcers are referred to as secondary reinforcers or extrinsic reinforcers.

Positive and Negative Reinforcement

Sometimes, adding something to the situation is reinforcing as in the cases we described previously with cookies, praise, and money. Positive reinforcement involves adding something to the situation in order to encourage a behavior. Other times, taking something away from a situation can be reinforcing. For example, the loud, annoying buzzer on your alarm clock encourages you to get up so that you can turn it off and get rid of the noise. Children whine in order to get their parents to do something and often, parents give in just to stop

the whining. In these instances, negative reinforcement has been used.

Operant conditioning tends to work best if you focus on trying to encourage a behavior or move a person into the direction you want them to go rather than telling them what not to do. Reinforcers are used to encourage a behavior; punishers are used to stop behavior. A punisher is anything that follows an act and decreases the chance it will reoccur. But often a punished behavior doesn't really go away. It is just suppressed and may reoccur whenever the threat of punishment is removed. For example, a motorist may only slow down when the highway patrol is on the side of the freeway. Another problem with punishment is that when a person focuses on punishment, they may find it hard to see what the other does right or well. And punishment is stigmatizing; when punished, some start to see themselves as bad and give up trying to change.

Reinforcement can occur in a predictable way, such as after every desired action is performed, or intermittently, after the behavior is performed a number of times or the first time it is performed after a certain amount of time. The schedule of reinforcement has an impact on how long a behavior continues after reinforcement is discontinued. So a parent who has rewarded a child's actions each time may find that the child gives up very quickly if a reward is not immediately forthcoming. Think about the kinds of behaviors you may have learned through classical and operant conditioning. You may have learned many things in this way. But sometimes we learn very complex behaviors quickly and without direct reinforcement. Bandura explains how. [6]

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 modeling or copying the behavior of others. An employee on his or her first day of a new job 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. Newly married couples often rely on roles they may have learned from their parents and begin to act in ways they did not while dating and then wonder why their relationship has changed. 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).

Do Parents Socialize Children or Do Children Socialize Parents?

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. There is interplay between our personality and the way we interpret events and how they influence us. This concept is called reciprocal determinism. An example of this might be the interplay between **parents and children**. 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.

Other social influences: TV or not TV? Bandura (et al. 1963) began

a series of studies to look at the impact of television 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. Later children viewed a woman hitting a real clown and sure enough, when allowed in the room, they too began to hit the clown! Not only that, but they found new ways to behave aggressively. It's as if they learned an aggressive role. [6]

Strictly speaking, behavioral theories are not developmental theories. Both Freud and Erikson were interested in developmental stages and how we change across time. Behavioral theories believe that reinforcers and punishers function the same regardless of age or stage of development, which is why they are psychological theories, but not developmental theories. [1]

Cognitive Theories

What Do We Think?

Cognitive theories focus on how our mental processes or cognitions change over time. We will examine the ideas of two cognitive theorists: Jean Piaget and Lev Vygotsky.

Piaget: Changes in Thought with Maturation

Jean Piaget (1896–1980) is one of the most influential cognitive

theorists 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 intelligence differs from that of adults. He became interested in this area 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 and that maturation rather than training brings about that change. Children of differing ages interpret the world differently

Making Sense of the World

Piaget believed that we are continuously trying to maintain cognitive equilibrium or a balance or cohesiveness in what we see and what we know. Children have much more of a challenge in maintaining this balance because they are constantly being confronted with new situations, new words, new objects, etc. When faced with something new, a child may either fit it into an existing framework (**schema**) and match it with something known (**assimilation**) such as calling all animals with four legs "doggies" because he or she knows the word doggie, or expand the framework of knowledge to accommodate the new situation (**accommodation**) by learning a new word to more accurately name the animal. This is the underlying dynamic in our own cognition. Even as adults we continue to try and "make sense" of new situations by determining whether they fit into our old way of thinking or whether we need to modify our thoughts.

Stages of Cognitive Development

Piaget outlined **four major stages** of cognitive development. The stages are briefly mentioned here. We will discuss them in detail

throughout the course. For about the first two years of life, the child experiences the world primarily through their senses and motor skills. Piaget referred to this type of intelligence as **sensorimotor intelligence** . During the preschool years, the child begins to master the use of symbols or words and is able to think of the world symbolically but not yet logically. This stage is the **preoperational stage of** development. The **concrete operational stage** in middle childhood is marked by an ability to use logic in understanding the physical world. In the final stage, the **formal operational stage** the adolescent learns to think abstractly and to use logic in both concrete and abstract ways.

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. 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.

Vygotsky: Changes in Thought with Guidance

Lev Vygotsky (1896–1934) was a Russian psychologist who wrote in the early 1900s. Vygotsky's work was discovered in the United States in the 1960s and he became more widely known in the 1980s. Vygotsky differed with Piaget 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. Have you ever taught a child to perform a task? Maybe it was brushing her teeth or preparing food. Chances are you spoke to her and described what you were doing while you demonstrated the skill and let her work along with you all through the process. You gave her assistance when she seemed to need it, but once she knew what to do-you stood back and let her 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. [7]

5. Stages of Development

Stages of Development

As we have read, different theories propose different stages of development. This page displays the stages of development for Piaget, Erikson, and Freud. The following information provides a quick reference for these three theories.

Stages of Development

Piaget Stages of Cognitive Development

Sensorimotor (birth– 2 years)
   Preoperational (2–7 years)
   Concrete Operations (7–11 years)
   Formal Operations (12+ years)

Erikson Stages of Psychosocial Development

Trust Vs. Mistrust (birth–18 months)
   Autonomy Vs. Shame (18 months–3 years)
   Initiative Vs. Guilt (3–5 years)
   Industry Vs. Inferiority (5–12 years)
   Ego Identity Vs. Role Confusion (12–18 years)
   Intimacy Vs. Isolation (18–40 years)
   Generativity Vs. Stagnation (40–65 years)
   Ego Integrity Vs. Despair (65+ year)

Freud Stages of Psychosexual Development

Oral (birth–1 year)
   Anal (1–3 years)
   Phallic (3‐6 years)
   Latency (6–12 years)
   Genital (12+ years) [1]

6. Unit 2: The Field of Child Psychology - Foundations of Child and Adolescent Psychology

Research Methods

Research Designs

The following is a comparison of research methods or techniques used to describe, explain, or evaluate. Each of these designs has strengths and weaknesses and is sometimes used in combination with other designs within a single study.

Observational studies involve watching and recording the actions of participants. This may take place in the natural setting, such as observing children at play at a park, or behind a one-way glass while children are at play in a laboratory playroom. The researcher may follow a checklist and record the frequency and duration of events (perhaps how many conflicts occur among 2 year olds). The researcher may be a participant or a non-participant. What would be the strengths of being a participant? What would be the weaknesses? Consider the strengths and weaknesses of not participating. In general, observational studies have the strength of allowing the researcher to see how people behave rather than relying on self-report. What people do and what they say they do are often very different. A major weakness of observational studies is that they do not allow the researcher to explain causal relationships. Yet, observational studies are useful and widely used

when studying children. Children tend to change their behavior when they know they are being watched (known as the **Hawthorne effect**) and may not survey well.

Experiments are designed to test **hypotheses** (or specific statements about the relationship between **variables**) in a controlled setting in efforts to explain how certain factors or events produce outcomes. A variable is anything that changes in value. Concepts are **operationalized** or transformed into variables in research, which means that the researcher must specify exactly what is going to be measured in the study. For example, if we are interested in studying marital satisfaction, we have to specify what marital satisfaction really means or what we are going to use as an indicator of marital satisfaction. What is something measurable that would indicate some level of marital satisfaction? Would it be the amount of time couples spend together each day? Or eye contact during a discussion about money? Or maybe a subject's score on a marital satisfaction scale. Each of these is measurable but these may not be equally valid or accurate indicators of marital satisfaction. These are the kinds of considerations researchers must make when working through the design.

Three conditions must be met in order to establish cause and effect. Experimental designs are useful in meeting these conditions.

The **independent and dependent variables must be related** . In other words, when one is altered, the other changes in response. (The independent variable is something altered or introduced by the researcher. The dependent variable is the outcome or the factor affected by the introduction of the independent variable. For example, if we are looking at the impact of exercise on stress levels, the independent variable would be exercise; the dependent variable would be stress.)

The cause must come before the effect. Experiments involve measuring subjects on the dependent variable before exposing them to the independent variable (establishing a baseline). So we would measure the subjects' level of stress before introducing exercise and then again after the exercise to see if there has been a change in

stress levels. (Observational and survey research does not always allow us to look at the timing of these events which makes understanding causality problematic with these designs.)

The cause must be isolated . The researcher must ensure that no outside, perhaps unknown variables are actually causing the effect we see. The experimental design helps make this possible. In an experiment, we would make sure that our subjects' diets were held constant throughout the exercise program. Otherwise, diet might really be creating the change in stress level rather than exercise.

A basic experimental design involves beginning with a sample (or subset of a population) and randomly assigning subjects to one of two groups: **the experimental group** or the **control group** . The experimental group is the group that is going to be exposed to an independent variable or condition the researcher is introducing as a potential cause of an event. The control group is going to be used for comparison and is going to have the same experience as the experimental group but will not be exposed to the independent variable. After exposing the experimental group to the independent variable, the two groups are measured again to see if a change has occurred. If so, we are in a better position to suggest that the **independent variable** caused the change in the **dependent variable** . The basic experimental model looks like this:

Sample Randomly Assigned to 1 of 2 Groups

Experimental Group

Measure Dependent Variable
  Introduce Independent Variable
  Measure Dependent Variable

Control Group

Measure Dependent Variable

—

Measure Dependent Variable

The major advantage of the experimental design is that of helping to establish cause and effect relationships. A disadvantage of this design is the difficulty of translating much of what concerns us about human behavior into a laboratory setting. Hopefully, this brief description of experimental design helps you appreciate both the difficulty and the rigor of conducting an experiment. [8]

Research Designs

Case studies involve 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. Case studies are helpful when investigating unusual situations such as brain trauma or children reared in isolation. And they often used by clinicians who conduct case studies as part of their normal practice when gathering information about a client or patient coming in for treatment.

Case studies can be used to explore areas about which little is known and can provide rich detail about situations or conditions. However, the findings from case studies cannot be **generalized** or applied to larger populations; this is because cases are not randomly selected and no control group is used for comparison.

Surveys are familiar to most people because they are so widely used. Surveys enhance accessibility to subjects because they can be conducted in person, over the phone, through the mail, or online. A survey involves asking a standard set of questions to a group of subjects. In a highly structured survey, subjects are forced to choose

from a response set such as "strongly disagree, disagree, undecided, agree, strongly agree." Sociologists, marketing researchers, political scientists, therapists, and others use surveys to gather information on many independent and dependent variables in a relatively short period of time. Surveys typically yield surface information on a wide variety of factors, but may not allow for in-depth understanding of human behavior. Surveys can be designed in a number of ways. They may include **forced choice**questions and **semi- structured questions** in which the researcher allows the respondent to describe or give details about certain events.

One of the most difficult aspects of designing a good survey is wording questions in an unbiased way and asking the right questions so that respondents can give a clear response rather that choosing "undecided" each time. Knowing that 30% of respondents are undecided is of little use. So a lot of time and effort should be placed on the construction of survey items. 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. Analysis takes much longer when respondents give lengthy responses that must be analyzed in a different way. Surveys are useful in examining stated values, attitudes, opinions, and reporting on practices. However, they are based on **self- report** or what people say they do rather than on observation and this can limit accuracy.

Secondary/Content Analysis

Secondary/Content analysis involves analyzing information that has already been collected or examining documents or media to uncover attitudes, practices, or preferences. There are a number of data sets available to those who wish to conduct this type of research. For example, the U. S. Census Data is available and widely used to look at trends and changes taking place in the United States.

There are a number of other agencies, such as NORC (National Opinion Research Center) at the University of Chicago and The Henry J. Kaiser Family Foundation that collect data on family life, sexuality, and many other areas of interest in human development. The researcher conducting secondary analysis does not have to recruit subjects but does need to know the quality of the information collected in the original study.

Content Analysis

Content analysis involves looking at media such as old texts, pictures, commercials, lyrics or other materials to explore patterns or themes in culture. An example of content analysis is the classic history of childhood by Aries (1962) called "Centuries of Childhood"/ or the analysis of television commercials for sexual or violent content. Passages in text or programs that air can be randomly selected for analysis as well. Again, one advantage of analyzing work such as this is that the researcher does not have to go through the time and expense of finding respondents, but the researcher cannot know how accurately the media reflects the actions and sentiments of the population. [8]

Developmental Research Designs

Research is critical for any academic field. However, specific research methods must be adapted to the field of study. Because we are interested in how children develop across time, our research methods must allow us to assess change throughout development. We can do this through a **cross-sectional design**, **longitudinal design**, or **sequential design**. These designs are referred to as developmental designs. [1]

Cross-Sectional Design

A cross-sectional design samples people of different ages to assess how individuals of different age groups differ on some variable of interest. For example, a researcher interested in the relationship between age and self-esteem may select groups of four-year-olds, eight-year-olds, twelve-year-olds, and sixteen-year-olds and then measure their self-esteem. That way, the researcher can have a snap shot of how self-esteem may change across childhood and adolescence. However, there are shortcomings to this approach. One significant issue is the lack of ability to know if the groups were initially different in self-esteem, regardless of their age. For example, maybe the researcher just happened to sample a group of four-year-olds with really healthy self-esteem and a group of sixteen-year-olds with really unhealthy self-esteem. If this happened, a researcher may make the mistake of thinking that self-esteem declines between the ages of four and sixteen, without realizing that the two groups were just innately different. The next approach tries to address this concern.

Longitudinal Design

A longitudinal design is another approach for developmental research. With this design, you start with a group of individuals all of the same age. Then, you follow them across time to see how they change on some dimension of interest. Paralleling the example above, a researcher using this approach would start with a group of four-year-olds and assess their self-esteem. The researcher would then check back in with the individuals at the ages of eight, twelve, and sixteen to see how their self-esteem has changed. This approach allows us to see how self-esteem changes within an individual during development. Unfortunately, there are once again

shortcomings to this approach. One noteworthy issue with this approach is the danger of attrition. Attrition is a fancy word that researchers use for the loss of participants in a study. When you do a longitudinal study, you are asking for a significant time commitment from participants. For the example above, individuals would need to be available for follow-up assessments for 12 years. People lose interest, move, or, unfortunately, die. To try to address for the shortcomings of cross-sectional and longitudinal designs, researchers developed the next approach.

Sequential Approach

A sequential approach is a combination of both cross-sectional and longitudinal research. Like the longitudinal approach, you would be assessing individuals at four different times. However, at each time period, you add in a new group of people. This approach can be difficult to explain, so take a moment to look following information.

Time 1

Group 1 : 4 years

Time 2

Group 1 : 8 years
  Group 2 : 4 years

Time 3

Group 1 : 12 years
  Group 2 : 8 years
  Group 3 : 4 years

Time 4

Group 1 : 16 years
  Group 2 : 12 years
  Group 3 : 8 years
  Group 4 : 4 years

If you look at the columns for times two, three, and four, then you have a cross-sectional design. However, if you look at the rows, you have a longitudinal design. What is new, however, is the diagonal. Here we are able to see how the time period may be influencing self-esteem in a given age group. Maybe something changed in the educational system between time one and time four that really changed four-year-old children's self-esteem. You couldn't know that with just a cross-sectional or longitudinal design. [1]

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 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. [9]

Cross-Sectional

Advantages

- Examines changes between participants of different ages at the same point in time
- Provide information on age-related change

Disadvantages

- Cannot examine change over time
- Cannot examine cohort effects

Longitudinal

Advantages

- Examines changes within individuals over time
- Provides a developmental analysis

Disadvantages

- Expensive
- Takes a long time
- Participant attrition
- Possibility of practice effects
- Cannot examine cohort effects

Sequential

Advantages

- Examines changes within individuals over time
- Examine changes between participants of different ages at the same point in time
- Can be used to examine cohort effects

Disadvantages

- May be expensive
- Possibility of practice effects [9]

7. Challenges Associated with Conducting Developmental Research

Challenges Associated with Conducting Developmental Research

The previous sections describe research tools to assess development in infancy and early childhood, 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 infants and children comes with its own unique set of challenges. In the final section of this module, we review some of the main issues that are encountered when conducting research with the youngest of human participants. In particular, we focus our discussion on ethical concerns, recruitment issues, and participant attrition.

Ethical Concerns

As a student of psychological science, you may already know that Institutional Review Boards (IRBs) review and approve of all research projects that are conducted at universities, hospitals, and other institutions. 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 and that the potential benefits of the research outweigh the risks and 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.

When thinking about special accommodations in developmental research, consider the informed consent process. If you have ever participated in psychological 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 also 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). 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 science.

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. 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 do so 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. Alternatively, 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 day care 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.

Attrition

Participating in developmental research can sometimes be difficult for both children and their parents. This can contribute to a higher attrition rate than is typical in other types of research.

Another important consideration when conducting research with infants and young children is attrition. Although attrition is quite common in longitudinal research in particular, it is also problematic in developmental science, as studies with infants and young children tend to have higher attrition rates than studies with adults.

Child development is a fascinating field of study, but care must be taken to ensure that researchers use appropriate methods to examine infant and child 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. [9]

8. Statistical and Distributional Thinking and Cause and Effect Conclusions

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. Moreover, data abound everywhere in modern life. Conducting such a study well, and interpreting the results of such studies well for making informed decisions or setting policies, requires understanding basic ideas of statistics, the science of gaining insight from data. Rather than relying on anecdote and intuition, statistics allows us to systematically study phenomena of interest.

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?

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 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, such as smoking habits, on the comprehensive lifestyle questionnaires? 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 module, 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. [10]

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. The most fundamental principle of statistics is that data vary. The pattern of that variation is crucial to capture and to understand. Often, careful presentation of the data will address many of the research questions without requiring more sophisticated analyses. It may, however, point to additional questions that need to be examined in more detail.

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. [10]

This data could be examined using frequency tables; in other words, how often each value in a set of data occurs.

For example, we can look at the number (count) of patients by patients' reading level. Data show 2 cancer patients read at a 7th grade reading level and 17 patients read above a 12th grade reading level.

For an example, we can also look at the number (count) of pamphlets by the pamphlet readability level. Data show 1 pamphlet has an 11th grade readability level and 1 pamphlet has a 16th grade readability level. [1]

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.
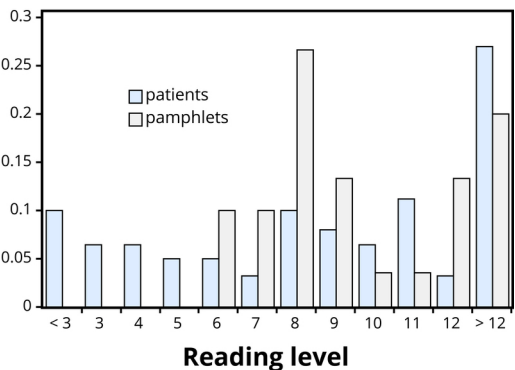- Analyzing the pattern of variation, called the distribution of the variable, often reveals insights.

Figure 2-1: Comparison of patient reading levels and pamphlet readability levels by B. Chance and A. Rossman (NOBA Project) is licensed under CC-BY-NC-SA 4.0 .

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 2-1.

Figure 2-1 makes clear that the two distributions are not well aligned. The most glaring discrepancy is that many patients (17/63 or 27%) 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 using frequencies.

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 degree Farenheit 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?

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.

Correlation does not equal causation: When babies get their first teeth their saliva production increases but this does not mean that increased saliva causes them to get their teeth.

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 that 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. 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 tells you how often a random process would give a result at least as extreme as what was found in the actual study, assuming there was nothing other than random chance at play. So, 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. We often compare the p-value to some cut-off value (called the level of significance, typically around 0.05). If 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.

Generalizability

Generalizability is an important research consideration : The results of studies with widely representative samples are more likely to generalize to the population.

One limitation to the previous study 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 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.

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.

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. [10]

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 or extrinsic 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 – 2, where higher scores indicate more creativity.
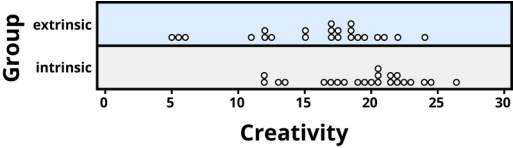
Figure 2-2: Creativity scores separated by type of motivation by B. Chance and A. Rossman (NOBA Project) is licensed under CC-BY-NC-SA 4.0 .

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 1-16 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 1-17 shows the results from 1,000 such hypothetical random assignments for these scores.
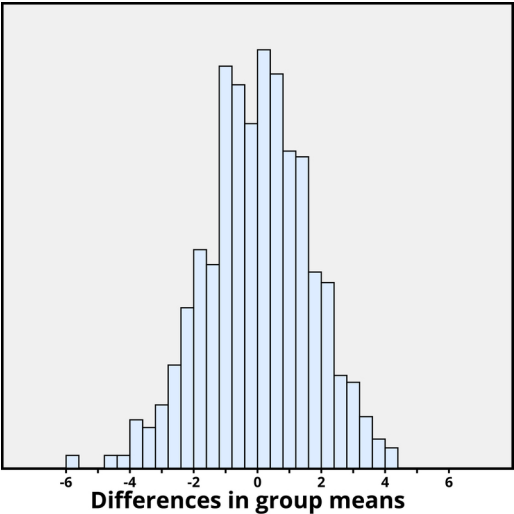
Figure 2-3: Differences in group means under random assignment alone by B. Chance and A. Rossman (NOBA Project) is licensed under CC-BY-NC-SA 4.0 .

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 2, 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 the individuals in this study, but we would still want to know more about how these individuals were selected to participate. [10]

Conclusion

Researchers employ the scientific method that involves a great deal of statistical thinking:

1. Generate a hypothesis
2. Design a study to test that hypothesis
3. Conduct the study
4. Analyze the data
5. Report the results

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 earlier in this module? 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. [10]

9. Assignment and Capstone Project Introduction: The Field of Child Psychology

Module 1 Journal Assignment

The journal assignment aligns with Learning Outcome 1.

The purpose of this assignment is to apply course material to your own development. This will allow you to better appreciate how the information that we learn in this course relates to everyday life.

Journal Instructions

This week we learned about the foundational topics in child psychology. Core concepts, theories, and research methods were explored. Which theory do you feel best explains your development during childhood and why? Be certain to explain the main tenets of the theory and to provide specific examples as to why you chose this theory. If you choose more than one theory, then explain the main tenets of each theory, as well as the relevant examples. The journal should show evidence of self-reflection, be free of writing mechanic issues, and provide references in APA format. This assignment is worth 75 points. Please refer to the rubric for specific requirements for this journal. [1]

Module 1 Wiki Assignment

This Wiki assignment aligns with Learning Outcome 1.

Purpose

Collaboration is important for learning. In this course, we will use our class Wiki as a way to collaborate. Our Wiki page will allow us to meet asynchronously. We can share all types of files. It will allow us to learn from each other and the resources that we find.

Wiki Collaboration Instructions

The Wiki page has been set up to be open 24/7. This means that you can work whenever you want to. Your mission is to find a course related resource for module 1 and share it. You should briefly describe the resource and explain how it is related to module six and the milestones achieved in the social development domain. The same resource cannot be shared more than once so checkout what is already posted. The research can be a website, blog, YouTube video, TedTalk, research article, news article, SlideShare, PowerPoint, or Pinterest board, you get the idea. In addition to posting a resource, you must also say what 2 other resources posted by your peers you found most educational and why by commenting on their posts. All work should be free of writing mechanic issues. This assignment is worth 75 points. Please refer to the rubric for specific requirements for this Wiki. [1]

Human Development Capstone Project | Introduction

This is an introduction to the Capstone Project that will be due at the end of the course — in Module 6. As you read each module learning unit(s), write journal reflections, and participate in Wiki assignments keep in mind the capstone project requirements. Consider your area of interests for the project and begin your research early.

Purpose

For this capstone project, you need to choose a specific culture and/or time period to research and relate it to human development. The goal of this project is to apply course material to contextual considerations in human development.

Examples

Previous projects have examined the Salem Witch Trials, ancient Egypt, Rome, Greece, Colonial America, the U.S. during the 1920's, the Trail of Tears, and modern Japan.

Instructions

Once you choose the culture and/or time period you want to study, you will need to research your subject, and then either write a paper or create a PowerPoint presentation including your voice addressing the below points. Remember, the goal of this project

is to apply course material to contextual considerations in human development.

Requirements

- Set the stage by providing background information on the culture and/or historical time period you have selected to study
- Discuss life and human development in this culture and/or time period
- You will need to apply material from **every module** to your human development in your culture and/or time period
- Provide at least three interesting facts and/or one case study about the culture and/or historical time period
- Use **at least** five academic sources
- Use APA format for your in-text citations and references

There is neither a minimum nor maximum word count. The length should be determined by addressing all of the requirements. Remember, this is your chance to shine and take pride in your work, and not just do the minimum.

This capstone project is worth 100 points. It is due in Module 6. [1]

MODULE 2: THE DAWN OF A PERSON

10. About This Module: The Dawn of a Person

Introduction

Now that you have oriented yourself to the various approaches to studying child development, we will turn our focus to other important foundational issues. You probably have not had a course in biology in a while, much less given a lot of thought to intricate interplay between biology-genetics-environment. In everyday conversation, people often talk about "the why" — "WHY did Sam become an addict?" "WHY did Alex get such a big, charismatic personality?" "Why do people in my family all seem to have bad/good/easy/difficult tempers?" In other words, we all wonder about what causes us to be the way we are – were we 'born this way' or "monkey see, monkey do"? This is the age-old question of Nature versus Nurture. Part of what you will learn here is that it is not one or the other — it is **both** . They both interplay, interact, and influence one another at EVERY stage of development, from the moment we are conceived to the moment we perish.

So, in this module, you will be learning a lot about how we humans are shaped by the very specific — and not yet fully understood – interplay between our genes and our environment.

You will be learning this for a simple reason: most people have large misconceptions about the relative roles of nature and nurture. If this is true for you, you are not alone. One thing that is generally true of students in this course is that many are uncomfortable with the biological side of behavior. However, what I've found to be true is that many, if not most, students lack basic understanding of genetics and are uncomfortable with it. This one goal is arm you with basic concepts and terminology.

One danger in not knowing the correct terms and functions of genetics and heredity is that misinformation and myths can persist. Many people who do not have proper understanding of this terminology also tend to believe harmful myths about fertilization/sex, genetic diseases, prenatal disorders, babies' care and more. For example, did you know that the foods our mothers eat when we are in their wombs affect the likelihood that we will be obese....when we are ADULTS? Yes, that is true (take a look at the NOVA video under Reading and Resources for a fascinating look at this). Did you know that while the human being is born with a vastly complex brain, lack of language stimulation and enrichment stunts intellectual development permanently? There are numerous fascinating facts that this chapter will give you.

So, when you think of genetics and behavior from now on, make it your goal to understand it *fully* — knowing the complex interplay between our nature (genetics) and our nurture (experiences), using appropriate terminology. Finally, I want you to also know that we are just beginning to understand the big picture of genetics, so what you learn today will be a fraction of what will be known to scientists in a few decades. It is an exciting field!

If you are reading this, it means you are alive, which means you were once just a single cell, and your zygote survived the unlikely odds of pregnancy and, eventually, you were born. Yes, you exist because you have DNA from one of your father's sperm and one of your mother's eggs, but do you know how unlikely it is for you to exist? If you can begin to understand conception, pregnancy, and birth, you may just take a different view of yourself and your life.

For example, did you know: only **25%** of **fertilized** eggs **implant** into a woman's uterine wall. Of those that do implant, about 30–40% *naturally miscarry* (also known as spontaneous abortion) due to genetic abnormalities – and the woman **may not even have known** she was pregnant. So, of **all** fertilized eggs (zygotes), approximately **50%** of those conceptions**result in birth** of a living baby. Those are pretty long odds, when you really think about it! This is but one set of

fascinating facts about conception, prenatal development, and birth.

In addition to learning the mechanics of conception and pregnancy, you will also learn some fascinating facts about childbirth, breastfeeding, and postpartum care. There are simple steps that expectant parents should take that will make birth more manageable and postpartum recovery smoother. Psychologists know that mothers who take care of themselves during pregnancy and make plans *before* baby arrives, are also likely to be more intentional and thoughtful parents *after* baby is born. Intentional, thoughtful parenting tends to result in better outcomes for the kids, so, in a sense, good parenting starts with learning this very basic pregnancy information.

Finally, what about those who have obstacles to getting pregnant? Have you ever wondered what the difference is between terms like "IVF" or "artificial insemination" — two fertility treatment methods? Whether miscarriage, medical issues, or other things have gotten in the way of getting pregnant, many people wonder what infertility actually means. Knowing the causes and fixes for infertility are relevant to everyone, as these issues are much more common than you might think. [1]

Learning Outcomes

1. Students will be able to summarize prenatal development and the major hazards/complications that may be encountered during prenatal development and birth. [1]

Objectives

Upon completion of this module, the student will be able to:

- Describe what genes are and how they influence human development
- Explain the major developments of each trimester of pregnancy.
- Describe the three stages of labor.
- Identify major postpartum issues and care. [1]

Readings

Online Learning Unit

11. Unit 3: Genetics - Foundations of Child and Adolescent Psychology

Genetics

DNA (deoxyribonucleic acid) is a biomolecule that holds the blueprint for how living organisms are built. DNA is made out of two long, twisted strands that contain complementary genetic information (like a picture and its negative). A gene is a segment of DNA that is passed down from parents to children and confers a trait to the offspring. Genes are organized and packaged in units called "chromosomes." Humans have 23 pairs of chromosomes. One set of chromosomes comes from a person's mother and the other set of chromosomes comes from the father. [11]

A chromosome is an organized package of DNA found in the nucleus of the cell. Different organisms have different numbers of chromosomes. Humans have 23 pairs of chromosomes — 22 pairs of numbered chromosomes, called autosomes, and one pair of sex chromosomes, X and Y. As you probably already know, males have XY sex chromosomes and females have XX sex chromosomes. Each parent contributes one chromosome to each pair so offsprings get half of their chromosomes from their mother and half from their father. [12]
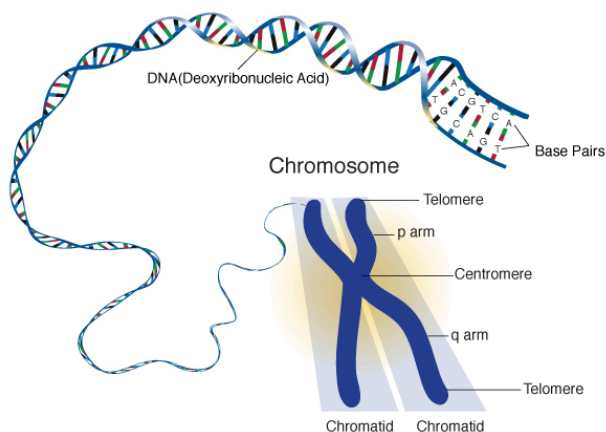
Figure 3-1: Basics of Chromosomes by National Human Genome Research Institute's Talking Glossary resides in the Public Domain

Four Types of Bases

ACGT is an acronym for the four types of bases found in a DNA molecule:

- Adenine (A)
- Cytosine (C)
- Guanine (G)
- Thymine (T)

A DNA molecule consists of two strands wound around each other, with each strand held together by bonds between the bases. Adenine pairs with thymine, and cytosine pairs with guanine. The sequence of bases in a portion of a DNA molecule, called a gene, carries the instructions needed to assemble a protein. [13]

Figure 3-2: Genetic Code by National Human Genome Research Institute's Talking Glossary resides in thePublic Domain

Double Helix

Double helix is the description of the structure of a DNA molecule. A DNA molecule consists of two strands that wind around each other like a twisted ladder. Each strand has a backbone made of alternating groups of sugar (deoxyribose) and phosphate groups. Attached to each sugar is one of four bases: adenine (A), cytosine (C), guanine (G), or thymine (T). The two strands are held together by bonds between the bases, adenine forming a base pair with thymine, and cytosine forming a base pair with guanine. [14]

DNA replication is the process by which a molecule of DNA is duplicated. When a cell divides, it must first duplicate its genome so that each daughter cell winds up with a complete set of chromosomes. [15]

Inheritance Patterns

Heredity refers to the genetic transmission of traits from parents to offspring. [16] A phenotype is an individual's observable traits, such as height, eye color, and blood type. The genetic contribution to the phenotype is called the genotype. Some traits are largely determined by the genotype, while other traits are largely determined by environmental factors. [17]Heredity helps explain why children tend to resemble their parents, as well as how a genetic disease runs in a family. Some genetic conditions are caused by mutations in a single gene. These conditions are usually inherited in one of several straightforward patterns, including autosomal dominant, autosomal recessive, X-linked dominant, X-linked recessive, codominant, and mitochondrial inheritance patterns. Complex disorders and multifactorial disorders are caused by a combination of genetic and environmental factors. These disorders may cluster in families, but do not have a clear-cut pattern of inheritance. [16] We will explain these patterns, but first, let's explore why it is important to understand inheritance patterns. [1]
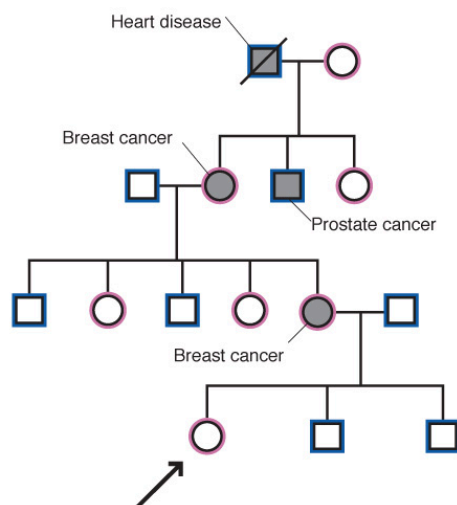
Figure 3-3: Family Health History by National Human Genome Research Institute's Talking Glossary resides in the Public Domain

Understanding inheritance patterns can allow you to use a family history to determine your risk for various diseases. [1]A family history is a record of medical information about an individual and their biological family. Human genetic data is becoming more prevalent and easy to obtain. Increasingly, these data are being used to identify individuals who are at increased risk for developing genetic disorders, such as heart disease, breast cancer, and prostate cancer. [17]

Mendelian Inheritance

Mendelian inheritance refers to patterns of inheritance that are characteristic of organisms that reproduce sexually. The Austrian monk Gregor Mendel performed thousands of crosses with garden

peas at his monastery during the middle of the 19th century. Mendel explained his results by describing two laws of inheritance that introduced the idea of dominant and recessive genes. This is the types of genetics that you learned about in your high school biology class. [18]

Figure 3-4: Mendelian Inheritance by National Human Genome Research Institute's Talking Glossary resides in the Public Domain

Mitochondrial DNA Inheritance

While the majority of your genes reside within the nucleus of nearly every cell of your body (red blood cells are the only exception), a small number of genes can be found outside the nucleus in the

mitochondria (Centre for Genetics Education, 2015). If you can recall from your high school or college biology course, the mitochondria are powerhouses for cells. Through the production of ATP (adenosine triphosphate), the mitochondria produce energy for cells so that organs may function properly. While your genes in the nucleus load onto the chromosomes, the genes Mitochondrial DNA is the small circular chromosome found inside mitochondria. The mitochondria are organelles found in cells that are the sites of energy production. The mitochondria, and thus mitochondrial DNA, are passed from mother to offspring. This is referred to as mitochondrial DNA inheritance. [19]
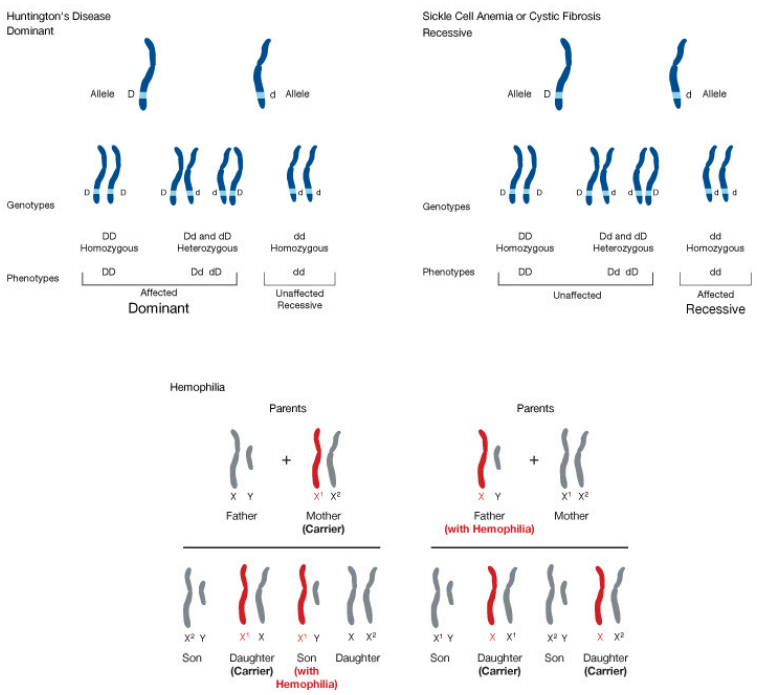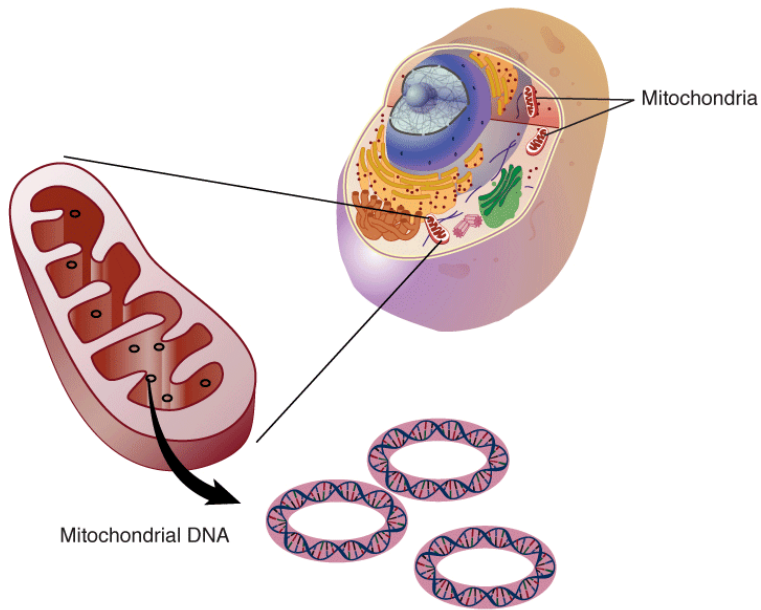

Figure 3-5: Mitochondrial Inheritance by National Human Genome Research Institute's Talking Glossary resides in the Public Domain

While the typical nucleus has around 20,000 protein encoding

genes, the mitochondria have only 37. Here is the amazing part: It pretty much only has the DNA from your mother! Whereas in Mendelian inheritance, half of the DNA comes from your mother (egg) and half from your father (sperm); the father's mitochondrial DNA is not passed on. Recent studies with worms suggest that there is some sort of self-destruct mechanism in the father's sperm to destroy the paternal mitochondrial DNA during conception. Research shows that when this mechanism is delayed or inhibited, there is a higher mortality rate. This hints that if the paternal mitochondrial DNA is passed on to the offspring, it is often incompatible with life (Centre for Genetics Education, 2015; Sato & Sato, 2013; Yin, 2016).

Multifactorial Inheritance

The third and final type of inheritance pattern that we will discuss is referred to as multifactorial inheritance. This pattern occurs when the interaction of multiple genes and/or environmental factors cause an outcome, such as a disease. Breast cancer, ovarian cancer, colon cancer, hypothyroidism, and Alzheimer's disease are all thought to follow this pattern (GeneEd, 2017; Genetic Science Learning Center, 2014). [1]

12. Gene-Environment Interactions and Genetic Conditions

Gene-Environment Interactions

Three views of gene-environment interactions that we will study are:

- Range of reaction
- Genetic environmental correlation
- Field of epigenetics [1]

Range of Reaction

Genes do not exist in a vacuum. Although we are all biological organisms, we also exist in an environment that is incredibly important in determining not only when and how our genes express themselves, but also in what combination. Each of us represents a unique interaction between our genetic makeup and our environment; range of reaction is one way to describe this interaction. Range of reaction asserts that our genes set the boundaries within which we can operate, and our environment interacts with the genes to determine where in that range we will fall. For example, if an individual's genetic makeup predisposes her to high levels of intellectual potential and she is reared in a rich, stimulating environment, then she will be more likely to achieve her full potential than if she were raised under conditions of significant

deprivation. According to the concept of range of reaction, genes set definite limits on potential, and environment determines how much of that potential is achieved.

Genetic Environmental Correlation

Another perspective on the interaction between genes and the environment is the concept of genetic environmental correlation. Stated simply, our genes influence our environment, and our environment influences the expression of our genes. Not only do our genes and environment interact, as in range of reaction, but they also influence one another bidirectionally. For example, the child of an NBA player would probably be exposed to basketball from an early age. Such exposure might allow the child to realize his or her full genetic, athletic potential. Thus, the parents' genes, which the child shares, influence the child's environment, and that environment, in turn, is well suited to support the child's genetic potential. Nature and nurture work together like complex pieces of a human puzzle. The interaction of our environment and genes makes us the individuals we are.

Field of Epigenetics

In another approach to gene-environment interactions, the field of epigenetics looks beyond the genotype itself and studies how the same genotype can be expressed in different ways. In other words, researchers study how the same genotype can lead to very different phenotypes. As mentioned earlier, gene expression is often influenced by environmental context in ways that are not entirely obvious. For instance, identical twins share the same genetic information (identical twins develop from a single fertilized egg

that split, so the genetic material is exactly the same in each; in contrast, fraternal twins develop from two different eggs fertilized by different sperm, so the genetic material varies as with non-twin siblings). But even with identical genes, there remains an incredible amount of variability in how gene expression can unfold over the course of each twin's life. Sometimes, one twin will develop a disease and the other will not. In one example, Tiffany, an identical twin, died from cancer at age 7, but her twin, now 19 years old, has never had cancer. Although these individuals share an identical genotype, their phenotypes differ as a result of how that genetic information is expressed over time. The epigenetic perspective is very different from range of reaction, because here the genotype is not fixed and limited. [20]

Genetic Linkages to Behavioral Characteristics

Genes affect more than our physical characteristics. Indeed, scientists have found genetic linkages to a number of behavioral characteristics, ranging from basic personality traits to sexual orientation to spirituality. Genes are also associated with temperament and a number of psychological disorders, such as depression and schizophrenia. So while it is true that genes provide the biological blueprints for our cells, tissues, organs, and body, they also have significant impact on our experiences and our behaviors.

Let's look at the following findings regarding schizophrenia in light of our three views of gene-environment interactions. Which view do you think best explains this evidence? In a study of people who were given up for adoption, adoptees whose biological mothers had schizophrenia **and** who had been raised in a disturbed family environment were much more likely to develop schizophrenia or another psychotic disorder than were any of the other groups in the study.

- Of adoptees whose biological mothers had schizophrenia (high genetic risk) and who were raised in disturbed family environments, 36.8% were likely to develop schizophrenia.
- Of adoptees whose biological mothers had schizophrenia (high genetic risk) and who were raised in healthy family environments, 5.8% were likely to develop schizophrenia.
- Of adoptees with a low genetic risk (whose mothers did not have schizophrenia) and who were raised in disturbed family environments, 5.3% were likely to develop schizophrenia.
- Of adoptees with a low genetic risk (whose mothers did not have schizophrenia) and who were raised in healthy family environments, 4.8% were likely to develop schizophrenia (Tienari et al., 2004).

The study shows that adoptees with high genetic risk were especially likely to develop schizophrenia only if they were raised in disturbed home environments. This research lends credibility to the notion that both genetic vulnerability and environmental stress are necessary for schizophrenia to develop, and that genes alone do not tell the full tale. [20]

Dig Deeper: Parental Investment and Programming of Stress Responses in Offspring

The most comprehensive study to date of variations in parental investment and epigenetic inheritance in mammals is that of the maternally transmitted responses to stress in rats. In rat pups, maternal nurturing (licking and grooming) during the first week of life is associated with long-term programming of individual differences in stress responsiveness, emotionality, cognitive

performance, and reproductive behavior (Caldji et al., 1998; Francis, Diorio, Liu, & Meaney, 1999; Liu et al., 1997; Myers, Brunelli, Shair, Squire, & Hofer, 1989; Stern, 1997). In adulthood, the offspring of mothers that exhibit increased levels of pup licking and grooming over the first week of life show increased expression of the glucocorticoid receptor in the hippocampus (a brain structure associated with stress responsivity as well as learning and memory) and a lower hormonal response to stress compared with adult animals reared by low licking and grooming mothers (Francis et al., 1999; Liu et al., 1997). Moreover, rat pups that received low levels of maternal licking and grooming during the first week of life showed decreased histone acetylation and increased DNA methylation of a neuron-specific promoter of the glucocorticoid receptor gene (Weaver et al., 2004). The expression of this gene is then reduced, the number of glucocorticoid receptors in the brain is decreased, and the animals show a higher hormonal response to stress throughout their life.

The effects of maternal care on stress hormone responses and behavior in the offspring can be eliminated in adulthood by pharmacological treatment (HDAC inhibitor trichostatin A, TSA) or dietary amino acid supplementation (methyl donor L-methionine), treatments that influence histone acetylation, DNA methylation, and expression of the glucocorticoid receptor gene (Weaver et al., 2004;Weaver et al., 2005). This series of experiments shows that histone acetylation and DNA methylation of the glucocorticoid receptor gene promoter is a necessary link in the process leading to the long-term physiological and behavioral sequelae of poor maternal care. This points to a possible molecular target for treatments that may reverse or ameliorate the traces of childhood maltreatment.

Several studies have attempted to determine to what extent the findings from model animals are transferable to humans. Examination of post-mortem brain tissue from healthy human subjects found that the human equivalent of the glucocorticoid receptor gene promoter (NR3C1 exon 1F promoter) is also unique to

the individual (Turner, Pelascini, Macedo, & Muller, 2008). A similar study examining newborns showed that methylation of the glucocorticoid receptor gene promoter maybe an early epigenetic marker of maternal mood and risk of increased hormonal responses to stress in infants 3 months of age (Oberlander et al., 2008).

Although further studies are required to examine the functional consequence of this DNA methylation, these findings are consistent with our studies in the neonate and adult offspring of low licking and grooming mothers that show increased DNA methylation of the promoter of the glucocorticoid receptor gene, decreased glucocorticoid receptor gene expression, and increased hormonal responses to stress (Weaver et al., 2004).

Examination of brain tissue from suicide victims found that the human glucocorticoid receptor gene promoter is also more methylated in the brains of individuals who had experienced maltreatment during childhood (McGowan et al., 2009). Examination of blood samples from adult patients with bipolar disorder, who also retrospectively reported on their experiences of childhood abuse and neglect, found that the degree of DNA methylation of the human glucocorticoid receptor gene promoter was strongly positively related to the reported experience of childhood maltreatment decades earlier. [21]

Genetic Conditions

Genetic conditions are caused in whole or in part by a change in a person's DNA sequence. Genetic conditions can be caused by a mutation in one or multiple genes, by a combination of gene mutations and environmental factors, or by damage to chromosomes. Some genetic conditions are inherited, while others occur spontaneously. [22]

Some Genetic Disorders

Cystic Fibrosis

Cystic Fibrosis is a hereditary disease characterized by faulty digestion, breathing problems, respiratory infections from mucus buildup, and the loss of salt in sweat. The disease is caused by mutations in a single gene and is inherited as an autosomal recessive trait, meaning that an affected individual inherits two mutated copies of the gene. In the past, cystic fibrosis was almost always fatal in childhood. Today, however, patients commonly live to be 30 years or older. [23]

Down syndrome

Down syndrome is a genetic disease resulting from a chromosomal abnormality. An individual with Down syndrome inherits all or part of an extra copy of Chromosome 21. Symptoms associated with the syndrome include intellectual disability, distinctive facial characteristics, and increased risk for heart defects and digestive problems, which can range from mild to severe. The risk of having a child with Down syndrome rises with the mother's age at the time of conception.[24]

Hemophilia

Hemophilia is an inherited disease, most commonly affecting males, that is characterized by a deficiency in blood clotting. The responsible gene is located on the X chromosome, and since males inherit only one copy of the X chromosome, if that chromosome carries the mutated gene then they will have the disease. Females

have a second, usually normal, copy of the gene on their other X chromosome, so they are capable of passing on the disease without experiencing its symptoms. [25]
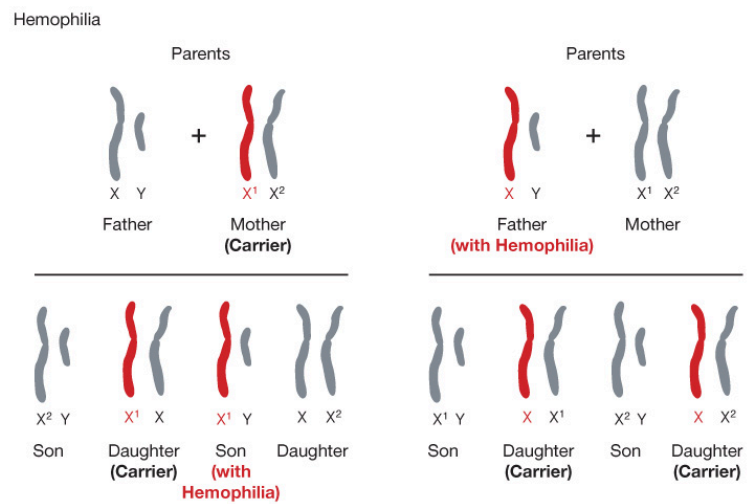
Figure 3-6: Hemophilia by National Human Genome Research Institute's Talking Glossary resides in the Public Domain

Tay-Sachs Disease

Tay-Sachs disease is a genetic disorder that causes progressive damage to nerve cells in the brain and spinal cord. It is caused by the absence of an enzyme called hexosaminidase-A. Without this enzyme, a fatty substance, called GM2 ganglioside, builds-up in the body, damaging cells. [26] To inherit this disease, a child must inherit

a recessive gene from both parents. At birth, the newborn appears perfectly normal. Throughout the first year, the child will begin to miss developmental milestones, such as sitting up or walking. Eventually, as the GM2 ganglioside builds up in the brain and rest of the body, the child will begin to regress. A child that could once walk will become lame. A child that could once laugh becomes mute. A child that could once see becomes blind. Most children die between the ages of two to four (Cleveland Clinic Foundation, 2014). There are variations of this disease that allow for later onsets and longer lifespans; however, the type discussed here is the most common. [1]

13. Unit 4: Conception, Prenatal Development, and Birth - Foundations of Child and Adolescent Psychology

Conception

Gametes

There are two types of sex cells or gametes involved in reproduction: the male gametes or sperm and female gametes or ova. The male gametes are produced in the testes in a process called spermatogenesis, which begin at about 12 years of age. The female gametes or ova, which are stored in the ovaries, are present at birth but are immature. Each ovary contains about 250,000 (Rome 1998) but only about 400 of these will become mature eggs (Mackon and Fauser 2000). Beginning at puberty, one ovum ripens and is released about every 28 days, a process called oogenesis.

After the ovum or egg ripens and is released from the ovary, it is drawn into the fallopian tube and in 3 to 4 days, reaches the uterus. It is typically fertilized in the fallopian tube and continues its journey to the uterus. At ejaculation, millions of sperm are released into the vagina, but only a few reach the egg and typically, only one fertilizes the egg. Once a single sperm has entered the wall of the egg, the wall becomes hard and prevents other sperm from entering. After the sperm has entered the egg, the tail of the sperm breaks off and the head of the sperm, containing the genetic information from the father, unites with the nucleus of the egg. As

a result, a new cell is formed. This cell, containing the combined genetic information from both parents, is referred to as a zygote.

Chromosomes contain genetic information from each parent. While other normal human cells have 46 chromosomes (or 23 pair), gametes contain 23 chromosomes. In a process called meiosis, segments of the chromosomes from each parent form pairs and genetic segments are exchanged as determined by chance. Because of the unpredictability of this exchange the likelihood of having offspring that are genetically identical (and not twins) is one in trillions (Gould and Keeton, 1997).

Determining the Sex of the Child

Twenty-two of those chromosomes from each parent are similar in length to a corresponding chromosome from the other parent. However, the remaining chromosome looks like an X or a Y. Half of the male's sperm contain a Y chromosome and half contain an X. All of the ova contain two X chromosomes. If the child receives the combination of XY, the child will be genetically male. If it receives the XX combination, the child will be genetically female.

Many potential parents have a clear preference for having a boy or a girl and would like to determine the sex of the child.

Through the years, a number of tips have been offered for the potential parents to maximize their chances for having either a son or daughter as they prefer. For example, it has been suggested that sperm, which carry a Y chromosome are more fragile than those carrying an X. So, if a couple desires a male child, they can take measures to maximize the chance that the Y sperm reaches the egg. This involves having intercourse 48 hours after ovulation, which helps the Y sperm have a shorter journey to reach the egg, douching to create a more alkaline environment in the vagina, and having the female reach orgasm first so that sperm are not pushed out of the vagina during orgasm. [27]

Prenatal Development

Now we turn our attention to prenatal development, which is divided into three periods: the germinal period, the embryonic period, and the fetal period. Here is an overview of some of the changes that take place during each period. [28]

The germinal period (about 14 days in length) lasts from conception to implantation of the zygote (fertilized egg) in the lining of the uterus. During this time, the organism begins cell division and growth. After the fourth doubling, differentiation of the cells begins to occur as well. It's estimated that about 60 percent of natural conceptions fail to implant in the uterus. The rate is higher for in vitro conceptions. [28]
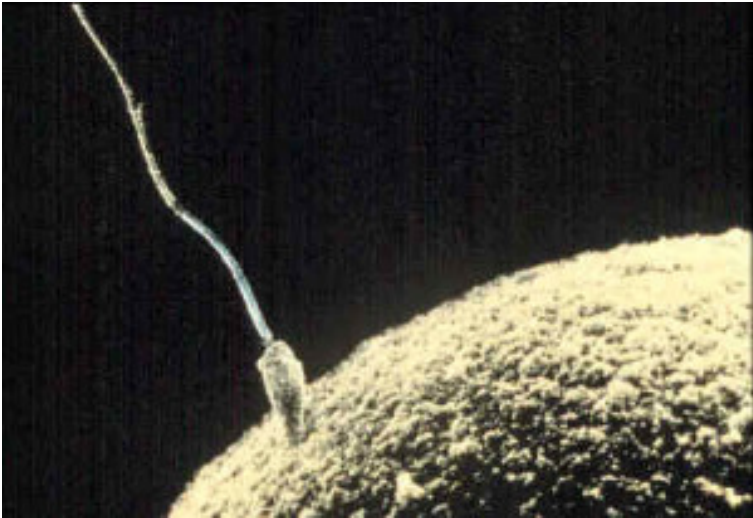
Sperm and Ovum at Conception by Lumen, Lifespan Development, is licensed under CC-BY 4.0 .

The Embryonic Period

This period begins once the organism is implanted in the uterine wall. It lasts from the third through the eighth week after conception. During this period, cells continue to differentiate and at 22 days after conception the neural tube forms which will become the brain and spinal column. By day 24 – 28, the heart is beating. Growth during prenatal development occurs in two major directions:

- From head to tail (cephalocaudal development)
- From the midline outward (proximodistal development)

This means that those structures nearest the head develop before those nearest the feet and those structures nearest the torso develop before those away from the center of the body (such as hands and fingers). In the early stages of the embryonic period, gills and a tail are apparent. But by the sixth week, the organism looks human. About 20 percent of embryos fail during the embryonic period, usually due to gross chromosomal abnormalities. It is during this stage that the major structures of the body are taking form making the embryonic period the time when the organism is most vulnerable to the greatest amount of damage if exposed to harmful substances. Potential mothers are not often aware of the risks they introduce to the developing child during this time. The period ends with organogenesis, which means that every single organ is present in the baby. The organs only need time to grow and mature, with some organs not maturing until early adulthood! The embryo is approximately 1 inch in length and weighs about 4 grams at the end of this period. The embryo can move and respond to touch at this time.

The Fetal Period

From the ninth week until birth, the organism is referred to as a fetus. During this stage, the major structures are continuing to develop. By the 12th week, the external genitalia can be identified during an ultrasound. In the following weeks, the fetus will develop hair, nails, and teeth. The fetus will move away from painful or strange stimuli in the womb. At the end of the 12th week, the fetus is about 3 inches long and weighs about 28 grams.

During the 4-6th months, the eyes become more sensitive to light and hearing develops. Respiratory system continues to develop. Cycles of sleep and wakefulness are present. The first chance of survival outside the womb, known as the age of viability, is reached at about 22 and 24 weeks (Moore & Persaud, 1998). Many practitioners hesitate to resuscitation before 24 weeks. The majority of the neurons in the brain have developed by 24.

Between the 7th and 9th months the fetus is primarily preparing for birth. It is exercising its muscles, its lungs begin to expand and contract. It is developing fat layers under the skin. The fetus gains about 5 pounds and 7 inches during this last trimester of pregnancy, which includes a layer of fat gained during the 8th month. This layer of fat serves as insulation and helps the baby regulate body temperature after birth. [28]

Dangers during Prenatal Development

Teratology

Good prenatal care is essential. The developing child is most at risk for some of the most severe problems during the first three months of development. Unfortunately, this is a time at which most mothers

are unaware that they are pregnant. Today, we know many of the factors that can jeopardize the health of the developing child. The study of factors that contribute to birth defects is called teratology. Teratogens are factors that can contribute to birth defects, which include some maternal diseases, pollutants, drugs and alcohol.

There are several considerations in determining the type and amount of damage that might result from exposure to a particular teratogen (Berger, 2004). **Factors influencing prenatal risks:**

The Timing of the Exposure

Structures in the body are vulnerable to the most severe damage when they are forming. If a substance is introduced during a particular structure's critical period (time of development), the damage to that structure may be greater. For example, the ears and arms reach their critical periods at about 6 weeks after conception. If a mother exposes the embryo to certain substances during this period, the arms and ears may be malformed.

The amount of exposure:

Some substances are not harmful unless the amounts reach a certain level. The critical level depends in part on the size and metabolism of the mother.

Genetics:

Genetic make-up also plays a role on the impact a particular teratogen might have on the child. This is suggested by fraternal twin studies who are exposed to the same prenatal environment, yet do not experience the same teratogenic effects. The genetic make-

up of the mother can also have an effect; some mothers may be more resistant to teratogenic effects than others.

Being male or female:

Males are more likely to experience damage due to teratogens than are females. It is believed that the Y chromosome, which contains fewer genes than the X, may have an impact. [29]
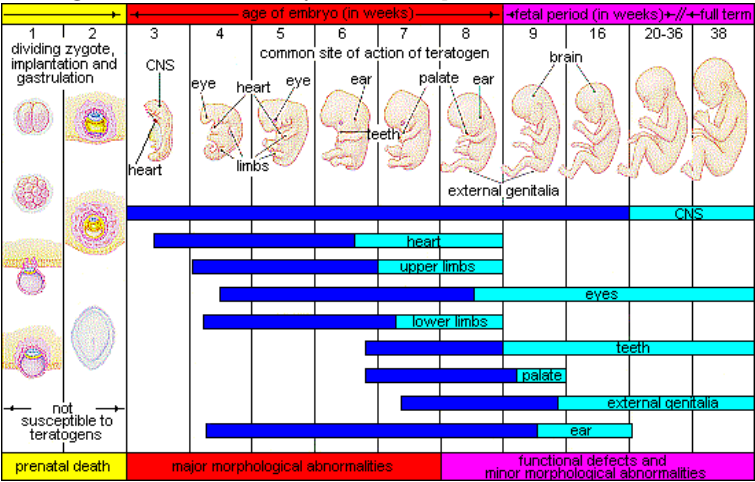
Figure 4-1: Critical Periods of Prenatal Development by Lumen, Lifespan Development, is licensed under CC-BY 4.0 .

A Look at Some Teratogens

One of the most commonly used teratogens is alcohol and because half of all pregnancies in the United States are unplanned, it is recommended that women of child-bearing age take great caution against drinking alcohol when not using birth control or when pregnant (Surgeon General's Advisory on Alcohol Use During Pregnancy, 2005).

Alcohol

Alcohol consumption, particularly during the second month of prenatal development but at any point during pregnancy, may lead to neurocognitive and behavioral difficulties that can last a lifetime. Binge drinking (5 or more on a single occasion) or 7 or more drinks during a single week place a child at risk. In extreme cases, alcohol consumption can lead to fetal death but more frequently it can result in **fetal alcohol spectrum disorders (FASD)** (this terminology is now used when looking at the effects of exposure and replaces the term fetal alcohol syndrome. It is preferred because it recognizes that symptoms occur on a spectrum and that all individuals do not have the same characteristics.)

Children with FASD share certain physical features such as flattened noses, small eyes, and small heads, intellectual developmental delay, and behavioral problems. Those with FASD are more at risk for lifelong problems such as criminal behavior, psychiatric problems, and unemployment (CDC, 2006). The terms alcohol-related neurological disorder (ARND) and alcohol-related birth defects (ARBD) have replaced the term Fetal Alcohol Effects to refer to those with less extreme symptoms of FASD. ARBD include kidney, bone and heart problems.
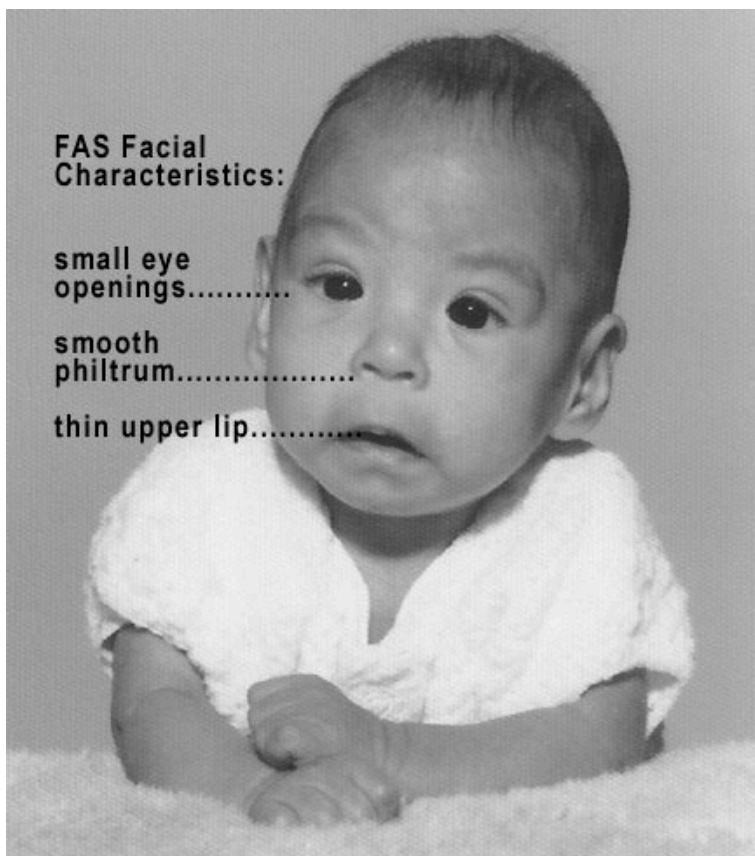
Male Baby with the FAS-syndrome is licensed under CC BY-SA 3.0 .

Tobacco

Tobacco is the second most widely used teratogen and the number of adolescent females who smoke is increasing. In fact, among adolescents, females are just as likely to smoke as are males. Tobacco use during pregnancy has been associated with low birth weight, placenta previa, preterm delivery, fetal growth restriction

and sudden infant death syndrome (Center for Disease Control, 2004).

Illicit drugs as well as prescribed medications can have serious teratogenic effects. It is difficult to completely determine the effects of a particular illicit drug on a developing child because most mothers, who use, use more than one substance. However, several problems seem clear. The use of cocaine is connected with low birth weight, stillbirths and spontaneous abortion. Heavy marijuana use is associated with brain damage and mothers addicted to heroin often pass that addiction to their child. And many medications do not include adequate information on risks posed if taken during pregnancy (Center for Disease Control, 2004).

Pollutants

Some environmental pollutants of major concern include lead poisoning, which is connected with low birth weight and slowed neurological development. Children who live in older housing in which lead based paints have been used have been known to eat peeling paint chips thus being exposed to lead. The chemicals in certain herbicides are also potentially damaging. Radiation is another environmental hazard. If a mother is exposed to radiation, particularly during the first 3 months of pregnancy, the child may suffer some congenital deformities. There is also an increased risk of miscarriage and stillbirth. Mercury leads to physical deformities and mental retardation (Dietrich, 1999).

Human Immunodeficiency Virus (HIV)

One of the most potentially devastating teratogens is HIV. In the United States, the fastest growing group of people with Acquired

Immunodeficiency Syndrome (AIDS) is women; globally half of all people infected with HIV are women (UNAIDS, 2005). It is estimated that between 630,000 to 820,000 children were newly infected with HIV worldwide in 2005. Most of this infection is from mother-to-child through the placenta or birth canal (Newell, 2005). There are some measures that can be taken to lower the chance the child will contract the disease (such as the use of antiretroviral drugs from 14 weeks after conception until birth, avoiding breastfeeding, and delivering the child by c-section). Many women do not know they are HIV positive during pregnancy. Still others cannot afford the costly drugs used for treating AIDS. The transmission rate of HIV from mother to child has been reduced in the United States to between 100-200 infants annually.

Maternal Diseases

German measles (or rubella) have been associated with a number of maladies. If the mother contracts the disease during the first three months of pregnancy, damage can occur in the eyes, ears, heart or brain of the unborn child. Deafness is almost certain if the mother has German measles before the 11th week of prenatal development and can also cause brain damage. Gonorrhea, syphilis, and Chlamydia are sexually transmitted infections that can be passed to the fetus by an infected mother; mothers should be tested as early as possible to minimize the risk of spreading these infections (Center for Disease Control, 2006). [29]

Common Health Conditions during Pregnancy

Common health conditions during pregnancy include:

- Anemia
- Urinary Tract Infections
- Preeclampsia and Eclampsia
- Mental health conditions
- Hypertension (High Blood Pressure)
- Gestational Diabetes Mellitus (GDM)
- Obesity and Weight gain
- Hyperemesis Gravidarum

Each of these conditions will be discussed next.

Anemia

Anemia is having lower than the normal number of healthy red blood cells. Treating the underlying cause of the anemia will help restore the number of healthy red blood cells. Women with pregnancy related anemia may feel tired and weak. This can be helped by taking iron and folic acid supplements.

Urinary Tract Infections (UTI)

A UTI is a bacterial infection in the urinary tract. UTI symptoms include:

- Pain or burning when you use the bathroom
- Fever, tiredness, or shakiness.
- An urge to use the bathroom often.
- Pressure in your lower belly.
- Urine that smells bad or looks cloudy or reddish.
- Nausea or back pain.

Treatment with antibiotics to kill the infection will make it better, often in one or two days. [30]

Preeclampsia and Eclampsia

Preeclampsia (pree-i-KLAMP-see-uh) and eclampsia (ih-KLAMP-see-uh) are pregnancy-related high blood pressure disorders. In preeclampsia, the mother's high blood pressure reduces the blood supply to the fetus, which may get less oxygen and fewer nutrients. [31]

Preeclampsia is similar to gestational hypertension, because it also describes high blood pressure at or after 20 weeks of pregnancy in a woman whose blood pressure was normal before pregnancy. But preeclampsia can also include blood pressure at or greater than 140/90 mmHg, increased swelling, and protein in the urine. The condition can be serious and is a leading cause of preterm birth (before 37 weeks of pregnancy). If it is severe enough to affect brain function, causing seizures or coma, it is called eclampsia. [32]

Mental Health Conditions

Some women experience depression during or after pregnancy. Symptoms of depression are:

- A low or sad mood
- Loss of interest in fun activities
- Changes in appetite, sleep, and energy
- Problems thinking, concentrating, and making decisions
- worthlessness
- Thoughts that life is not worth living

When many of these symptoms occur together and last for more than a week or two at a time, this is probably depression. Depression that persists during pregnancy can make it hard for a woman to care for herself and her unborn baby. Having depression before pregnancy also is a risk factor for postpartum depression. Getting treatment is important for both mother and baby. [30]

Hypertension

Chronic poorly-controlled high blood pressure before and during pregnancy puts a pregnant woman and her baby at risk for problems. It is associated with an increased risk for maternal complications such as preeclampsia placental abruption (when the placenta separates from the wall of the uterus), and gestational diabetes. These women also face a higher risk for poor birth outcomes such as preterm delivery, having an infant small for his/her gestational age, and infant death. Getting treatment for high blood pressure is important before, during, and after pregnancy.

Gestational Diabetes Mellitus (GDM)

GDM is diagnosed during pregnancy and can lead to pregnancy complications. GDM is when the body cannot effectively process sugars and starches (carbohydrates), leading to high sugar levels in the blood stream. Most women with GDM can control their blood sugar levels by a following a healthy meal plan from their health care provider and getting regular physical activity. Some women also need insulin to keep blood sugar levels under control. Doing so is important because poorly controlled diabetes increases the risk of:

- Preeclampsia
- Early delivery
- Cesarean birth
- baby
- Having a baby born with low blood sugar, breathing problems, and jaundice

Although GDM usually resolves after pregnancy, women who had GDM have a higher risk of developing diabetes in the future.

Obesity and Weight Gain

Recent studies suggest that the heavier a woman is before she becomes pregnant, the greater her risk of pregnancy complications, including preeclampsia, GDM, stillbirth and cesarean delivery. Also, CDC Research has shown that obesity during pregnancy is associated with increased use of health care and physician services, and longer hospital stays for delivery. Overweight and obese women who lose weight before pregnancy are likely to have healthier pregnancies.

Hyperemesis Gravidarum

Many women have some nausea or vomiting, or "morning sickness," particularly during the first 3 months of pregnancy. The cause of nausea and vomiting during pregnancy is believed to be rapidly rising blood levels of a hormone called HCG (human chorionic gonadotropin), which is released by the placenta. However, hyperemesis gravidarum occurs when there is severe, persistent nausea and vomiting during pregnancy—more extreme than

"morning sickness." This can lead to weight loss and dehydration and may require intensive treatment. [30]

14. Approaches to Birth, Birth, and Complications

Approaches to Birth

Prepared childbirth refers to being not only physically in good condition to help provide a healthy environment for the baby to develop, but also helping a couple to prepare to accept their new roles as parents and to get information and training that will assist them for delivery and life with the baby as much as possible. The more a couple can learn about childbirth and the newborn, the better prepared they will be for the adjustment they must make to a new life. (Nothing can prepare a couple for this completely). Once a couple finds that they are to have a child, they begin to conjure up images of what they think the experience will involve. Once the child is born, they must reconcile those images with reality (Galinsky, 1987). Knowing more of what to expect does help them in forming more realistic images thus making the adjustment easier. Let's explore some of the methods of prepared childbirth.

The Dick-Read Method of Natural Childbirth

Grantley Dick-Read was an English obstetrician and pioneer of prepared childbirth in the 1930s. In his book Childbirth Without Fear, he suggests that the fear of childbirth increases tension and makes the process of childbearing more painful. He believed that if mothers were educated, the fear and tension would be reduced and the need for medication could frequently be eliminated. The Dick-Read method emphasized the use of relaxation and proper breathing with contractions, as well as family support and

education. This method influenced the most commonly taught method in the U.S. today, the Lamaze Method.

The Lamaze Method

This method originated in Russia and was brought to the United States in the 1950s by Fernand Lamaze. The emphasis of this method is on teaching the woman to be in control during the process of delivery. It includes learning muscle relaxation, breathing though contractions, having a focal point (usually a picture to look at) during contractions and having a support person who goes through the training process with the mother and serves as a coach during delivery.

Birthing Centers/Birthing Rooms

The trend now is to have birthing rooms that are hospital rooms that look more like a suite in a hotel equipped with a bed that can be converted for delivery. These rooms are also equipped with a bed and monitoring systems for the newborn. However, many hospitals have only one or two of these rooms and availability can be a problem.

The LeBoyer Method

Other birthing options include the use of birthing chairs, which make use of gravity in assisting the woman giving birth– the Leboyer Method of "Gentle Birthing". This method involves giving birth in a quiet, dimly lit room and allowing the newborn to lie on the mother's stomach with the umbilical cord intact for several minutes while being given a warm bath.

Home Birth and Nurse-Midwives

Historically in the United States, most babies were born under the care of lay midwives. In the 1920s, middle class women were increasingly using doctors to assist with childbirth, but rural women were still being assisted by lay midwives. The nursing profession began educating nurse-midwives to assist these women. Nurse-midwives continued to assist most rural women with delivery up until the 1970s and 1980s when their practice was believed to pose a threat to the medical profession (Weitz, 2007). Since that time, nurse-midwives have found it more difficult to sustain practices with the high costs of malpractice insurance. (Many physicians have changed areas of specialization in response to these costs as well.) Women who are at low risk for birth complications can successfully deliver under the care of nurse-midwives, but only 1 percent of births occur at home. Because 1 out of every 20 births involves a complication, most medical professionals recommend that delivery take place in a hospital. However, some couples choose to have their baby at home. About 1 percent of births occur outside of a hospital in the United States. Two-thirds of these are homebirths with midwives assisting with more than half of these. Midwives are trained and licensed to assist in delivery and are far less expensive than the cost of a hospital delivery. One-third of out-of-hospital births occur in freestanding clinics, birthing centers, or in physicians' offices or other locations. In the United States, women who have had previous children, who are over 25, and who are white are more likely to have out-of-hospital births (MacDorman, et. als., 2010). [33]

Birth

The birth process is exciting, but sometimes a bit intimidating. Knowing what to expect can help expectant mothers to relax and

enjoy the moment they have been waiting for the past nine months–meeting their newborn!

Just as prenatal development is broken down into three periods or stages, so to is the birth process (American Pregnancy Association, 2017). The **first stage** is the longest (up to 18 hours) and is broken down into three phases:

1. Early labor
2. Active Labor
3. Transition

The benchmark for the transition from one stage to the next is based upon how dilated the cervix is. Early labor ends when the cervix has dilated to three centimeters. The contractions are not terribly intense during this early phase. Active labor is more active. The contractions become more regular and intense. This phase ends when the cervix has dilated to seven centimeters.

The transition phase is the one typically shown in movies, where the woman is screaming. The contractions are incredibly intense and there is little break between each one. This phase ends when the cervix has dilated to ten centimeters. At this point, the woman is ready to begin pushing, which takes us to the next stage.

The **second stage** begins with full dilation and ends with the birth of the newborn (American Pregnancy Association, 2017). It can take from twenty minutes to a couple of hours. Usually, the first pregnancy takes the longest, because with subsequent pregnancies, the woman has experience pushing. Typically, the woman feels the urge to push. When the head finally appears, it is referred to as **crowning** .

Pregnancy Association, 2017). Contractions help the placenta to separate from the uterus. The doctor or nurse practitioner will typically apply pressure to the uterus while tugging on the umbilical cord. Once out, the birthing process is complete.[33]

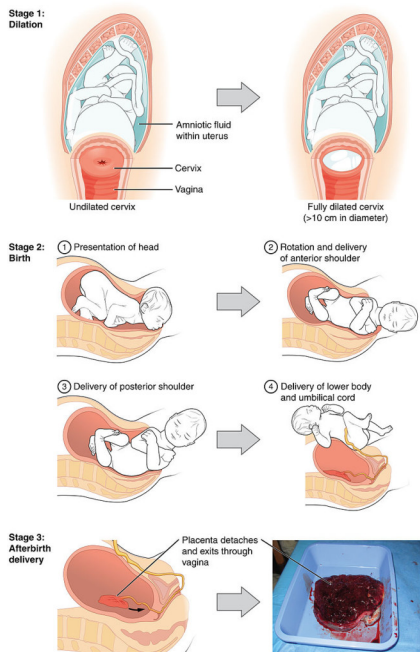Figure 4-2: The Stages of Childbirth by Lumen, Lifespan Development, is licensed under CC-BY 4.0 .

Complications During Birth

Numerous things can go wrong during the labor and delivery. Trauma can be due to oxygen deprivation, preterm birth (prematurity), low-birth weight, and post-term birth. Unexpected c-sections can also occur. In this section we will learn about some of these complications.

Oxygen Deprivation

Oxygen deprivation, or anoxia, prior to or during the birth process can be a result of premature separation of the placenta or the cord being wrapped around the babies' neck causing inadequate oxygen supply. Deprivation of oxygen can result in a child having cerebral palsy — a term used for a variety of problems resulting from brain damage before, during, or just after birth. Newborns sometimes fail to start breathing immediately after being born. Risk of brain damage can result from delayed breathing of more than 3 minutes at birth. The effect of oxygen deprivation generally causes physical disabilities that tend to be permanent, as well as blindness, hearing impairments, intellectual and motor delays throughout early life. If oxygen deprivation were severe, problems will persist beyond early childhood.

Low Birth Weight

Birth weight is a good predictor of infant survival and healthy development. For a full term pregnancy (40 weeks), a healthy average weight is considered to be between 5 pounds $11^{1}/_{2}$ ounces and 8 pounds $5^{3}/_{4}$ ounces. Infants may have low birth weight because of prematurity and/or intrauterine growth retardation due to genetic makeup or an unfavorable uterine environment. Low birth weight infants face health complications: immature lungs and breathing, mild/severe cognition problems, cerebral palsy, delayed speech, and sensory impairments (visual and auditory). Infants weighing less than $2^{1}/_{2}$ pounds at birth experience more extreme long-term difficulties that are sometimes not overcome. Infants weighing less than $2^{1}/_{2}$ pounds need intensive neonatal care for survival and typically require lengthy stays in the hospital. [34]

Preterm Births

Preterm birth is when a baby is born too early, before 37 weeks of pregnancy, regardless of birth weight. In 2016, preterm birth affected about 1 of every 10 infants born in the United States. Preterm birth rates decreased from 2007 to 2014, and CDC research shows that this decline is due, in part, to declines in the number of births to teens and young mothers. However, the preterm birth rate rose for the second straight year in 2016. Additionally, racial and ethnic differences in preterm birth rates remain. For example, in 2016, the rate of preterm birth among African-American women (14%) was about 50 percent higher than the rate of preterm birth among white women (9%).

  A developing baby goes through important growth throughout pregnancy— including in the final months and weeks. For example, the brain, lungs, and liver need the final weeks of pregnancy to fully develop. While the age of viability (when an infant can survive outside the womb) is 24 weeks, babies born too early (especially before 32 weeks) have higher rates of death and disability. In 2015, preterm birth and low birth weight accounted for about 17% of infant deaths. Babies who survive may have:

- Breathing problems
- Feeding difficulties
- Cerebral palsy
- Developmental delay
- Vision problems
- Hearing problems

Preterm infants commonly have respiratory problems due to underdeveloped lungs. Brain hemorrhaging is also a complication of preterm birth along with immature immune systems. Deficits in motor coordination, inattentiveness, overactiveness, and frequent illnesses are some of the difficulties that continue on into the primary years (McCormick, Gortmaker, & Sobol, 1990). Preterm

babies are sometimes irritable, unresponsive, and suck poorly. Because of these problems, some parents become less sensitive and responsive in caring for them. Preterm babies are less often cuddled, touched, and talked to, especially those who are very ill at birth. According to Patteson and Barnard (1990), in an effort to receive a response from a baby who is passive, mothers will be overly intrusive via interfering pokes and verbal commands.

Post-Term Birth

Post-term babies are infants that are born after 42 weeks. Approximately 5% of women deliver after 42 weeks. One concern of post-term babies is due to the placenta no longer functioning properly or the sharp drop in the amount of amniotic fluid. With the decrease of amniotic fluid, the infant's movements in the uterus will squeeze the umbilical cord. In addition, the fetus has grown larger during the extra weeks in the uterus, which may cause the baby to experience difficulty moving through the birth canal. Increased risk for oxygen deprivation and head injuries occur in post-term births. [35]

Cesarean Birth

Cesarean delivery, also called c-section, is surgery to deliver a baby. The baby is taken out through the mother's abdomen. Most cesarean births result in healthy babies and mothers. But c-section is major surgery and carries risks. Healing also takes longer than with vaginal birth.

Most healthy pregnant women with no risk factors for problems during labor or delivery have their babies vaginally. Still, the cesarean birth rate in the United States has risen greatly in recent

decades. Today, nearly 1 in 3 women have babies by c-section in this country. The rate was 1 in 5 in 1995. Public heath experts think that many c-sections are unnecessary. [36]

Reasons for C-sections

Doctors may recommend a c-section if she or he thinks it is safer for mother or baby than vaginal birth. Some c-sections are planned. But most c-sections are done when unexpected problems happen during delivery. Even so, there are risks of delivering by c-section. Limited studies show that the benefits of having a c-section may outweigh the risks when:

- The mother is carrying more than one baby (twins, triplets, etc.)
- The mother has health problems, including HIV infection, herpes infection, and heart disease
- The mother has dangerously high blood pressure
- The mother has problems with the shape of her pelvis
- There are problems with the placenta
- There are problems with the umbilical cord
- There are problems with the position of the baby, such as breech
- The baby shows signs of distress, such as a slowed heart rate
- The mother has had a previous c-section (36)

15. The Newborn, APGAR Score, and Postpartum Period

The Newborn

Neonate Adjustment

From a fetal perspective, the process of birth is a crisis. In the womb, the fetus was snuggled in a soft, warm, dark, and quiet world. The placenta provided nutrition and oxygen continuously. Suddenly, the contractions of labor and vaginal childbirth forcibly squeeze the fetus through the birth canal, limiting oxygenated blood flow during contractions and shifting the skull bones to accommodate the small space. After birth, the newborn's system must make drastic adjustments to a world that is colder, brighter, and louder, and where he or she will experience hunger and thirst. The neonatal period (neo- = "new"; -natal = "birth") spans the first to the thirtieth day of life outside of the uterus.

Respiratory Adjustments

Although the fetus "practices" breathing by inhaling amniotic fluid in utero, there is no air in the uterus and thus no true opportunity to breathe. (There is also no need to breathe because the placenta supplies the fetus with all the oxygenated blood it needs.) During gestation, the partially collapsed lungs are filled with amniotic fluid and exhibit very little metabolic activity. Several factors stimulate newborns to take their first breath at birth. First, labor contractions

temporarily constrict umbilical blood vessels, reducing oxygenated blood flow to the fetus and elevating carbon dioxide levels in the blood. High carbon dioxide levels cause acidosis and stimulate the respiratory center in the brain, triggering the newborn to take a breath.

The first breath typically is taken within 10 seconds of birth, after mucus is aspirated from the infant's mouth and nose. The first breaths inflate the lungs to nearly full capacity and dramatically decrease lung pressure and resistance to blood flow, causing a major circulatory reconfiguration. Pulmonary alveoli open, and alveolar capillaries fill with blood. Amniotic fluid in the lungs drains or is absorbed, and the lungs immediately take over the task of the placenta, exchanging carbon dioxide for oxygen by the process of respiration.

Circulatory Adjustments

The process of clamping and cutting the umbilical cord collapses the umbilical blood vessels. In the absence of medical assistance, this occlusion would occur naturally within 20 minutes of birth because the Wharton's jelly within the umbilical cord would swell in response to the lower temperature outside of the mother's body, and the blood vessels would constrict. Natural occlusion has occurred when the umbilical cord is no longer pulsating. For the most part, the collapsed vessels atrophy and become fibrotic remnants, existing in the mature circulatory system as ligaments of the abdominal wall and liver. The ductus venosus degenerates to become the ligamentum venosum beneath the liver. Only the proximal sections of the two umbilical arteries remain functional, taking on the role of supplying blood to the upper part of the bladder.
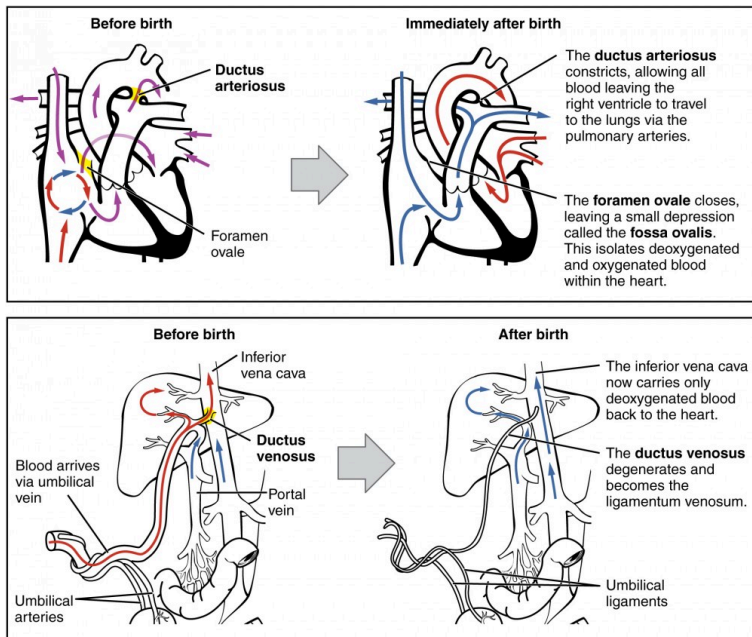
Figure 4-3: Newborn's Circulatory System by Lumen, Anatomy and Physiology II, is licensed under CC-BY 4.0 .

A newborn's circulatory system reconfigures immediately after birth. The three fetal shunts have been closed permanently, facilitating blood flow to the liver and lungs.

The newborn's first breath is vital to initiate the transition from the fetal to the neonatal circulatory pattern. Inflation of the lungs decreases blood pressure throughout the pulmonary system, as well as in the right atrium and ventricle. In response to this pressure change, the flow of blood temporarily reverses direction through the foramen ovale, moving from the left to the right atrium, and blocking the shunt with two flaps of tissue. Within 1 year, the tissue flaps usually fuse over the shunt, turning the foramen ovale into the fossa ovalis. The ductus arteriosus constricts as a result of increased oxygen concentration, and becomes the ligamentum arteriosum. Closing of the ductus arteriosus ensures that all blood pumped to

the pulmonary circuit will be oxygenated by the newly functional neonatal lungs

Thermoregulatory Adjustments

The fetus floats in warm amniotic fluid that is maintained at a temperature of approximately 98.6°F with very little fluctuation. Birth exposes newborns to a cooler environment in which they have to regulate their own body temperature. Newborns have a higher ratio of surface area to volume than adults. This means that their body has less volume throughout which to produce heat, and more surface area from which to lose heat. As a result, newborns produce heat more slowly and lose it more quickly. Newborns also have immature musculature that limits their ability to generate heat by shivering. Moreover, their nervous systems are underdeveloped, so they cannot quickly constrict superficial blood vessels in response to cold. They also have little subcutaneous fat for insulation. All these factors make it harder for newborns to maintain their body temperature.

Newborns, however, do have a special method for generating heat: nonshivering thermogenesis, which involves the breakdown of brown adipose tissue, or brown fat, which is distributed over the back, chest, and shoulders. Brown fat differs from the more familiar white fat in two ways:

- It is highly vascularized. This allows for faster delivery of oxygen, which leads to faster cellular respiration.
- It is packed with a special type of mitochondria that are able to engage in cellular respiration reactions that produce less ATP and more heat than standard cellular respiration reactions.

The breakdown of brown fat occurs automatically upon exposure to cold, so it is an important heat regulator in newborns. During

fetal development, the placenta secretes inhibitors that prevent metabolism of brown adipose fat and promote its accumulation in preparation for birth.

Gastrointestinal and Urinary Adjustments

In adults, the gastrointestinal tract harbors bacterial flora—trillions of bacteria that aid in digestion, produce vitamins, and protect from the invasion or replication of pathogens. In stark contrast, the fetal intestine is sterile. The first consumption of breast milk or formula floods the neonatal gastrointestinal tract with beneficial bacteria that begin to establish the bacterial flora.

The fetal kidneys filter blood and produce urine, but the neonatal kidneys are still immature and inefficient at concentrating urine. Therefore, newborns produce very dilute urine, making it particularly important for infants to obtain sufficient fluids from breast milk or formula. [37]

APGAR Score: Newborn Assessment

In the minutes following birth, a newborn must undergo dramatic systemic changes to be able to survive outside the womb. An obstetrician, midwife, or nurse can estimate how well a newborn is doing by obtaining an APGAR score. The Apgar score was introduced in 1952 by anesthesiologist Dr. Virginia Apgar as a method to assess the effects on the newborn of anesthesia given to the laboring mother. Healthcare providers now use it to assess the general wellbeing of the newborn, whether or not analgesics or anesthetics were used.

Five criteria are assessed:

- Skin color
- Heart rate
- Reflex,
- Muscle tone
- Respiration

Each criterion is assigned a score of 0, 1, or 2. Scores are taken at 1 minute after birth and again at 5 minutes after birth. Each time that scores are taken, the five scores are added together. High scores (out of a possible 10) indicate the baby has made the transition from the womb well, whereas lower scores indicate that the baby may be in distress. The technique for determining an APGAR score is quick and easy, painless for the newborn, and does not require any instruments except for a stethoscope.

   Of the five APGAR criteria, heart rate and respiration are the most critical. Poor scores for either of these measurements may indicate the need for immediate medical attention to resuscitate or stabilize the newborn. In general, any score lower than 7 at the 5-minute mark indicates that medical assistance may be needed. A total score below 5 indicates an emergency situation. Normally, a newborn will get an intermediate score of 1 for some of the APGAR criteria and will progress to a 2 by the 5-minute assessment. Scores of 8 or above are normal.

Review

The first breath a newborn takes at birth inflates the lungs and dramatically alters the circulatory system, closing the three shunts that directed oxygenated blood away from the lungs and liver during fetal life. Clamping and cutting the umbilical cord collapses the three umbilical blood vessels. The proximal umbilical arteries remain a part of the circulatory system, whereas the distal umbilical arteries and the umbilical vein become fibrotic. The newborn keeps

warm by breaking down brown adipose tissue in the process of nonshivering thermogenesis. The first consumption of breast milk or formula floods the newborn's sterile gastrointestinal tract with beneficial bacteria that eventually establish themselves as the bacterial flora, which aid in digestion. [37]

The Postpartum Period

As the saying goes, it takes nine months for the baby to grow, so it is going to take time for a woman's body to recover after birth. We live in a culture where movie and music stars give birth and show off their flat stomachs within days. This is so unfortunate as it places pressure on all American women to do the same. The information in this section provides realistic information regarding the postpartum period. (1)

Getting Rest

The first few days at home after having a baby are a time for rest and recovery — physically and emotionally. A woman needs to focus her energy on herself and on getting to know her new baby. Even though she may be very excited and have requests for lots of visits from family and friends, she should try to limit visitors and get as much rest as possible. Women should not expect to keep their house perfect. New moms often find that all they can do is eat, sleep, and care for their baby. And that is perfectly okay. New moms should try to lie down or nap while the baby naps. They should allow others to help and not be afraid to ask for help with cleaning, laundry, meals, or with caring for the baby.

Physical Changes

Here is a list of common physical changes and experiences that occur after birth:

- There is a vaginal discharge called lochia. It is the tissue and blood that lined the uterus during pregnancy.
- It is heavy and bright red at first, becoming lighter in flow and color until it goes aware after a few weeks.
- There may be swelling in the legs and feet.
- Constipation may be experienced.
- Menstrual-like cramping is common, especially if the woman is breastfeeding. The breast milk comes in within three to six days after delivery.

The woman's doctor checks a woman's recovery at a postpartum visit, about six weeks after birth. Some women develop thyroid problems in the first year after giving birth. This is called postpartum thyroiditis. It often begins with overactive thyroid, which lasts two to four months. Most women then develop symptoms of an underactive thyroid, which can last up to a year. Thyroid problems are easy to overlook, as many symptoms, such as fatigue, sleep problems, low energy, and changes in weight, are common after having a baby. In most cases, thyroid function returns to normal as the thyroid heals. But some women develop permanent underactive thyroid disease, called Hashimoto's disease, and need lifelong treatment.

Regaining a Healthy Weight

Both pregnancy and labor can affect a woman's body. After giving birth, women lose about 10 pounds right away and a little more as body fluid levels decrease. Women should not expect or try to lose additional pregnancy weight right away. Gradual weight loss over

several months is the safest way, especially if breastfeeding. Nursing mothers can safely lose a moderate amount of weight without affecting their milk supply or their babies' growth.

Baby Blues and Postpartum Depression

After childbirth, women may feel sad, weepy, and overwhelmed for a few days. Many new mothers have the "baby blues" after giving birth. Changing hormones, anxiety about caring for the baby, and lack of sleep, all affect emotions. These feelings are normal and usually go away quickly. But if sadness lasts more than two weeks, the new mother should see her doctor. She may have a serious but treatable condition called postpartum depression. Postpartum depression can happen any time within the first year after birth.

Signs of postpartum depression include:

- Feeling restless or irritable
- Feeling sad, depressed, or crying a lot
- Having no energy
- Having headaches, chest pains, heart palpitations (the heart being fast and feeling like it is skipping beats) numbness, or hyperventilation (fast and shallow breathing)
- Not being able to sleep, being very tired, or both
- Not being able to eat and weight loss
- Overeating and weight gain
- Trouble focusing, remembering, or making decisions
- Being overly worried about the baby
- Not having any interest in the baby
- Feeling worthless and guilty
- Having no interest or getting no pleasure from activities like sex and socializing
- Thoughts of harming your baby or yourself

Some women don't tell anyone about their symptoms because they

feel embarrassed or guilty about having these feelings at a time when they think they should be happy. Postpartum depression can make it hard to take care of the baby. Infants with mothers with postpartum depression can have delays in learning how to talk. They can have problems with emotional bonding. Therapy and/or medicine can treat postpartum depression.

Emerging research suggests that 1 in 10 new fathers may experience depression during or after pregnancy. Although more research is needed, having depression may make it harder to be a good father and perhaps affect the baby's development. Having depression may also be related to a mother's depression. New fathers with emotional problems or symptoms of depression should talk to their doctors. Depression is a treatable illness. [38]

Summary

In this module, we learned about the amazing journey from conception to birth. Genetics lays the foundation for this journey. We inherit half of our genes from our mother and half from our father, except for the DNA in our mitochondria. That DNA comes only from our mother. Our genes interact with our environment to shape our development throughout our entire life. We learned that both prenatal development and birth occur in three stages. We also examined the physical adjustments that both baby and mother face after birth. In the next module, we will learn about physical development from birth through adolescence. [1]

16. Journal and Wiki Assignments: The Dawn of a Person

Module 2 Journal Assignment

This journal assignment aligns with Learning Outcome 1.

The purpose of this assignment is to apply course material to your own development. This will allow you to better appreciate how the information that we learn in this course relates to everyday life.

Journal Instructions

This week we learned about genetics and prenatal development. So much of who we are today started before we were even born! If possible, talk to your biological mother and ask her about her pregnancy with you. Were you planned for or a surprise? What did she crave? Did she read or sing to you in the womb? Did she want to know your sex before you were born? Why or why not? How did she pick your name? Did she have morning sickness? Did she plan on a natural birth? Did the delivery go as expected? What did she love most about being pregnant with you? How do her answers correspond to what you have learned about prenatal development and pregnancy? Reflect upon the answers in your journal. What surprised you? What did you learn?

If it is not possible to talk to your biological mother, then interview anyone that you know that has had a baby, asking the same questions.

The journal should show evidence of self-reflection, be free of

writing mechanic issues, and provide references in APA format. This assignment is worth 75 points. Please refer to the rubric below for specific requirements for this journal. [1]

Module 2 Wiki Assignment

This Wiki assignment aligns with Learning Outcome 1.

Purpose

Collaboration is important for learning. In this course, we will use our class Wiki as a way to collaborate. Our Wiki page will allow us to meet asynchronously. We can share all types of files. It will allow us to learn from each other and the resources that we find.

Wiki Collaboration Instructions

The Wiki page has been set up to be open 24/7. This means that you can work whenever you want to. Your mission is to find a course related resource for module two and share it. You should briefly describe the resource and explain how it is related to module six and the milestones achieved in the social development domain. The same resource cannot be shared more than once — so checkout what is already posted. The research can be a website, blog, YouTube video, TedTalk, research article, news article, SlideShare, PowerPoint, or Pinterest board, you get the idea. In addition to posting a resource, you must also say what two other resources posted by your peers you found most educational and why by commenting on their posts. All work should be free of writing mechanic issues. This assignment is worth 75 points. [1]

MODULE 3: PHYSICAL DEVELOPMENT

17. Journal and Wiki Assignments: Physical Development

Module 3 Journal Assignment

This journal assignment aligns with Learning Outcome 1.

   The purpose of this assignment is to apply course material to your own development. This will allow you to better appreciate how the information that we learn in this course relates to everyday life.

Journal Instruction

This week, we learned a lot about physical development, brain development, sleep needs, health, sensation/perception development, and motor development. Science shows that much of our adult behaviors in terms of health are set in childhood and adolescence. Think about your current state of physical development and health. Do you eat healthy? Do you get enough sleep? Do you exercise regularly? Do you get a yearly physical to make certain that you are up to date on vaccinations and otherwise healthy? What role did your childhood experiences play in your current healthy (or unhealthy) behaviors? Explain how some of the important physical milestones you mastered during childhood/adolescence impact who you are today.

   The journal should show evidence of self-reflection, be free of writing mechanic issues, and provide references in APA format.

   This assignment is worth 75 points. Please refer to the rubric below for specific requirements for this journal. [1]

Module 3 Wiki Assignment

This Wiki assignment aligns with Learning Outcome 1.

Purpose

Collaboration is important for learning. In this course, we will use our class Wiki as a way to collaborate. Our Wiki page will allow us to meet asynchronously. We can share all types of files. It will allow us to learn from each other and the resources that we find.

Wiki Collaboration Instructions

The Wiki page has been set up to be open 24/7. This means that you can work whenever you want to. Your mission is to find a course related resource for module six and share it. You should briefly describe the resource and explain how it is related to module six and the milestones achieved in the social development domain. The same resource cannot be shared more than once — so checkout what is already posted. The research can be a website, blog, YouTube video, TedTalk, research article, news article, SlideShare, PowerPoint, or Pinterest board, you get the idea. In addition to posting a resource, you must also say what two other resources posted by your peers you found most educational and why by commenting on their posts. All work should be free of writing mechanic issues. This assignment is worth 75 points. [1]

18. Physical Development During Adolescence

Physical Development during Adolescence

Adolescence Defined

Adolescence is often characterized as a period of transformation, primarily, in terms of physical, cognitive, and social-relational change. 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. 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 from approximately ages 18 to 29 (Arnett, 2000). [46]

Puberty

Adolescence begins with puberty. While the sequence of physical changes in puberty is predictable, the onset and pace of puberty vary widely. Several physical changes occur during puberty, such as adrenarche and gonadarche, the maturing of the adrenal glands and sex glands, respectively. Also during this time, primary and secondary sexual characteristics develop and mature. Primary sexual characteristics are organs specifically needed for reproduction, like the uterus and ovaries in females and testes in males. Secondary sexual characteristics are physical signs of sexual maturation that do not directly involve sex organs, such as development of breasts and hips in girls, and development of facial hair and a deepened voice in boys. Girls experience menarche, the beginning of menstrual periods, usually around 12–13 years old, and boys experience spermarche, the first ejaculation, around 13–14 years old.

During puberty, both sexes experience a rapid increase in height (i.e., growth spurt). For girls this begins between 8 and 13 years old, with adult height reached between 10 and 16 years old. Boys begin their growth spurt slightly later, usually between 10 and 16 years old, 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 height.

Because rates of physical development vary so widely among teenagers, puberty can be a source of pride or embarrassment. 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). 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 a higher risk for depression, substance abuse, and eating disorders (Ge, Conger, & Elder, 2001; Graber, Lewinsohn, Seeley,

& Brooks-Gunn, 1997; Striegel-Moore & Cachelin, 1999). Late blooming 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). [47]

Physical Development during Adolescence (continued)

The Brain: Basic Facts

The frontal cortex, the area of the brain responsible for rational thinking, is still developing during adolescence. Adolescents differ from adults in the way they behave, solve problems, and make decisions. Recent research shows that there is a biological explanation for this difference; the brain continues to develop during adolescence and even into early adulthood.

Brain Development: The Amygdala and the Frontal Cortex

The amygdala and the frontal cortex are two key regions of the brain that develop at different times. The amygdala, which processes stress and other emotions, and is responsible for instinctual reactions like fear and aggressive behavior, matures early.

On the other hand, the frontal cortex, the area of the brain responsible for judgment, self-control, emotional regulation, rational thought, goal setting, morality, and understanding consequences, is not yet fully developed in teenagers. In fact, this

area of the brain develops quite dramatically during adolescence and into the mid-20s.

What Does This Mean for Adolescents?

Pictures of the brain in action show that adolescents' brains function differently from those of adults when making decisions and solving problems. Adolescents' actions are guided more by the amygdala and less by the frontal cortex. That means that teens' responses to situations are rooted in emotion rather than rationality. In other words, the last part of the brain to fully develop is one of the most important—it's the area that gives people the ability to make rational decisions.

Because **the part of the brain that helps us think before we act isn't fully developed until adulthood** , in stressful situations or when faced with difficult decisions, teens are more likely to:

- Think one thing and feel another
- Act from impulses that differ from thoughts or feelings
- Misread or misinterpret social cues and emotions
- Engage in risky or inappropriate behavior

How Can Adults Help?

There are several ways adults can help teens make healthy choices. Adolescents' brains go through a "use-it-or-lose-it" pruning system: brain cells and neural connections that get used the least get pruned away and die off, whereas those that get used the most become stronger.

To help teens make healthy choices, walk them through the decision making process before they encounter risky situations. This will help them to make life-impacting decisions with less

stress. Teens who undergo learning and positive experiences help build complex, adaptive brains.

Strategies to Support Healthy Adolescent Brain Development

- Encourage teens to have healthy lifestyles and offer opportunities for positive experiences.
- Provide meaningful opportunities for teens to exercise logic and apply analytical and decision making skills to build up those brain functions.
- Encourage teens to take healthy risks. Taking such risks will help to develop a stronger frontal cortex, effectively giving the teen more valuable life skills.
- Allow teens to make mistakes so that they can learn from them. [48]

Physical Development during Adolescence (continued)

Nutrition and Activity

Adolescents may be ready to make decisions about their body and health. Making healthy decisions about what to eat and drink, how active they are, and how much sleep to get are important decisions that can either promote or hinder health. Unfortunately, many teens do not make healthy decisions, partly due to the frontal cortex still developing and partly due to the culture in which we live. In the United States, 20% of individuals between the ages of 12 and 19 are

obese. If you ever have the opportunity to watch the documentary, "Fed Up." It powerfully shows how we are failing our adolescents in terms of healthy eating.

Healthy Eating

Teens need to be taught how to make healthy eating choices. Here are some healthy eating tips that teens should know:

- Try to limit foods like cookies, candy, frozen desserts, chips, and fries, which often have a lot of sugar, unhealthy fat, and salt.
- For a quick snack, try recharging with a pear, apple, or banana; a small bag of baby carrots; or hummus with sliced veggies.
- Don't add sugar to your food and drinks.
- Drink fat-free or low-fat milk and avoid sugary drinks. Soda, energy drinks, sweet tea, and some juices have added sugars, a source of extra calories. The 2015-2020 Dietary Guidelines recommend getting less than 10 percent of your daily calories from added sugars.

In addition to making smart food choices, it is also important to know that the nutritional needs of adolescents are unique. Many teens need more of these nutrients:

- **Calcium** , to build strong bones and teeth. Good sources of calcium include fat-free or low-fat milk, yogurt, and cheese.
- **Vitamin D** , to keep bones healthy. Good sources of vitamin D include orange juice, oranges, tuna, and fat-free or low-fat milk.
- **Potassium** , to help lower blood pressure. Good sources of potassium include bananas and baked potatoes with the skin.
- **Fiber** , to help stay regular and feel full. Good sources of fiber include beans and celery.

- **Protein** , to give you energy and help you grow strong. Good sources of protein include peanut butter, eggs, tofu, legumes (lentils and peas), and chicken, fish, and low-fat meats.
- **Iron** , to help you grow. Red meat contains a form of iron that your body absorbs best. Other good sources of iron include spinach, beans, peas, and iron-fortified cereals. You can help your body absorb the iron from these foods better when you combine these foods with vitamin C, like an orange.

Physical Activity

Physical activity should be part of teenagers' daily life, whether they play sports, take physical education (PE) classes in school, do chores, or get around by biking or walking. Regular physical activity can help teenagers manage their weight, have stronger muscles and bones, and be more flexible.

Aerobic Versus Lifestyle Activities

People, regardless of age, need to be physically active for at least 60 minutes a day. Most of the 60 minutes or more of activity a day should be either moderate or intense aerobic physical activity. Everyone should include intense physical activity at least 3 days a week. Examples of aerobic physical activity or activity that makes you breathe harder and speeds up your heart rate, include jogging, biking, and dancing.

For a more moderate workout, brisk walking, jogging, or biking on flat streets or paths all work. To pick up the intensity, individuals can turn a walk into a jog, or jog into a run and including hills to the walk, jog, or bike ride. We don't have to do 60 minutes a day all at once to benefit from the activity. Teens can download fitness applications

onto their computer, smartphone, or other mobile device to help keep track of how active they are each day. [49]

Sleep Needs

Sometimes it's difficult for teens to get enough sleep, especially if they have jobs, help take care of younger brothers or sisters, or are busy with other activities after school. Like healthy eating and getting enough physical activity, getting enough sleep is important for staying healthy.

Everyone needs enough sleep to do well in school, work, drive safely, and fight off infection. Not getting enough sleep may lead to moodiness and irritability. While more research is needed, some studies have shown that not getting enough sleep may also contribute to weight gain. Individuals between 13 and 18 years old should get 8 to 10 hours of sleep each night.

The amount of sleep you need changes as you age. Children need more sleep than adults. The American Academy of Sleep Medicine and the Sleep Research Society recommend:

Age Group	Recommended Hours of Sleep Per Day
Infant 4-12 months	12-16 hours per 24 hours (including naps)
Toddler 1-2 years	11-14 hours per 24 hours (including naps)
Pre-school 3-5 years	10-13 hours per 24 hours (including naps)
School Age 6-12 years	9-12 hours per 24 hours
Teen 13-18 years	8-10 hours per 24 hours
Adult 18-60 years	7 or more hours per night

Habits to Improve Your Sleep

There are some important habits that can improve your sleep health:

- Be consistent. Go to bed at the same time each night and get up at the same time each morning, including on the weekends.
- Make sure your bedroom is quiet, dark, relaxing, and at a comfortable temperature.
- Remove electronic devices, such as TVs, computers, and smart phones from the bedroom.
- Avoid large meals, caffeine, and alcohol before bedtime.
- Avoid tobacco/nicotine.
- Get some exercise. Being physically active during the day can help you fall asleep more easily at night.

What about Sleep Quality?

Getting enough sleep is important, but good sleep quality is essential. Signs of poor sleep quality include feeling sleepy or tired even after getting enough sleep, repeatedly waking up during the night, and having symptoms of sleep disorders (such as snoring or gasping for air). Better sleep habits may improve the quality of your sleep. [50]

19. Physical Development During Childhood

Physical Development during Early Childhood

Children between the ages of 2 and 6 years tend to grow about 3 inches in height each year and gain about 4 to 5 pounds in weight each year. The average 6 year old weighs about 46 pounds and is about 46 inches in height. The 3 year old is very similar to a toddler with a large head, large stomach, short arms and legs. But by the time the child reaches age 6, the torso has lengthened and body proportions have become more like those of adults.

This growth rate is slower than that of infancy and is accompanied by a reduced appetite between the ages of 2 and 6. This change can sometimes be surprising to parents and lead to the development of poor eating habits.

Nutritional Concerns

Caregivers who have established a feeding routine with their child can find this reduction in appetite a bit frustrating and become concerned that the child is going to starve. However, by providing adequate, sound nutrition, and limiting sugary snacks and drinks, the caregiver can be assured that 1) the child will not starve; and 2) the child will receive adequate nutrition. Preschoolers can experience iron deficiencies if not given well-balanced nutrition and if given too much milk. Calcium interferes with the absorption of iron in the diet as well.

Caregivers need to keep in mind that they are setting up taste

preferences at this age. Young children who grow accustomed to high fat, very sweet and salty flavors may have trouble eating foods that have more subtle flavors such as fruits and vegetables. Consider the following advice about establishing eating patterns for years to come (Rice, F.P., 1997). Notice that keeping mealtime pleasant, providing sound nutrition and not engaging in power struggles over food are the main goals.

Tips for Establishing Healthy Eating Patterns

1. **Don't try to force your child to eat or fight over food** . Of course, it is impossible to force someone to eat. But the real advice here is to avoid turning food into some kind of ammunition during a fight. Do not teach your child to eat to or refuse to eat in order to gain favor or express anger toward someone else.
2. **Recognize that appetite varies.** Children may eat well at one meal and have no appetite at another. Rather than seeing this as a problem, it may help to realize that appetites do vary. Continue to provide good nutrition, but do not worry excessively if the child does not eat.
3. **Keep it pleasant** . This tip is designed to help caregivers create a positive atmosphere during mealtime. Mealtimes should not be the time for arguments or expressing tensions. You do not want the child to have painful memories of mealtimes together or have nervous stomachs and problems eating and digesting food due to stress.
4. **No short order chefs** . While it is fine to prepare foods that children enjoy, preparing a different meal for each child or family member sets up an unrealistic expectation from others. Children probably do best when they are hungry and a meal is ready. Limiting snacks rather than allowing children to "graze" continuously can help create an appetite for whatever is being served.

5. **Limit choices** . If you give your preschool aged child choices, make sure that you give them one or two specific choices rather than asking "What would you like for lunch?" If given an open choice, children may change their minds or choose whatever their sibling does not choose.

6. **Serve balanced meals** . This tip encourages caregivers to serve balanced meals. A box of macaroni and cheese is not a balanced meal. Meals prepared at home tend to have better nutritional value than fast food or frozen dinners. Prepared foods tend to be higher in fat and sugar content as these ingredients enhance taste and profit margin because fresh food is often more costly and less profitable. However, preparing fresh food at home is not costly. It does, however, require more activity. Preparing meals and including the children in kitchen chores can provide a fun and memorable experience.

7. **Don't bribe** . Bribing a child to eat vegetables by promising desert is not a good idea. For one reason, the child will likely find a way to get the desert without eating the vegetables (by whining or fidgeting, perhaps, until the caregiver gives in), and for another reason, because it teaches the child that some foods are better than others. Children tend to naturally enjoy a variety of foods until they are taught that some are considered less desirable than others. A child, for example, may learn the broccoli they have enjoyed is seen as yucky by others unless it's smothered in cheese sauce.

Brain Maturation

If you recall, the brain is about 75 percent its adult weight by two years of age. By age 6, it is at 95 percent its adult weight. Myelination and the development of dendrites continue to occur in the cortex and as it does, we see a corresponding change in what the child

is capable of doing. Greater development in the prefrontal cortex, the area of the brain behind the forehead that helps us to think, strategizes, and controls emotion, makes it increasingly possible to control emotional outbursts and to understand how to play games. Consider 4 or 5 year old children and how they might approach a game of soccer. Chances are every move would be a response to the commands of a coach standing nearby calling out, "Run this way! Now, stop. Look at the ball. Kick the ball!" And when the child is not being told what to do, he or she is likely to be looking at the clover on the ground or a dog on the other side of the fence. Understanding the game, thinking ahead, and coordinating movement improve with practice and myelination. Not being too upset over a loss, hopefully, does as well. [44]

Physical Development during Early Childhood (continued)

Visual Pathways

Have you ever examined the drawings of young children? If you look closely, you can almost see the development of visual pathways reflected in the way these images change as pathways become more mature. Early scribbles and dots illustrate the use of simple motor skills. No real connection is made between an image being visualized and what is created on paper.

   At age 3, the child begins to draw wispy creatures with heads and not much other detail. Gradually pictures begin to have more detail and incorporate more parts of the body. Arm buds become arms and faces take on noses, lips and eventually eyelashes. Look for drawings that you or your child has created to see this fascinating trend. Here are some examples of pictures drawn by a child from ages 2 to 7 years.

Scribbles and dots by Lumen, Lifespan Development, is licensed under CC-BY 4.0 .

Line Drawing with more Detail by Lumen, Lifespan Development, is licensed under CC-BY 4.0 .

Wispy Creature by Lumen, Lifespan Development, is licensed under CC-BY 4.0 .

Growth in the Hemispheres and Corpus Callosum

Between ages 3 and 6, the left hemisphere of the brain grows dramatically. The left 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, which connects the two hemispheres of the brain undergoes a growth spurt between ages 3 and 6 as well and results in improved coordination between right and left hemisphere tasks.

Motor Skill Development

Early childhood is a time when children are especially attracted to motion and song. Days are filled with moving, jumping, running, swinging and clapping and every place becomes a playground. Children continue to improve their gross motor skills as they run and jump. And frequently ask their caregivers to "look at me" while they hop or roll down a hill. Children's songs are often accompanied by arm and leg movements or cues to turn around or move from left to right. 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. 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 in middle childhood, but for preschoolers, play that deliberately involves these skills is emphasized. [44]

Physical Development during Middle and Late Childhood

Growth Rates and Motor Skills

Rates of growth generally slow during middle childhood. Typically, a child will gain about 5-7 pounds a year and grow about 2 inches per year. They also tend to slim down and gain muscle strength and lung capacity making it possible to engage in strenuous physical activity for long periods of time. The brain reaches its adult size at about age 7. The school-aged child can is better able to plan, coordinate activity using both left and right hemispheres of the brain, and to control emotional outbursts. Paying attention is also improved as the prefrontal cortex matures. And as the myelin continues to develop, the child's reaction time also improves as well. One result of the slower rate of growth is an improvement in motor skills. Children of this age tend to sharpen their abilities to perform both gross motor skills such as riding a bike and fine motor skills such as cutting their fingernails.

Organized Sports: Pros and Cons

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. This activity promises to help children build social skills, improve athletically and learn a sense of competition. It has been suggested, however, that the emphasis on competition and athletic skill 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.

Childhood Obesity

Rates

About 16 to 33 percent of American children are obese (U. S. Department of Health and Human Services, 2005). This is defined as being at least 20 percent over their ideal weight. The percentage of obesity in school-aged children has increased substantially since the 1960s and has in fact doubled since the 1980s.

Reasons

This is true in part because of the introduction of a steady diet of television and other sedentary activities. In addition, we have come to emphasize high fat, fast foods as a culture. Pizza, hamburgers, chicken nuggets and "lunchables" with soda have replaced more nutritious foods as staples.

Consequences

Children who are overweight tend to be ridiculed and teased by others. This can certainly be damaging to their self-image and popularity. In addition, obese children run the risk of suffering orthopedic problems such as knee injuries, and an increase risk of

heart disease and stroke in adulthood. It's hard for a child who is obese to become a non-obese adult. In addition, the number of cases of pediatric diabetes has risen dramatically in recent years.

Recommendations

Dieting is not really the answer. If you diet, your basal metabolic rate tends to decrease thereby making the body burn even fewer calories in order to maintain the weight. Increased activity is much more effective in lowering the weight and improving the child's health and psychological well-being. Exercise reduces stress and being an overweight child, subjected to the ridicule of others can certainly be stressful. Parents should take caution against emphasizing diet alone to avoid the development of any obsession about dieting that can lead to eating disorders as teens. Again, increasing a child's activity level is most helpful.

A Look at School Lunches

Many children in the United States buy their lunches in the school cafeteria, so it might be worthwhile to look at the nutritional content of school lunches. You can obtain this information through your local school district's website. An example of a school menu and nutritional analysis from a school district in north central Texas is a meal consisting of pasta alfredo, bread stick, peach cup, tomato soup, and a brownie with 2% milk. This menu is in compliance with Federal Nutritional Guidelines of 108% calories, 24 % protein, 55 % carbohydrates, 27% fat, and 8% saturated fats, according to the website. Students may also purchase chips, cookies, or ice cream along with their meals. Many school districts rely on the sale of desert and other items in the lunchrooms to earn additional revenue. Many children purchase these additional items and so

our look at their nutritional intake should also take this into consideration.

Consider another menu from an elementary school in the state of Washington. This sample meal consists of chicken burger, tater tots, fruit, and veggies with 1% or nonfat milk. This meal is also in compliance with Federal Nutrition Guidelines but has about 300 fewer calories. And, children are not allowed to purchase additional deserts, such as cookies or ice cream.[45]

20. Unit 5: Physical Development - Foundations Of Child And Adolescent Psychology

Physical Development during Infancy

The average newborn in the United States weighs about 7.5 pounds and is about 20 inches in length. For the first few days of life, infants typically lose about 5 percent of their body weight as they eliminate waste and get used to feeding. This often goes unnoticed by most parents, but can be cause for concern for those who have a smaller infant. This weight loss is temporary, however, and is followed by a rapid period of growth. By the time an infant is 4 months old, it usually doubles in weight and by one year has tripled it birth weight. By age 2, the weight has quadrupled. The average length at one year is about 26-32 inches.

Another dramatic physical change that takes place in the first several years of life is the change in body proportions. The head initially makes up about 50 percent of our entire length when we are developing in the womb. At birth, the head makes up about 25 percent of our length. By age 25 it comprises about 20 percent of our length. Imagine now how difficult it must be to raise one's head during the first year of life! And indeed, if you have ever seen a 2 to 4 month old infant lying on the stomach trying to raise the head, you know how much of a challenge this is. [39]

Sudden Unexpected Infant Death and Sudden

Infant Death Syndrome

Sudden unexpected infant death (SUID) is a term used to describe the sudden and unexpected death of a baby less than 1 year old in which the cause was not obvious before investigation. These deaths often happen during sleep or in the baby's sleep area.

About 3,500 babies in the United States die suddenly and unexpectedly each year. A thorough investigation is necessary to learn what caused these deaths. Sudden unexpected infant deaths include sudden infant death syndrome (SIDS), accidental suffocation in a sleeping environment, and other deaths from unknown causes. Although the SUID rate has declined since 1990s, significant racial and ethnic differences continue. [40]
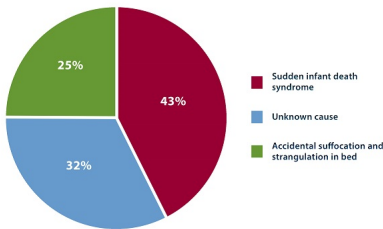

Figure 5-1: Breakdown of Sudden Unexpected Infant Death by Cause (2015) by the Centers for Disease Control and Prevention resides in the Public Domain .
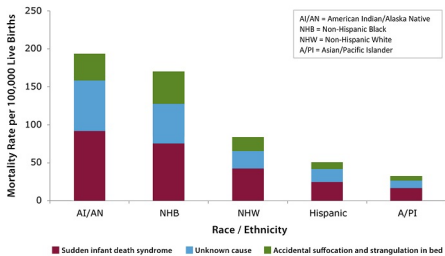

Figure 5-2: Sudden Unexpected Infant Death by Race/Ethnicity, 2011-2014 by the Centers for Disease Control and Prevention resides in the Public Domain .

Reducing the Risk of SIDS

Health care providers and researchers don't know the exact causes of Sudden Infant Death Syndrome (SIDS). However, research shows parents and caregivers can take the following actions to help reduce the risk of SIDS and other sleep-related infant deaths:

- Place the baby on his or her back for all sleep times — for naps and at night.
- Use a firm sleep surface, such as a mattress in a safety-approved crib, covered by a fitted sheet.
- Have the baby share the parents' room, not their bed. The baby should not sleep in an adult bed, on a couch, or on a chair alone, or with anyone else.
- Keep soft objects, such as pillows and loose bedding, out of the baby's sleep area.
- Parents should not smoke during pregnancy, or allow smoking around the baby. [41]

The Brain in the First Two Years

Some of the most dramatic physical changes that occur during this period is in the brain. At birth, the brain is about 25 percent its adult weight and this is not true for any other part of the body. By age 2, it is at 75 percent its adult weight, at 95 percent by age 6 and at 100 percent by age 7 years.

While most of the brain's 100 to 200 billion neurons are present at birth, they are not fully mature and during the next several years dendrites or connections between neurons will undergo a period of transient exuberance or temporary dramatic growth. There is a proliferation of these dendrites during the first two years so 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 thereby making those that are used much stronger. This activity is occurring primarily in the cortex or the thin outer covering of the brain involved in voluntary activity and thinking. The prefrontal cortex that is located behind our forehead continues to grow and mature throughout childhood and experiences an addition growth spurt during adolescence. It is the last part of the brain to mature and will eventually comprise 85 percent of the brain's weight. 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). As the prefrontal cortex matures, the child is increasingly able to regulate or control emotions, to plan activity, strategize, and have better judgment. Of course, this is not fully accomplished in infancy and toddlerhood, but continues throughout childhood and adolescence.

Another major change occurring in the central nervous system is the development of myelin, a coating of fatty tissues around the axon of the neuron. Myelin helps insulate the nerve cell and speed the rate of transmission of impulses from one cell to another. This enhances the building of neural pathways and improves coordination and control of movement and thought processes. The development of myelin continues into adolescence but is most dramatic during the first several years of life.

From Reflexes to Voluntary Movements

Infants are equipped with a number of reflexes, which are involuntary movements in response to stimulation. These include the sucking reflex (infants suck on objects that touch their lips automatically), the rooting reflex, which involves turning toward any object that touches the cheek, the palmar grasp (the infant will tightly grasp any object placed in its palm), and the dancing reflex evidence when the infant is held in a standing position and moves its

feet up and down alternately as if dancing. These movements occur automatically and are signals that the infant is functioning well neurologically. Within the first several weeks of life these reflexes are replaced with voluntary movements or motor skills.

Gross Motor Skills

These voluntary movements involve the use of large muscle groups and are typically large movements of the arms, legs, head, and torso. These skills begin to develop first. Examples include moving to bring the chin up when lying on the stomach, moving the chest up, rocking back and forth on hands and knees. But it also includes exploring an object with one's feet as many babies do as early as 8 weeks of age if seated in a carrier or other devise that frees the hips. This may be easier than reaching for an object with the hands, which requires much more practice (Berk, 2007). And sometimes an infant will try to move toward an object while crawling and surprisingly move backward because of the greater amount of strength in the arms than in the legs. [42]

21. Sensory Development and Nutrition

Sensory Development

Vision

The womb is a dark environment void of visual stimulation. Consequently, vision is the most poorly developed sense at birth. Newborns typically cannot see farther than 8 to 16 inches away from their faces, have difficulty keeping a moving object within their gaze, and can detect contrast more than color differences. If you have ever seen a newborn struggle to see, you can appreciate the cognitive efforts being made to take in visual stimulation and build those neural pathways between the eyes and the brain. When you glance at a person, where do you look? Chances are you look into their eyes. If so why? It is probably because there is more information there than in other parts of the face. Newborns do not scan objects this way; rather, they tend to look at the chin or another less detailed part of the face. However, by 2 or 3 months, they will seek more detail when exploring an object visually and begin showing preferences for unusual images over familiar ones and for patterns over solids and faces over patterns and three-dimensional objects over flat images. Newborns have difficulty distinguishing between colors, but within a few months are able to discriminate between colors, as well as do adults. Infants can also sense depth as binocular vision develops at about 2 months of age. By 6 months, the infant can perceive depth perception in pictures as well (Sen, Yonas, and Knill, 2001). Infants who have experience

crawling and exploring will pay greater attention to visual cues of depth and modify their actions accordingly (Berk, 2007).

Hearing

The infant's sense of hearing is very keen at birth. If you remember, this ability to hear is evidenced as soon as the 5th month of prenatal development. In fact, an infant can distinguish between very similar sounds as early as one month after birth and can distinguish between a familiar and non-familiar voice even earlier. Some of this ability will be lost by 7 or 8 months as a child becomes familiar with the sounds of a particular language and less sensitive to sounds that are part of an unfamiliar language.

Other Senses

Newborns can distinguish between sour, bitter, sweet, and salty flavors and show a preference for sweet flavors. They are sensitive to touch and can distinguish between their mother's scent and that of others. [42]

Nutrition

Breast milk is considered the ideal diet for newborns because:

- It has the right amount of calories, fat, and protein to support overall physical and neurological development.
- It provides a source of iron more easily absorbed in the body than the iron found in dietary supplements.

- It provides a resistance against many diseases.
- It is more easily digested by infants than is formula.
- It helps babies make a transition to solid foods more easily than if bottle fed.

For all of these reasons, it is recommended that mothers breastfeed their infants until at least 6 months of age and that breast milk be used in the diet throughout the first year (U.S. Department of Health and Human Services, 2004a in Berk, 2007).

However, most mothers whom breastfeed in the United States stop breastfeeding at about 6-8 weeks, often in order to return to work outside the home. Mothers can certainly continue to provide breast milk to their babies by expressing and freezing the milk to be bottle fed at a later time or by being available to their infants at feeding time, but some mothers find that after the initial encouragement they receive in the hospital to breast feed, the outside world is less supportive of such efforts. Some workplaces support breastfeeding mothers by providing flexible schedules and welcoming infants, but many do not. And the public support of breastfeeding is sometimes lacking. Women in Canada are more likely to breastfeed than are those in the United States. Facilities in public places in Canada such as malls, ferries, and workplaces provide more support and comfort for the breastfeeding mother and child than found in the United States.

One early argument given to promote the practice of breastfeeding was that it promoted bonding and healthy emotional development for infants. However, this does not seem to be the case. Breastfed and bottle-fed infants adjust equally well emotionally (Ferguson and Woodward, 1999). This is good news for mothers who may be unable to breastfeed for a variety of reasons and for fathers who might feel left out as a result.

In addition to the nutritional benefits of breastfeeding, breast milk is free! Anyone who has priced formula recently can appreciate this added incentive to breastfeeding. Prices for a month's worth of formula can easily range from $130-200. Breastfeeding also

stimulates contractions in the uterus to help it regain its normal size. And women who breastfeed are more likely to space their pregnancies further apart.

A Historic Look at Breastfeeding

The use of wet nurses, or lactating women hired to nurse others' infants, during the middle ages eventually declined and mothers increasingly breastfed their own infants in the late 1800s. In the early part of the 20th century, breastfeeding began to go through another decline and by the 1950s, it was practiced less frequently by middle class, more affluent mothers as formula began to be viewed as superior to breast milk. In the late 1960s and 1970s, greater emphasis began to be placed on natural childbirth and breastfeeding and the benefits of breastfeeding were more widely publicized. Gradually rates of breastfeeding began to climb, particularly among middle-class educated mothers who received the strongest messages to breastfeed. Today, women receive consultation from lactation specialists before being discharged from the hospital to ensure that they are informed of the benefits of breastfeeding and given support and encouragement to get their infants to get used to taking the breast. This does not always happen immediately and first time mothers, especially, can become upset or discouraged. In this case, lactation specialists and nursing staff can encourage the mother to keep trying until baby and mother are comfortable with the feeding.

Global Considerations and Malnutrition

In the 1960s, formula companies led campaigns in developing countries to encourage mothers to feed their babies on infant

formula. Many mothers felt that formula would be superior to breast milk and began using formula. The use of formula can certainly be healthy under conditions in which there is adequate, clean water with which to mix the formula and adequate means to sanitize bottles and nipples. However, in many of these countries such conditions were not available and babies often were given diluted, contaminated formula, which made them become sick with diarrhea and become dehydrated. Rates of breastfeeding declined in Peru from 90 percent to 10 percent in just 8 years time (Berger, 2001). These conditions continue today and now many hospitals prohibit the distribution of formula samples to new mothers in efforts to get them to rely on breastfeeding. Many of these mothers do not understand the benefits of breastfeeding and have to be encouraged and supported in order to promote this practice. Breastfeeding could save the lives of millions of infants each year, according to the World Health Organization, yet fewer than 40 percent of infants are breastfed exclusively for the first 6 months of life. Most women can breastfeed unless they are receiving chemotherapy or radiation therapy, have HIV, are dependent on illicit drugs, or have active, untreated tuberculosis.

Children in developing countries and countries experiencing the harsh conditions of war are at risk for two major types of malnutrition. Infantile marasmus refers to starvation due to a lack of calories and protein. Children who do not receive adequate nutrition lose fat and muscle until their bodies can no longer function. Babies who are breastfed are much less at risk of malnutrition than those who are bottle-fed. After weaning, children who have diets deficient in protein may experience kwashiorkor or the "disease of the displaced child" often occurring after another child has been born and taken over breastfeeding. This results in a loss of appetite and swelling of the abdomen as the body begins to break down the vital organs as a source of protein.

The Breast Milk Industry

The benefits of breast milk are well-known and publicized. The collection and distribution of breast milk has become a million dollar industry supplying hospitals and others in need of the ideal diet.

Milk Anemia in the United States

About 9 million children in the United States are malnourished (Children's Welfare, 1998). More still suffer from milk anemia, a condition in which milk consumption leads to a lack of iron in the diet. This can be due to the practice of giving toddlers milk as a pacifier-when resting, when riding, when waking, and so on. Appetite declines somewhat during toddlerhood and a small amount of milk (especially with added chocolate syrup) can easily satisfy a child's appetite for many hours. The calcium in milk interferes with the absorption of iron in the diet as well. Many preschools and daycare centers give toddlers a drink after they have finished their meal in order to prevent spoiling their appetites. [43]

22. About This Module: Physical Development

Introduction

Have you heard the statistic that more Americans are overweight or obese than ever before? Many people are familiar with this statistic because many of us struggle with weight issues. Worse than that, however, is the fact that a high number of today's children will have shorter life expectancies than their parents. How is this possible, you ask, with all the medical advances available today?

Sadly, this generation of kids is also overweight in record numbers – due partially to high sugar, high fat diets and partially to less physical activity — and as a result of their unhealthy habits, their life expectancies are shorter than their parents' generations'. Of course, this doesn't apply to healthy, nutritionally-balanced, and physically active kids, but, unfortunately, fewer kids today fall into this "healthy" category. Have you ever wondered how you would be different if you had eaten differently and had more outside time as a child? This is but one of the major topics you will learn about in this module.

What about sleep? Sleep is for the weak, right? Actually, that's a factually wrong and philosophically unhealthy statement for many reasons. First, if you want your brain to function – i.e., remember things, process information logically, and regulate your emotions effectively – then you have to let it sleep. This is true for adults, but it is especially true for children and infants. Because children's and infants' brains are developing and growing so rapidly, they need even more sleep so their brains can organize, grow, and make new neural connections. Children need significantly more sleep than adults for this very reason. Children at age 2–3 need between 10–12

hours of sleep, which usually equates to a 7:30–8:00pm bedtime. Understanding the need and purpose of sleep at different ages helps you be better prepared to meet children's needs and address problems in their behavior. Sleep is a must for children and adults alike.

Have you ever had the experience of holding a newborn baby? If so, then you were witness to an amazing spectacle of human development. Every newborn baby has just experienced a momentous physical event: transitioning to our physical world. Being born would be the equivalent of you suddenly, in your adult form, being sucked into, let's say, outer space and then – within mere hours – your body quickly adapting to the lack of air in space and "turning on" an ability to get oxygen from, let's say, photosynthesis (absorbing and processing of the sun's rays). You literally survive via a different biological process than you ever have before being sucked into outer space. Can you imagine that? It seems ludicrous. Yet, in some ways, that is what happens when a baby goes from being in its mother's womb, encased in water and connected to her body's nutrients, to living in air and eating its own nutrients.

Why this far-fetched example of being sucked into outer space? Well, for starters, it is helpful to put into perspective how truly **momentous** and taxing the transition from womb to birth is. In fact, it is only in recent history that we actually expect most babies to live through this transition. Just a century ago and stretching far back into human history, many babies died shortly after birth for fairly simple reasons. It is truly one of the most difficult human physical feats in the lifespan – both for the mother doing the birthing and the baby attempting to survive after birth.

It is for this last reason that we, as humans, have evolved such that we have reflexes and sensory abilities present immediately at birth that help us survive the first days, months, and years in life. Sucking, for example, is an inborn reflex that helps us survive the transition to consuming our own food. Can you imagine if humans were not biologically programmed to suck? It would be nearly impossible to

feed a newborn without it having the ability to suck. There are numerous abilities newborn humans "turn on" at birth so they can be more likely to live through the transition from the womb to independent life.

As humans, we aren't born fully able to walk or talk. Yet, our senses are quite keen at birth, equipping us to learn and take in the world at a very fast pace. Motor skills unfold gradually, and, unlike horses who are born walking, our gross and fine motor capabilities emerge slowly over the first few years of life. [1]

Learning Outcomes

1. Students will be able to explain the important milestone encountered within the biological/physical, cognitive, and socioemotional domains from infancy throughout adolescence. [1]

Objectives

Upon completion of this module, the student will be able to:

- Discuss developmental changes in the body.
- Describe how motor skills develop.
- Outline the course of sensory development.
- Explain ways to promote healthy development. [1]

Readings

Online Learning Unit

MODULE 4: COGNITIVE DEVELOPMENT

23. About This Module: Cognitive Development

Introduction

This module deals with the changing ways that infants, children and adolescents think. What exactly do we understand when we are just babies, crawling around on the floor and putting things in our mouth? And exactly how is a 3 year old different from a 5 year old? There are actually many changes that occur quite rapidly in our ability to think and process information.In this module, you will learn about the Cognitive Developmental Theory of Jean Piaget. Piaget's stage theory of cognitive development revolutionized the ways that children are educated and gave parents and psychologists alike a new way to understand the child's developing mind.

You will want to learn every stage (and, where applicable, the substages) — particularly, what the developing child is doing, learning, and exhibiting that is new or different. Keep in mind that, though we arrive in this life with some inborn reflexes that help us survive and adapt to our world, we are constantly learning and constructing our understanding of the world.

At times, it is important for parents to set clear boundaries with kids. Many parents set themselves up for failure because they don't provide enough positive opportunities for kids to question things. As you will learn, "questioning things" is a natural outgrowth of cognitive maturation, so just as you would take a toddler to a park to let him run and get out his physical energy, having thoughtful discussions and debates with a teen is a positive way to let him "run out" his new-found abilities in young adulthood. In fact, parents who regularly discuss things with their teens also tend to have

warmer, closer relationships and their teens have fewer problems at school.

We will also explore the many facets of intelligence. You will learn about various, sometimes conflicting, definitions of intelligence. For example, is "intelligence" a **single** , unitary ability, or is it possible that "intelligence" comes in **multiple**forms or multiple abilities? This is a debate within psychology that still generates quite a bit of controversy. The implications of how we define intelligence are huge — if someone is merely "**average**" intelligence (assuming intelligence is a single, unitary ability), does that mean that we can only expect "average" things (average levels of success) from him or her and, therefore, should not *invest* heavily in their education? What if the person is of "low" intelligence — should we just train him or her for low-level jobs that don't require complex thought or high-level thinking (janitors, service work)? And what if the person is "highly" intelligent — do we put him or her in specialized educational settings so that we really identify and hone his or her talents, making sure he or she don't get lost in the shuffle? In fact, this is how our educational system is set up, to some extent.

These questions don't have easy answers. As you can tell, the debate over how to define intelligence isn't purely an intellectual debate — it's one with real consequences for how we deliver education and services. Keep in mind that the definition and components of intelligence — even the way we measure it — is still very much open for debate.

Finally, we will look at the most unique, fascinating, and fundamentally human aspects of life on Earth: The complex and delicate development of **language** . I want you to pay particular attention to the ways that the human language **unfolds** over time and major language milestones. The human language — our unique way of communicating with each other — is unlike that of ALL other species and, even though it seems we all figure out talking somewhat automatically, some of us actually get a much bigger head start; while others of us start way behind the 'starting line' of language.

We seem to be **born ready** to communicate and most of us end up being able to speak some language (or sign it!). Yet, if we don't receive a lot of social interaction, our ability to communicate (including speaking, writing, and reading) is severely hindered. In fact, our ability to use language is so pre-wired that our sense of hearing is fully developed by month six *in the womb* , which allows us to **hear** our mothers voice, which then, in turn, **stimulates our brains** to develop the neural pathways (brain circuitry) that will **lay the foundation for later speaking** and listening. More simply put, hearing in the womb causes brain development, and that very brain development allows us to speak and understand what is spoken to us years down the road! Children deprived of this stimulation (due to cochlear problems or hearing impairments) experience different patterns of language development than children whose hearing is fully functioning.

Thus, while the human capacity for language seems to be largely innate or inborn, we are still very much in the process of understanding the mechanisms in the brain that are responsible for the emergence of this very complex and critical skill. What's more, the important events in language development do not end with birth; rather, they continue well up until the child's 5th birthday! [1]

Learning Outcome

1. Students will be able to explain the important milestones encountered within the biological/physical, cognitive, andsocioemotional domains from infancy throughout adolescence. [1]

Objectives

Upon completion of this module, the student will be able to:

- Describe Piaget's four stages of development.
- Compare and contrast Piaget's and Vygotsky's theories of cognitive development.
- Explain modern theories of intelligence.
- Explicate language development milestones. [1]

Readings

Online Learning Unit

24. Unit 6: Cognitive Development - Foundations Of Child And Adolescent Psychology

Introduction to Cognitive Development

By the time you reach adulthood you have learned a few things about how the world works. You know, for instance, that you can't walk through walls or leap into the tops of trees. You know that although you cannot see your car keys they've got to be around someplace. What's more, you know that if you want to communicate complex ideas like ordering a triple-shot soy vanilla latte with chocolate sprinkles it's better to use words with meanings attached to them rather than simply gesturing and grunting. People accumulate all this useful knowledge through the process of cognitive development, which involves a multitude of factors, both inherent and learned.Cognitive development in childhood is about change. From birth to adolescence a young person's mind changes dramatically in many important ways. Cognitive development refers to the development of thinking across the lifespan. Defining thinking can be problematic, because no clear boundaries separate thinking from other mental activities. Thinking obviously involves the higher mental processes:

- Problem-solving
- Reasoning
- Creating
- Conceptualizing

- Categorizing
- Remembering
- Planning

However, thinking also involves other mental processes that seem more basic and at which even toddlers are skilled, such as perceiving objects and events in the environment, acting skillfully on objects to obtain goals, and understanding and producing language. Yet other areas of human development that involve thinking are not usually associated with cognitive development, because thinking isn't a prominent feature of them, such as personality and temperament.

As the name suggests, cognitive development is about change. Children's thinking changes in dramatic and surprising ways. Consider DeVries's (1969) study of whether young children understand the difference between appearance and reality. To find out, she brought an unusually even-tempered cat named Maynard to a psychology laboratory and allowed the 3- to 6-year-old participants in the study to pet and play with him. DeVries then put a mask of a fierce dog on Maynard's head, and asked the children what Maynard was. Despite all of the children having identified Maynard previously as a cat, now most 3-year-olds said that he was a dog and claimed that he had a dog's bones and a dog's stomach. In contrast, the 6-year-olds weren't fooled; they had no doubt that Maynard remained a cat. Understanding how children's thinking changes so dramatically in just a few years is one of the fascinating challenges in studying cognitive development. [51]

In this module, we will focus upon Piaget's classical theory of cognitive development and language development. However, we will also examine information processing, intelligence, and the school environment. [1]

Piaget's Theory of Cognitive Development

Piaget did not believe that children think less than adults; instead, children simply think differently. He believed that between birth and adolescence, children move through four stages of cognitive development. Each stage is qualitatively different from each other, meaning that the characteristics of thought are different in quality. Piaget's theory did not allot for the skipping of a stage; however, children do move through the stages at their own pace – some faster and some slower. Piaget also posited that not all individuals reach the later stages of cognitive development. For example, an individual with a developmental disability may forever stay in the first stage of cognitive development. Over the next few pages, we shall explore Piaget's four stages of cognitive development:

- Sensorimotor
- Preoperational
- Concrete operational
- Formal operational [1]

Piaget's Sensorimotor Stage

Piaget describes intelligence in infancy as sensorimotor or based on direct, physical contact. Infants taste, feel, pound, push, hear, and move in order to experience the world. The **sensorimotor stage** has six sub-stages. Let's explore the transition infants make from responding to the external world reflexively as newborns to solving problems using mental strategies as two year olds.

Reflexive Action (Birth through 1st month)

This active learning begins with automatic movements or reflexes. A ball comes into contact with an infant's cheek and is automatically sucked on and licked. But this is also what happens with a sour lemon, much to the infant's surprise.

First Adaptations to the Environment (1st through 4th month)

Fortunately, within a few days or weeks, the infant begins to discriminate between objects and adjust responses accordingly as reflexes are replaced with voluntary movements. An infant may accidentally engage in a behavior and find it interesting such as making a vocalization. This interest motivates trying to do it again and helps the infant learn a new behavior that originally occurred by chance. At first, most actions have to do with the body, but in months to come, will be directed more toward objects.

Repetition (4th through 8th months)

During the next few months, the infant becomes more and more actively engaged in the outside world and takes delight in being able to make things happen. Repeated motion brings particular interest as the infant is able to bang two lids together from the cupboard when seated on the kitchen floor.

New Adaptations and Goal-Directed Behavior (8th through 12th months)

Now the infant can engage in behaviors that others perform and anticipate upcoming events. Perhaps because of continued

maturation of the prefrontal cortex, the infant becomes capable of having a thought and carrying out a planned, goal-directed activity, such as seeking a toy that has rolled under the couch. The object continues to exist in the infant's mind even when out of sight and the infant now is capable of making attempts to retrieve it. This is an example of a lack of object permanence.

Active Experimentation of Little Scientists (12th through 18th months)

Infants from one year to 18 months of age more actively engage in experimentation to learn about the physical world. Gravity is learned by pouring water from a cup or pushing bowls from high chairs. The caregiver tries to help the child by picking it up again and placing it on the tray. And what happens? Another experiment! The child pushes it off the tray again causing it to fall and the caregiver to pick it up again! A closer examination of this stage causes us to really appreciate how much learning is going on at this time and how many things we come to take for granted must actually be learned. I remember handing my daughters (who are close in age) when they were both seated in the back seat of the car a small container of candy. They struggled to move the pieces up and out of the small box and became frustrated when their fingers would lose their grip on the treats before they made it up and out of the top of the boxes. They had not yet learned to simply use gravity and turn the box over in their hands! This is a wonderful and messy time of experimentation and most learning occurs by trial and error.

Mental Representations (18th month to 2 years of age)

The child is now able to solve problems using mental strategies, to remember something heard days before and repeat it, to engage in

pretend play, and to find objects that have been moved even when out of sight. Take for instance, the child who is upstairs in a room with the door closed, supposedly taking a nap. The doorknob has a safety device on it that makes it impossible for the child to turn the knob. After trying several times in vain to push the door or turn the doorknob, the child carries out a mental strategy to get the door opened-he knocks on the door! Obviously, this is a technique learned from the past experience of hearing a knock on the door and observing someone opening the door. The child is now better equipped with mental strategies for problem-solving. This initial movement from the "hands-on" approach to knowing about the world to the more mental world of stage six marked the transition to preoperational thinking. Achieving object permanence marks this transition. [52]

Piaget's Preoperational Stage

Early childhood is a time of pretending, blending fact and fiction, and learning to think of the world using language. As young children move away from needing to touch, feel, and hear about the world toward learning some basic principles about how the world works, they hold some pretty interesting initial ideas. For example, how many of you are afraid that you are going to go down the bathtub drain? Hopefully, none of you do! But a child of three might really worry about this as they sit at the front of the bathtub. A child might protest if told that something will happen "tomorrow" but be willing to accept an explanation that an event will occur "today after we sleep." Or the young child may ask, "How long are we staying? From here to here?" while pointing to two points on a table. Concepts such as tomorrow, time, size and distance are not easy to grasp at this young age. Understanding size, time, distance, fact and fiction are all tasks that are part of cognitive development in the preschool years.

Piaget's stage that coincides with early childhood is the preoperational stage. The word operational means logical, so these children were thought to be illogical. However, they were learning to use language or to think of the world symbolically.

Let's examine some Piaget's assertions about children's cognitive abilities at this age.

Pretend Play

Pretending is a favorite activity at this time. A toy has qualities beyond the way it was designed to function and can now be used to stand for a character or object unlike anything originally intended. A teddy bear, for example, can be a baby or the queen of a faraway land!

Piaget believed that children's pretend play helped children solidify new schemes they were developing cognitively. This play, then, reflected changes in their conceptions or thoughts. However, children also learn as they pretend and experiment. Their play does not simply represent what they have learned (Berk, 2007).

Egocentrism

Egocentrism in early childhood refers to the tendency of young children to think that everyone sees things in the same way as the child. Piaget's classic experiment on egocentrism involved showing children a 3 dimensional model of a mountain and asking them to describe what a doll that is looking at the mountain from a different angle might see. Children tend to choose a picture that represents their own, rather than the doll's view. However, when children are speaking to others, they tend to use different sentence structures and vocabulary when addressing a younger child or an older adult. This indicates some awareness of the views of others.

Syncretism

Syncretism refers to a tendency to think that if two events

occur simultaneously, one caused the other. I remember my daughter asking that if she put on her bathing suit whether it would turn to summer.

Animism

Animism refers to attributing life-like qualities to objects. The cup is alive, the chair that falls down and hits the child's ankle is mean, and the toys need to stay home because they are tired. Cartoons frequently show objects that appear alive and take on lifelike qualities. Young children do seem to think that objects that move may be alive but after age 3, they seldom refer to objects as being alive (Berk, 2007).

Classification Errors

Preoperational children have difficulty understanding that an object can be classified in more than one way. For example, if shown three white buttons and four black buttons and asked whether there are more black buttons or white buttons, the child is likely to respond that there are more black buttons. As the child's vocabulary improves and more schemas are developed, the ability to classify objects improves.

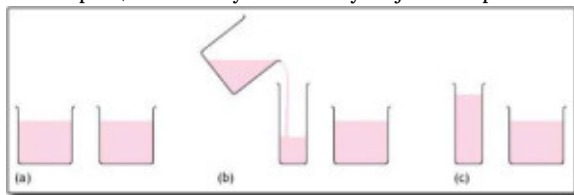Figure 6-1: Conservation of Liquid by Lumen is licensed under CC-BY 4.0 .

Conservation Errors

Conservation refers to the ability to recognize that moving or rearranging matter does not change the quantity. Imagine a 2-year-old and a 4-year-old eating lunch. The 4-year-old has a whole peanut butter and jelly sandwich. He notices, however, that his younger sister's sandwich is cut in half and protests, "She has more!" [53]

Piaget's Concrete Operational Stage

From ages 7 to 11, the school-aged child is in what Piaget referred to as the **concrete operational stage** of cognitive development. This involves mastering the use of logic in concrete ways. The child can use logic to solve problems tied to their own direct experience but has trouble solving hypothetical problems or considering more abstract problems. The child uses inductive reasoning which means thinking that the world reflects one's own personal experience. For example, a child has one friend who is rude, another friend who is also rude, and the same is true for a third friend. The child may conclude that friends are rude.

The word concrete refers to that which is tangible; that which can be seen or touched or experienced directly. The concrete operational child is able to make use of logical principles in solving problems involving the physical world. For example, the child can understand principles of cause and effect, size, and distance. As children's experiences and vocabularies grow, they build schema and are able to classify objects in many different ways.

Identity

One feature of concrete operational thought is the understanding that objects have an identity or 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.

Reversibility

The child learns that some things that have been changed can be

returned to their original state. Water can be frozen and then thawed to become liquid again. But eggs cannot be unscrambled. Arithmetic operations are reversible as well: 2 + 3 = 5 and 5 − 3 = 2. Many of these cognitive skills are incorporated into the school's curriculum through mathematical problems and in worksheets about which situations are reversible or irreversible.

Reciprocity

[click and reveal] Reciprocity Remember the earlier example of children thinking that a tall beaker filled with 8 ounces of water was "more" than a short, wide bowl filled with 8 ounces of water? Concrete operational children can understand the concept of reciprocity, which means that changing one quality (in this example, height or water level) can be compensated for by changes in another quality (width). So there is the same amount of water in each container although one is taller and narrower and the other is shorter and wider. These new cognitive skills increase the child's understanding of the physical world. [54]

Piaget's Formal Operational Stage

In the formal operations stage, children attain the reasoning power of mature adults, which allows them to solve the pendulum problem and a wide range of other problems. However, this formal operations stage tends not to occur without exposure to formal education in scientific reasoning, and appears to be largely or completely absent from some societies that do not provide this type of education. [51]

Some aspects of formal thinking are discussed here.

Abstract Thinking

Adolescents become better able to think about abstract concepts. Unlike young children, whose thinking is more bound to observable events, concrete objects, and their own (or their friends') experiences, adolescents begin to recognize that certain concepts are intangible and can't be quantified or measured. [48]

Thinking about Possibilities

Adolescents become better able to think about what's possible, instead of limiting thought to what's real. They can reason about chance and probability and can envision and evaluate alternatives. [51]

Thinking about Things in Different Ways

Adolescents develop the ability to think about things in multiple ways at the same time and can approach problems with more sophisticated lenses. They can imagine multiple perspectives, consider different dimensions, and weigh those dimensions before taking a course of action.

Thinking about Thinking

Thinking about thinking is referred to as metacognition. Adolescents become more reflective and show signs of increased introspection and self-consciousness. They can understand complex relationships between ideas and people.

Abstract vs. Concrete Thinking

There's often a difference between what young people are capable of thinking and how thought influences behavior. These cognitive capacities progressively become part of the young person's repertoire. But adolescents don't use these new abilities consistently over time or over a variety of situations. Teens may have mature thought processes sometimes, but not all the time. As teens mature, their decision-making skills increase.

When dealing with **concrete thinkers** , parents and teachers should:

- Understand that, to them, pregnancy is an abstract concept.
- Walk them through the process of complex decision-making.
- Use concrete, realistic examples in which they can "see" themselves when talking about the future.
- Be more aware that alternatives and consequences may make it difficult for them to make decisions.
- Allow them the time they need to process their thoughts.

When dealing with **abstract thinkers** , parents and teachers should:

- Be aware that abstract thinking skills may still be inconsistent.
- Be more aware that alternatives and consequences may make it difficult for them to make decisions.
- Allow them the time they need to process their thoughts.

Risk-Taking Behaviors

Some characteristics of adolescent thinking can interfere with teens' ability to use "adult-like" thinking and planning on a consistent basis, increasing the likelihood of taking risks and engaging in unsafe behavior:

Focused on The Present

Adolescents focus more on the present and are less able to think about the future. Many adolescents either seem unable to think about the future—that is, they can't think beyond the present—or they discount the future and weigh more heavily the short-term risks and benefits when making decisions.

Feelings of Invulnerability

Adolescents are more likely to see themselves as invulnerable. Many teenagers think that they're invincible and that they can't get hurt. These beliefs contribute to adolescents weighing risks differently than adults do.

Seeking Novel and Varied Experiences

Adolescents are more likely to seek out novel and varied experiences for the sake of trying "something different." Because adolescents value new experiences more than adults do, they may undertake risky behaviors even though they may recognize possible harmful consequences, including physical and social risks. [48]

25. Evaluating Piaget's Theory of Cognitive Development and Comparing Piaget and Vygotsky

Evaluating Piaget's Theory of Cognitive Development

Although Piaget's theory has been very influential, it has not gone unchallenged. Many more recent researchers have obtained findings indicating that cognitive development is considerably more continuous than Piaget claimed. For example, Diamond (1985) found that on the object permanence task discussed earlier, infants show earlier knowledge if the waiting period is shorter. At age 6 months, they retrieve the hidden object if the wait is no longer than 2 seconds; at 7 months, they retrieve it if the wait is no longer than 4 seconds; and so on. Even earlier, at 3 or 4 months, infants show surprise in the form of longer looking times if objects suddenly appear to vanish with no obvious cause (Baillargeon, 1987). Similarly, children's specific experiences can greatly influence when developmental changes occur. Children of pottery makers in Mexican villages, for example, know that reshaping clay does not change the amount of clay at much younger ages than children who do not have similar experiences (Price-Williams, Gordon, & Ramirez, 1969). [51]
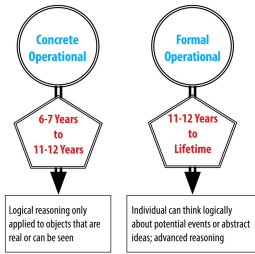
Figure 6-2: Piaget's Concrete and Formal Operational Stages by Noba Project is licensed under CC-BY-NC-SA 4.0 .

Vygotsky's Sociocultural Theory of Development

Lev Vygotsky (1978), a Russian Psychologist, focused on how a child's or novice's thinking is influenced by relationships with others who are more capable, knowledgeable, or expert than the learner. In other words, a child's cognitive development is guided by interactions with others. Vygotsky made the reasonable proposal that when a child (or novice) is learning a new skill or solving a new problem, he or she can perform better if accompanied and helped by an expert than if performing alone—though still not as well as the expert. Learning a new task first occurs on a **social plane** (or through social interactions), and then it becomes internalized and occurs on an individual plane. As the knowledge becomes internalized, it is transformed and is connected to previous experiences and knowledge.

Someone who has played very little chess, for example, will probably compete against an opponent better if helped by an expert chess player than if competing against the opponent alone. Vygotsky called the difference between solo performance and assisted performance the **zone of proximal development** (or **ZPD** for short)—meaning, figuratively speaking, the place or area of immediate change. From this social constructivist perspective, learning is like

assisted *performance* (Tharp & Gallimore, 1991). "The zone of proximal development is a dynamic region of sensitivity to learning the skills of culture, in which children develop through participation in problem solving with more experienced members of the culture" (Rogoff, 1990, p. 14).

During learning, knowledge or skill is found initially "in" the expert helper. If the expert is skilled and motivated to help, then the expert arranges experiences that let the novice practice crucial skills or construct new knowledge. These experiences often use scaffolding. **Scaffolding** is when the expert provides structure as the child develops the new knowledge and/or skill. In this regard the expert is a bit like the coach of an athlete—offering help and suggesting ways of practicing, but never doing the actual athletic work himself or herself. Gradually, by providing continued experiences matched to the novice learner's emerging competencies, the expert-coach makes it possible for the novice or apprentice to**appropriate** (or make his or her own) the skills or knowledge that originally resided only with the expert. [55]

Beyond social interactions, language and culture were also cornerstone concepts for Vygotsky's sociocultural theory of cognitive development. For Vygotsky, thinking and language are inextricably intertwined. When you think, you typically use language. When you use language, you are thinking. For Vygotsky, children interact with others when completing tasks within a given culture (such as cooking or gardening), and the person guiding them in completing the task is speaking to them, assisting them in both developing language and learn the task. Vygotsky found that children will first use **private speech** (speaking aloud) when learning their language. For example, if you watch a three-year-old child playing alone, he or she is speaking the whole time about what is going on. However, over time, our language becomes internalized. If you watch an eight-year-old child playing alone, he or she is often silent. That is because he or she now has **inner speech** (or inner voice). The child can have the talking of their toys going on in his or her head. As language grows, so does our thinking ability. However,

according to this theory, cognitive growth is dependent upon social interactions within a given culture. [1]

Comparing Piaget and Vygotsky

Piaget emphasized the ways that long-term development determines a child's ability to learn, rather than the other way around. The earliest stages of a child's life are thought to be rather self-centered and to be dependent on the child's sensory and motor interactions with the environment. When acting or reacting to his or her surroundings, the child has relatively little language skill initially. This circumstance limits the child's ability to learn in the usual, school-like sense of the term. As development proceeds, of course, language skills improve and hence the child becomes progressively more "teachable" and in this sense more able to learn. But whatever the child's age, ability to learn waits or depends upon the child's stage of development.

Social constructivists such as Vygotsky, on the other hand, emphasized the importance of social interaction in stimulating the development of the child. Language and dialogue therefore are primary, and development is seen as happening as a result—the converse of the sequence pictured by Piaget. Obviously a child does not begin life with a lot of initial language skill, but this fact is why interactions need to be scaffolded with more experienced experts—people capable of creating a zone of proximal development in their conversations and other interactions. In the preschool years the experts are usually parents; after the school years begin, the experts broaden to include teachers. [55]

26. Theory of Mind and Information Processing Theory

Theory of Mind

Imagine showing a 3 year old child a Band-Aid box and asking the child what is in the box. Chances are, the child will reply, "Band-Aids." Now imagine that you open the box and pour out crayons. If you ask the child what they thought was in the box before it was opened, he or she may respond, "crayons". If you ask what a friend would have thought was in the box, the response would still be the same–"crayons." Why? Before about 4 years of age, a child does not recognize that the mind can hold ideas that are not accurate. So this 3 year old changes his or her response once shown that the box contains crayons. The theory of mind is the understanding that the mind can be tricked or that the mind is not always accurate. At around age 4, the child would reply, "Crayons" and understand that thoughts and realities do not always match.

This awareness of the existence of mind is part of social intelligence or the ability to recognize that others can think differently about situations. It helps us to be self-conscious or aware that others can think of us in different ways and it helps us to be able to be understanding or empathic toward others. This mind reading ability helps us to anticipate and predict the actions of others–even though these predictions are sometimes inaccurate).

The awareness of the mental states of others is important for communication and social skills. A child who demonstrates this skill is able to anticipate the needs of others. [53]

Information Processing Theory

Information processing theory is a classic theory of memory that compares the way in which the mind works to computer storing, processing, and retrieving information.

   There are three levels of memory:

Sensory Register

Information first enters our sensory register. Stop reading and look around the room very quickly. (Yes, really. Do it!) Okay. What do you remember? Chances are, not much. Everything you saw and heard entered into your sensory register. And although you might have heard yourself sigh, caught a glimpse of your dog walking across the room, and smelled the soup on the stove, you did not register those sensations. Sensations are continuously coming into our brains, and yet most of these sensations are never really perceived or stored in our minds. They are lost after a few seconds because they were immediately filtered out as irrelevant. If the information is not perceived or stored, it is discarded quickly.

Working Memory (Short-term Memory)

If information is meaningful (either because it reminds us of something else or because we must remember it for something like a history test we will be taking in 5 minutes), it makes its way into our working memory. This consists of information of which we are immediately aware. All of the things on your mind at this moment are part of your working memory. There is a limited amount of information that can be kept in the working memory at any given time. So, if you are given too much information at a time, you

may lose some of it. (Have you ever been writing down notes in a class and the instructor speaks too quickly for you to get it all in your notes? You are trying to get it down and out of your working memory to make room for new information and if you cannot "dump" that information onto your paper and out of your mind quickly enough, you lose what has been said.)

Information in our working memory must be stored in an effective way in order to be accessible to us for later use. It is stored in our long-term memory or knowledge base.

Knowledge Base (Long-term Memory)

This level of memory has an unlimited capacity and stores information for days, months or years. It consists of things that we know of or can remember if asked. This is where you want information to ultimately be stored. The important thing to remember about storage is that it must be done in a meaningful or effective way. In other words, if you simply try to repeat something several times in order to remember it, you may only be able to remember the sound of the word rather than the meaning of the concept. So if you are asked to explain the meaning of the word or to apply a concept in some way, you will be lost. Studying involves organizing information in a meaningful way for later retrieval. Passively reading a text is usually inadequate and should be thought of as the first step in learning material. Writing key words, thinking of examples to illustrate their meaning, and considering ways that concepts are related are all techniques helpful for organizing information for effective storage and later retrieval.

While children learning process information during infancy and childhood, we see major improvements during middle childhood. During this period, children are able to learn and remember due to an improvement in the ways they attend to and store information. As children enter school and 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. New experiences are similar to old ones or remind the child of something else about which they know. This helps them file away new experiences more easily.

School children also have a better understanding of how well they are performing on 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. While preschoolers may spend as much time on an unimportant aspect of a problem as they do on the main point, school aged children start to learn to prioritize and gage what is significant and what is not. They develop metacognition or the ability to understand the best way to figure out a problem. They gain more tools and strategies (such as "i before e except after c" so they know that "receive" is correct but "recieve" is not.) [54]

27. Intelligence, Learning, and Schools

Intelligence, Learning, and Schools

The World of School

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 school in the United States.

Parental Involvement 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? 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 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 Irvings

A 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 would not occur. They also talked with other African-American teachers and parents about their concerns.

The Masons

A working class, African-American couple, a minister and a beautician, 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.

Ms. Caldron

A 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.

Summary

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 wealth and lack of knowledge and confidence kept 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. [56]

Controversy over Testing In Schools

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 George W. Bush signed into effect the No Child Left Behind Act. The Act mandates that schools administer achievement tests to students and publish those results so that parents have an idea of their children's performance and the government has information on the gaps in educational achievement between children from various social class, racial, and ethnic groups. Schools that show significant gaps in these levels of performance are to work toward narrowing these gaps. Educators have criticized the policy for focusing too much on testing as the only indication of performance levels.

Aptitude tests are designed to measure a student's ability to learn

or to determine if a person has potential in a particular program. These are often used at the beginning of a course of study or as part of college entrance requirements. The Scholastic Aptitude Test (SAT) and Preliminary Scholastic Aptitude Test (PSAT) are perhaps the most familiar aptitude tests to students in grades 6 and above. Learning test taking skills and preparing for SATs has become part of the training that some students in these grades receive as part of their pre-college preparation. Other aptitude tests include the MCAT (Medical College Admission Test), the LSAT (Law School Admission Test), and the GRE (Graduate Record Examination). Intelligence tests are also a form of aptitude test, which are designed to measure a person's ability to learn. [56]

Theories of Intelligence

Every year hundreds of grade school students converge on Washington, D.C., for the annual Scripps National Spelling Bee. The "bee" is an elite event in which children as young as 8 years old compete to spell words like "cymotrichous" and "appoggiatura." Most people who watch the spelling bee think of these kids as being "smart."

What makes a person intelligent? Is it heredity (two of the 2014 contestants in the National Spelling Bee have siblings who have previously won) (National Spelling Bee, 2014a)? Is it interest (the most frequently listed favorite subject among spelling bee competitors is math)(NSB, 2014b)?

In this section, we will cover these and other fascinating aspects of intelligence. By the end of the section, you should be able to define intelligence and discuss some common strategies for measuring intelligence. In addition, we will tackle the politically thorny issue of whether there are differences in intelligence between groups such as men and women. [57]

Defining and Measuring Intelligence

When you think of "smart people" you likely have an intuitive sense of the qualities that make them intelligent. Maybe you think they have a good memory, or that they can think quickly, or that they simply know a whole lot of information. Indeed, people who exhibit such qualities appear very intelligent. That said, it seems that intelligence must be more than simply knowing facts and being able to remember them. One point in favor of this argument is the idea of animal intelligence. It will come as no surprise to you that a dog, which can learn commands and tricks seems smarter than a snake that cannot. In fact, researchers and lay people generally agree with one another that primates—monkeys and apes (including humans)—are among the most intelligent animals. Apes such as chimpanzees are capable of complex problem solving and sophisticated communication (Kohler, 1924).

Scientists point to the social nature of primates as one evolutionary source of their intelligence. Primates live together in troops or family groups and are therefore, highly social creatures. As such, primates tend to have brains that are better developed for communication and long term thinking than most other animals. For instance, the complex social environment has led primates to develop deception, altruism, numerical concepts, and "theory of mind" (a sense of the self as a unique individual separate from others in the group; Gallup, 1982; Hauser, MacNeilage & Ware, 1996).

What constitutes intelligence?

The question of what constitutes human intelligence is one of the oldest inquiries in psychology. When we talk about intelligence we typically mean intellectual ability. This broadly encompasses the ability to learn, remember and use new information, to solve

problems and to adapt to novel situations. An early scholar of intelligence, Charles Spearman, proposed the idea that intelligence was one thing, a "**general factor**" sometimes known as simply "**g**." He based this conclusion on the observation that people who perform well in one intellectual area such as verbal ability also tend to perform well in other areas such as, logic and reasoning (Spearman, 1904).

   A contemporary of Spearman's named Francis Galton—himself a cousin of Charles Darwin– was among those who pioneered psychological measurement (Hunt, 2009). For three pence Galton would measure various physical characteristics such as grip strength but also some psychological attributes such as the ability to judge distance or discriminate between colors. This is an example of one of the earliest systematic measures of individual ability. Galton was particularly interested in intelligence, which he thought was heritable in much the same way that height and eye color are. He conceived of several rudimentary methods for assessing whether his hypothesis was true. For example, he carefully tracked the family tree of the top-scoring Cambridge students over the previous 40 years. Although he found specific families disproportionately produced top scholars, intellectual achievement could still be the product of economic status, family culture or other non-genetic factors. Galton was also, possibly, the first to popularize the idea that the heritability of psychological traits could be studied by looking at identical and fraternal twins. Although his methods were crude by modern standards, Galton established intelligence as a variable that could be measured (Hunt, 2009). [57]

The First "IQ" Test

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Along with his colleague Theodore Simon, Binet created a test of children's intellectual capacity. They created individual test items that should be answerable by children of given ages. For instance, a child who is three should be able to point to her mouth and eyes, a child who is nine should be able to name the months of the year in order, and a twelve year old ought to be able to name sixty words in three minutes. Their assessment became the first "IQ test." It was thought to assess some underlying ability to excel in a variety of cognitive domains, referred to as the g-factor (or general factor).

Figure 6-3: Examples Intelligence Test Items by Noba Project is licensed under CC-BY-NC-SA 4.0 .

IQ

"IQ" or "intelligence quotient" is a name given to the score of the Binet-Simon test. The score is derived by dividing a child's mental age (the score from the test) by their chronological age to create an overall quotient. These days, the phrase "IQ" does not apply specifically to the Binet-Simon test and is used to generally denote intelligence or a score on any intelligence test. In the early 1900s the Binet-Simon test was adapted by a Stanford professor named Lewis Terman to create what is, perhaps, the most famous intelligence test in the world, the Stanford-Binet (Terman, 1916). The major advantage of this new test was that it was standardized. Based on a large sample of children Terman was able to plot the scores in a normal distribution, shaped like a "bell curve." To understand a normal distribution, think about the height of people. Most people are average in height with relatively fewer being tall or short, and fewer still being extremely tall or extremely short. Terman (1916) laid out intelligence scores in exactly the same way, allowing for easy and reliable categorizations and comparisons between individuals. [57]
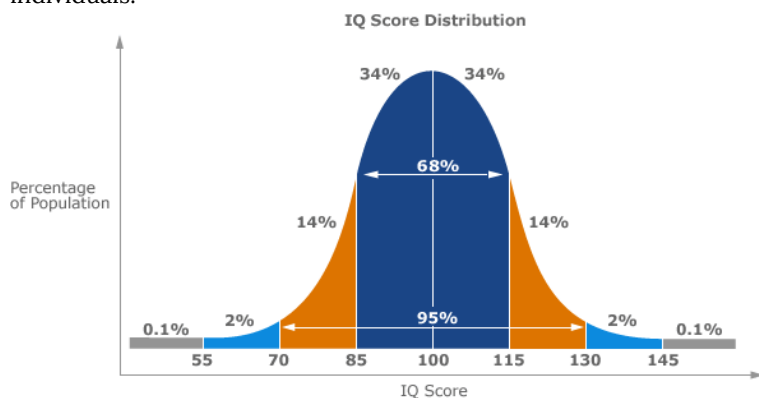

Figure 6-4: Bell Curve- Normal Distribution IQ by Noba Project is licensed under CC-BY-NC-SA 4.0 .

Intelligence

Looking at another modern intelligence test—the Wechsler Adult Intelligence Scale (WAIS)—can provide clues to a definition of intelligence itself. Motivated by several criticisms of the Stanford-Binet test, psychologist David Wechsler sought to create a superior measure of intelligence. He was critical of the way that the Stanford-Binet relied so heavily on verbal ability and was also suspicious of using a single score to capture all of intelligence. To address these issues Wechsler created a test that tapped a wide range of intellectual abilities. This understanding of intelligence—that it is made up of a pool of specific abilities—is a notable departure from Spearman's concept of general intelligence. The WAIS assesses people's ability to remember, compute, understand language, reason well, and process information quickly (Wechsler, 1955).

One interesting by-product of measuring intelligence for so many years is that we can chart changes over time. It might seem strange to you that intelligence can change over the decades but that appears to have happened over the last 80 years we have been measuring this topic. Here's how we know: IQ tests have an average score of 100. When new waves of people are asked to take older tests they tend to outperform the original sample from years ago on which the test was normed. This gain is known as the "Flynn Effect," named after James Flynn, the researcher who first identified it (Flynn, 1987). Several hypotheses have been put forth to explain the Flynn Effect including better nutrition (healthier brains!), greater familiarity with testing in general, and more exposure to visual stimuli. Today, there is no perfect agreement among psychological researchers with regards to the causes of increases in average scores on intelligence tests. [57]

What is considered smart?

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. [56]

Multiple Intelligences

Gardner (1983, 1998, 1999) suggests that there are not one, but nine domains of intelligence. The first three are skills that are measured by IQ tests:

- **Logical-mathematical** : the ability to solve mathematical problems; problems of logic, numerical patterns
- **Linguistic** : vocabulary, reading comprehension, function of language
- **Spatial** : visual accuracy, ability to read maps, understand space and distance

The next six represent skills that are not measured in standard IQ tests but are talents or abilities that can also be important for success in a variety of fields: These are:

- **Musical** : ability to understand patterns in music, hear pitches, recognize rhythms and melodies
- **Bodily-kinesthetic** : motor coordination, grace of movement, agility, strength
- **Naturalistic** : knowledge of plants, animals, minerals, climate, weather
- **Interpersonal** : understand the emotion, mood, motivation of others; able to communicate effectively
- **Intrapersonal** : understanding of the self, mood, motivation, temperament, realistic knowledge of strengths, weaknesses
- **Existential** : concern about and understanding of life's larger questions, meaning of life, or spiritual matters

Gardner contends that these are also forms of intelligence. A high IQ does not always ensure success in life or necessarily indicate that a person has common sense, good interpersonal skills, or other abilities important for success. [56]

Triarchic Theory of Intelligence

Another alternative view of intelligence is presented by Sternberg (1997; 1999). Sternberg offers three types of intelligences. He described his frustration as a committee member charged with selecting graduate students for a program in psychology. He was concerned that there was too much emphasis placed on aptitude test scores and believed that there were other, less easily measured, qualities necessary for success in a graduate program and in the world of work. Aptitude test scores indicate the first type of intelligence-academic.

Academic (componential): includes the ability to solve problems of logic, verbal comprehension, vocabulary,

and spatial abilities.

Sternberg noted that students who have high academic abilities might still not have what is required to be a successful graduate student or a competent professional. To do well as a graduate student, the person needs to be creative. The second type of intelligence emphasizes this quality.

Creative (experiential): the ability to apply newly found skills to novel situations.

A potential graduate student might be strong academically and have creative ideas, but still be lacking in the social skills required to work effectively with others or to practice good judgment in a variety of situations. This common sense is the third type of intelligence.

Practical (contextual): the ability to use common sense and to know what is called for in a situation.

This type of intelligence helps a person know when problems need to be solved. Practical intelligence can help a person know how to act and what to wear for job interviews, when to get out of problematic relationships, how to get along with others at work, and when to make changes to reduce stress. [56]

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 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 with whom you sat at lunch 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.

Student State

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.

Street Corner State

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.

Home State

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 and 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 concern 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. [56]

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). (56)

What do you think?

Let's examine a kindergarten class schedule.

8:35 — 9	Morning routines, breakfast, morning work, interventions.
9 — 9:20	Calendar and shared reading
9:20 — 9:35	Word work
9:35 — 10:15	Reading workshop
10:15 — 10:30	Recess
10:30 — 11	Guided reading
11 — 11:30	Writing workshop
11:30 — 12:30	Lunch and Recess
12:30 — 12:50	Read Aloud
12:50 — 1:30	Science or Social Studies
1:30 — 2	Specials (gym, Spanish, music, art, or library)
2 — 3	Math Workshop (small groups)
3 — 3:30	Snack and Free Choice [1]

To what extent do you think that students are being prepared for their future student role? What are the pros and cons of such preparation? Look at the curriculum for kindergarten and the first few grades in your own school district. 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. [56]

28. Developmental Problems, Learning Disabilities, and Critical Thinking, Creativity, and Problem Solving

Developmental Problems

Children's cognitive and social skills are evaluated as they enter and progress through school. Sometimes this evaluation indicates that a child needs special assistance with language or in learning how to interact with others. Evaluation and diagnosis of a child can be the first step in helping to provide that child with the type of instruction and resources needed. But diagnosis and labeling also have social implications. It is important to consider that children can be misdiagnosed and that once a child has received a diagnostic label, the child, teachers, and family members may tend to interpret actions of the child through that label. The label can also influence the child's self-concept. Consider, for example, a child who is misdiagnosed as learning disabled. That child may expect to have difficulties in school, lack confidence, and out of these expectations, have trouble indeed. This self-fulfilling prophecy or tendency to act in such a way as to make what you predict will happen comes true, calls our attention to the power that labels can have whether or not they are accurately applied.

It is also important to consider that children's difficulties can change over time; a child who has problems in school, may improve later or may live under circumstances as an adult where the problem (such as a delay in math skills or reading skills) is no longer relevant. That person, however, will still have a label as learning

disabled. It should be recognized that the distinction between abnormal and normal behavior is not always clear; some abnormal behavior in children is fairly common. Misdiagnosis may be more of a concern when evaluating learning difficulties than in cases of autism spectrum disorder where unusual behaviors are clear and consistent. Keeping these cautionary considerations in mind, let's turn our attention to some developmental and learning difficulties.

Click on each box for information.

Autism Spectrum Disorders

The estimate published by the Center for Disease Control (2006) is that about 1 out of every 166 children in the United States has an autism spectrum disorder. Autism spectrum disorders include autism, Asperger's disorder and pervasive developmental disabilities. Many of these children are not identified until they reach school age. In 2003, about 141,000 children received special education through the public schools (Center for Disease Control, 2006). These disorders are found in all racial and ethnic groups and are more common in boys than in girls. All of these disorders are marked by difficulty in social interactions, problems in various areas of communication, and in difficulty with altering patterns or daily routines. There is no single cause of ASDs and the causes of these disorders are to a large extent, unknown. In cases involving identical twins, if one twin has autism, the other is also autistic about 75 percent of the time. Rubella, fragile X syndrome and PKU that has been untreated are some of the medical conditions associated with risks of autism.

None of these disorders is curable. Some individuals benefit from medications that alleviate some of the symptoms of ASDs. But the most effective treatments involve behavioral intervention and teaching techniques used to promote the development of language and social skills, and to structure learning environments that accommodate the needs of these children.

Autism is a developmental disorder more commonly known than Asperger's or Pervasive Developmental disorders. A person with autism has difficulty with and a lack of interest in learning language. An autistic child may respond to a question by repeating the question or might rarely speak. Sometimes autistic children learn more difficult words before simple words or complicated tasks before easier ones. The person has difficulty reading social cues such as the meanings of non-verbal gestures such as a wave of the hand or the emotion associated with a frown. Intense sensitivity to touch or visual stimulation may also be experienced. Autistic children have poor social skills and are unable to communicate with others or empathize with others emotionally. An autistic views the world differently and learns differently than others. Autistic children tend to prefer routines and patterns and become upset when routines are altered. For example, moving the furniture or changing the daily schedule can be very upsetting.

Asperger's Syndrome

Asperger's syndrome is considered by some to be the same as high functioning autism. Others suggest that Asperger's disorder is different from autism in that language development is generally not delayed (Medline Plus, 2006). A person with Asperger's syndrome does not experience cognitive developmental delays, but has difficulty in social interactions. This person may be identified as strange by others, may have difficulty reading or identifying with other people's emotions, and may prefer routine and become upset if routines are disrupted. Many people with Asperger's syndrome may have above average intelligence and may have an intense focus of interests in a particular field. For example, a person may be extremely interested in and knowledgeable about cars. Another might be very interested in the smell of people's shoes.

Pervasive Developmental Disorder

Pervasive developmental disorder is a term used to refer to difficulties in socialization and delays in developing communicative skills. This is usually recognized before 3 years of age. A child with PDD may interact in unusual ways with toys, people, or situations, and may engage in repetitive movement. [58]

Learning Disabilities

What is a learning disability? The spectrum disorders just described impact many areas of the child's life. And if a child is mentally retarded, that child is typically slow in all areas of learning. However, a child with a learning disability has problems in a specific area or with a specific task or type of activity related to education. A learning difficulty refers to a deficit in a child's ability to perform an expected academic skill (Berger, 2005). 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.

- **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. For example, the child may reverse letters or have difficulty reading from left to right or may have problems associating letters with sounds. It appears to be rooted in some neurological problems involving the parts of the brain active in recognizing letters, verbally responding, or being able to manipulate sounds (National Institute of Neurological

Disorders and Stroke, 2006). Treatment typically involves altering teaching methods to accommodate the person's particular problematic area.

- **Attention Deficit Hyperactivity Disorder** is considered a neurological and behavioral disorder in which a person has difficulty staying on task, screening out distractions, and inhibiting behavioral outbursts. The most commonly recommended treatment involves the use of medication, structuring the classroom environment to keep distractions at a minimum, tutoring, and teaching parents how to set limits and encourage age-appropriate behavior (NINDS, 2006).[58]

Critical Thinking, Creativity, and Problem Solving

Critical thinking requires skill at analyzing the reliability and validity of information, as well as the attitude or disposition to do so. The skill and attitude may be displayed with regard to a particular subject matter or topic, but in principle it can occur in any realm of knowledge (Halpern, 2003; Williams, Oliver, & Stockade, 2004). A critical thinker does not necessarily have a negative attitude in the everyday sense of constantly criticizing someone or something. Instead, he or she can be thought of as astute: the critical thinker asks key questions, evaluates the evidence for ideas, reasons for problems both logically and objectively, and expresses ideas and conclusions clearly and precisely. Last (but not least), the critical thinker can apply these habits of mind in more than one realm of life or knowledge. [59]

Creativity

Creative thinking is the ability to make or do something new that is also useful or valued by others (Gardner, 1993). The "something" can be an object (like an essay or painting), a skill (like playing an instrument), or an action (like using a familiar tool in a new way). To be creative, the object, skill, or action cannot simply be bizarre or strange; it cannot be new without also being useful or valued, and not simply be the result of accident. If a person types letters at random that form a poem by chance, the result may be beautiful, but it would not be creative by the definition above. Viewed this way, creativity includes a wide range of human experience that many people, if not everyone, have had at some time or other (Kaufman & Baer, 2006). The experience is neither restricted to a few geniuses, nor exclusive to specific fields or activities like art or the composing of music.

Especially important are two facts. The first is that an important form of creativity is **creative thinking** , the generation of ideas that are new as well as useful, productive, and appropriate. The second is that creative thinking can be stimulated parents and teacher efforts. Teachers can, for example, encourage students' **divergent thinking** ——ideas that are open-ended and that lead in many directions (Torrance, 1992; Kim, 2006). Divergent thinking is stimulated by open-ended questions—questions with many possible answers, such as the following:

- How many uses can you think of for a cup?
- Draw a picture that somehow incorporates all of these words: cat, fire engine, and banana.
- What is the most unusual use you can think of for a shoe?

Note that answering these questions creatively depends partly on having already acquired knowledge about the objects to which the questions refer. In this sense divergent thinking depends partly on its converse, convergent thinking, which is focused, logical

reasoning about ideas and experiences that lead to specific answers. Up to a point, then, developing childrens' **convergent thinking** —as schoolwork often does by emphasizing mastery of content—facilitates students' divergent thinking indirectly, and hence also their creativity (Sternberg, 2003; Runco, 2004; Cropley, 2006). But carried to extremes, excessive emphasis on convergent thinking may discourage creativity. [60]

Problem-Solving

Somewhat less open-ended than creative thinking is problem solving, the analysis and solution of tasks or situations that are complex or ambiguous and that pose difficulties or obstacles of some kind (Mayer & Wittrock, 2006). Problem solving is needed, for example, when a physician analyzes a chest X-ray: a photograph of the chest is far from clear and requires skill, experience, and resourcefulness to decide which foggy-looking blobs to ignore, and which to interpret as real physical structures (and therefore real medical concerns). Problem solving is also needed when a grocery store manager has to decide how to improve the sales of a product: should she put it on sale at a lower price, or increase publicity for it, or both? Will these actions actually increase sales enough to pay for their costs? [61]

Critical thinking, creativity, and problem solving are all cognitive skills that can be cultivated and developed across childhood. Brain development and cognitive development in general, all facilitate the development of these skills. [1]

29. Language Development and Communication

Language Development

Communication in Infancy

Do newborns communicate? Certainly, they do. They do not, however, communicate with the use of language. Instead, they communicate their thoughts and needs with body posture (being relaxed or still), gestures, cries, and facial expressions. A person who spends adequate time with an infant can learn which cries indicate pain and which ones indicate hunger, discomfort, or frustration.

Intentional Vocalizations

Cooing and taking turns: Infants begin to vocalize and repeat vocalizations within the first couple of months of life. That gurgling, musical vocalization called cooing can serve as a source of entertainment to an infant who has been laid down for a nap or seated in a carrier on a car ride. Cooing serves as practice for vocalization as well as the infant hears the sound of his or her own voice and tries to repeat sounds that are entertaining. Infants also begin to learn the pace and pause of conversation as they alternate their vocalization with that of someone else and then take their turn again when the other person's vocalization has stopped. Cooing initially involves making vowel sounds like "oooo." Later, consonants are added to vocalizations such as "nanananananana."

Babbling and Gesturing

At about four to six months of age, infants begin making even more elaborate vocalizations that include the sounds required for any language. Guttural sounds, clicks, consonants, and vowel sounds stand ready to equip the child with the ability to repeat whatever sounds are characteristic of the language heard. Eventually, these sounds will no longer be used as the infant grow more accustomed to a particular language. Deaf babies also use gestures to communicate wants, reactions, and feelings. Because gesturing seems to be easier than vocalization for some toddlers, sign language is sometimes taught to enhance one's ability to communicate by making use of the ease of gesturing. The rhythm and pattern of language is used when deaf babies sign just as it is when hearing babies babble.

Understanding

At around ten months of age, the infant can understand more than he or she can say. You may have experienced this phenomenon as well if you have ever tried to learn a second language. You may have been able to follow a conversation more easily than to contribute to it.

Holophrasic Speech

Children begin using their first words at about 12 or 13 months of age and may use partial words to convey thoughts at even younger ages. These one-word expressions are referred to as holophrasic speech. For example, the child may say "ju" for the word "juice" and use this sound when referring to a bottle. The listener must interpret the meaning of the holophrase and when this is someone

who has spent time with the child, interpretation is not too difficult. They know that "ju" means "juice" which means the baby wants some milk! But, someone who has not been around the child will have trouble knowing what is meant. Imagine the parent who to a friend exclaims, "Ezra's talking all the time now!" The friend hears only "ju da ga" which, the parent explains, means "I want some milk when I go with Daddy."

Under-extension

A child who learns that a word stands for an object may initially think that the word can be used for only that particular object. Only the family's Irish Setter is a "doggie". This is referred to as under-extension. More often, however, a child may think that a label applies to all objects that are similar to the original object. In over-extension all animals become "doggies", for example. [62]

Language Development (continued)

First Words and Cultural Influences

First words if the child is using English tend to be nouns. The child labels objects such as cup or ball. In a verb-friendly language such as Chinese, however, children may learn more verbs. This may also be due to the different emphasis given to objects based on culture. Chinese children may be taught to notice action and relationship between objects while children from the United States may be taught to name an object and its qualities (color, texture, size, etc.). These differences can be seen when comparing

interpretations of art by older students from China and the United States.

Vocabulary Growth Spurt

One year olds typically have a vocabulary of about 50 words. But by the time they become toddlers, they have a vocabulary of about 200 words and begin putting those words together in telegraphic speech (I think of it now as 'text message' speech because texting is more common and is similar in that text messages typically only include the minimal amount of words to convey the message).

Two Word Sentences and Telegraphic (text message?) Speech

Words are soon combined and 18 month old toddlers can express themselves further by using expressions such as "baby bye-bye" or "doggie pretty". Words needed to convey messages are used, but the articles and other parts of speech necessary for grammatical correctness are not yet used. These expressions sound like a telegraph (or perhaps a better analogy today would be that they read like a text message) where unnecessary words are not used. "Give baby ball" is used rather than "Give the baby the ball." Or a text message of "Send money now!" rather than "Dear Mother. I really need some money to take care of my expenses" You get the idea.

Child-Directed Speech

Why is a horse a "horsie"? Have you ever wondered why adults tend to use "baby talk" or that sing-song type of intonation and exaggeration used when talking to children? This represents a universal tendency and is known as child-directed speech or

motherese or parentese. It involves exaggerating the vowel and consonant sounds, using a high-pitched voice, and delivering the phrase with great facial expression. Why is this done? It may be in order to clearly articulate the sounds of a word so that the child can hear the sounds involved. Or it may be because when this type of speech is used, the infant pays more attention to the speaker and this sets up a pattern of interaction in which the speaker and listener are in tuned with one another. When I demonstrate this in class, the students certainly pay attention and look my way. Amazing! It also works in the college classroom! [62]

Communication in Early Childhood

Vocabulary Growth

A child's vocabulary expands between the ages of 2 to 6 from about 200 words to over 10,000 words through a process called fast-mapping. Words are easily learned by making connections between new words and concepts already known. The parts of speech that are learned depend on the language and what is emphasized. Children speaking verb-friendly languages such as Chinese and Japanese as well as those speaking English tend to learn nouns more readily. But those learning less verb-friendly languages such as English seem to need assistance in grammar to master the use of verbs (Imai, et als, 2008). Children are also very creative in creating their own words to use as labels such as a "take-care-of" when referring to John, the character on the cartoon, Garfield, who takes care of the cat.

Literal Meanings

Children can repeat words and phrases after having heard them only once or twice. But they do not always understand the meaning of the words or phrases. This is especially true of expressions or figures of speech, which are taken literally. For example, two preschool aged girls began to laugh loudly while listening to a tape-recording of Disney's "Sleeping Beauty" when the narrator reports, "Prince Phillip lost his head!" They image his head popping off and rolling down the hill as he runs and searches for it. Or a classroom full of preschoolers hears the teacher say, "Wow! That was a piece of cake!" The children began asking "Cake? Where is my cake? I want cake!"

Overregularization

Children learn rules of grammar as they learn language but may apply these rules inappropriately at first. For instance, a child learns to ad "ed" to the end of a word to indicate past tense. Then form a sentence such as "I goed there. I doed that." This is typical at ages 2 and 3. They will soon learn new words such as went and did to be used in those situations.

The Impact of Training

Children can be helped in learning language by others who listen attentively, model more accurate pronunciations and encourage elaboration. The child exclaims, "I'm goed there!" and the adult responds, "You went there? Say, 'I went there.' Where did you go?" Children may be ripe for language as Chomsky suggests, but active participation in helping them learn is important for language development as well. The process of scaffolding is one in which

the guide provides needed assistance to the child as a new skill is learned.

Private 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 seeing things from others points of views. 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 before eventually closing their lips and engaging in private speech or inner speech. Thinking out loud eventually 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, etc. This inner speech is not as elaborate as the speech we use when communicating with others (Vygotsky, 1962). [53]

Communication in Middle and Late 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 5th grade, a child's vocabulary has grown to 40,000 words. It grows at the rate of 20 words per day, a rate that exceeds that of preschoolers. This language explosion, however, differs from that of preschoolers 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.

New Understanding

The child is also able to think of objects in less literal ways. For example, of asked for the first word that comes to mind when one hears the word "pizza", the preschooler is likely to say "eat" or some word that describes what is done with a pizza. However, the school-aged child is more likely to place pizza in the appropriate category and say "food" or "carbohydrate."

This sophistication of vocabulary is also evidenced in the fact that school-aged children are able to tell jokes and delight in doing do. They may use jokes that involve play on words such as "knock-knock" jokes or jokes with punch lines. Preschoolers do not understand play on words and rely on telling "jokes" that are literal or slapstick such as "A man fell down in the mud! Isn't that funny?"

Grammar and Flexibility

School-aged children are also able to learn new rules of grammar with more flexibility. While preschoolers are likely to be reluctant to give up saying "I goed there," school-aged children will learn this rather quickly along with other rules of grammar.

While the preschool years might be a good time to learn a second language (being able to understand and speak the language), the school years may be the best time to be taught a second language (the rules of grammar). [54]

Theories of Language Development

The first two theories of language development represent two extremes in the level of interaction required for language to occur (Berk, 2007).

Chomsky and the Language Acquisition Device

The view known as nativism advocated by Noam Chomsky suggests that infants are equipped with a neurological construct referred to as the language acquisition device (LAD) that makes infants ready for language. Language develops as long as the infant is exposed to it. No teaching, training, or reinforcement is required for language to develop.

Skinner and Reinforcement

Learning theorist, B. F. Skinner, suggests that language develops through the use of reinforcement. Sounds, words, gestures, and phrases are encouraged by following the behavior with words of praise or any thing that increases the likelihood that the behavior will be repeated. However, we now know that language is far to complex for simple reinforcement to explain its acquisition. We know that the brain must be wired to learn language, and begins to do so in the womb.

Social Pragmatics

Another view emphasizes the child's active engagement in learning

language out of a need to communicate. The child seeks information, memorizes terms, imitates the speech heard from others and learns to conceptualize using words as language is acquired. Many would argue that all three of these dynamics foster the acquisition of language (Berger, 2004).[62]

30. Journal and Wiki Assignments: Cognitive Development

Module 4 Journal Assignment

This journal assignment aligns with Learning Outcome 1.

The purpose of this assignment is to apply course material to your own development. This will allow you to better appreciate how the information that we learn in this course relates to everyday life.

Journal Instructions

For this week's journal, you have two options. You only have to complete one of the two options.

1. Do you feel that Piaget's theory or Vygotsky's theory best explains your cognitive development? Why?
2. As you learned, historical perspectives on intelligence believed that there is a general factor underlying intellectual capabilities. Newer theories believe that there is more than one way to be intelligent. What is your perspective? Do you believe in a g-factor or multiple intelligences? Why? How will your perspective influence how you teach or raise a child?

The journal should show evidence of self-reflection, be free of writing mechanic issues, and provide references in APA format. This assignment is worth 75 points. Please refer to the rubric below for specific requirements for this journal. [1]

Module 4 Wiki Assignment

This Wiki assignment aligns with Learning Outcome 1.

Purpose

Collaboration is important for learning. In this course, we will use our class Wiki as a way to collaborate. Our Wiki page will allow us to meet asynchronously. We can share all types of files. It will allow us to learn from each other and the resources that we find.

Wiki Collaboration Instructions

The Wiki page has been set up to be open 24/7. This means that you can work whenever you want to. Your mission is to find a course related resource for module six and share it. You should briefly describe the resource and explain how it is related to module six and the milestones achieved in the social development domain. The same resource cannot be shared more than once — so checkout what is already posted. The research can be a website, blog, YouTube video, TedTalk, research article, news article, SlideShare, PowerPoint, or Pinterest board, you get the idea. In addition to posting a resource, you must also say what two other resources posted by your peers you found most educational and why by commenting on their posts. All work should be free of writing mechanic issues. This assignment is worth 75 points. [1]

MODULE 5: EMOTIONAL AND SELF DEVELOPMENT

31. About This Module: Emotional and Self Development

Introduction

Have you ever wondered why some adults seem to have relationships that are 'successful' and others seem to repeatedly have relationships that are not so successful? If you could wave a magic wand and predict whether a person had 'what it takes' to be in a lasting relationship, would you use it? If you learned better ways to have a healthy bond in a relationship, would you be open to doing them? First, before peeking into the underpinnings of our attachment styles, it is important to look at how our emotions develop in the first place.

This module addresses one of the most fundamental aspects of the human experience: Emotion. What emotions are we born with? Are we programmed to be emotional? Yes! When we are born, we all seem prewired to be able to experience a few basic, universal emotions. As we mature and continually grow cognitively more complex, we begin to experience an even wider array of emotions. The adult human, as compared to other animals, is a highly emotional being. We experience joy, boredom, surprise, rage, peace, thrill, disgust, and a list of emotions that is well over 300 words. Just how and when do our experiences of emotions come into being?

More importantly, how to we learn our culture's rules and expectations for displaying emotions? Every culture has a wide variety of emotions, but there is also wide variety in what each society views as acceptable and unacceptable displays of emotion. For example, think about grief. In the European-American tradition,

grief is commonly experienced solemnly, quietly, and under a black veil, hiding the deepest pain. In African-American traditions, however, grief is more commonly expressed openly, and shared among family members to ease the burden of pain. The same emotion (grief) is experienced by two cultures, but they each have two very different set of rules about expressing it.

You will also learn about caregiving and attachment styles. If anything is true about human relationships, it is that they are complex and different — and it seems our relationships with our early caregivers affect the types of relationships we create as adults. That being said, psychologists have been studying attachment bonds between parent and child *scientifically* for a few decades and have discovered a few simple, basic truths about the parent-child relationship and how it does and doesn't affect us. If you want to know more, keep reading.

So, how do we connect with other people emotionally and what types of attachments do we form to them? Do the emotional bonds we have with our parents when we are young children have any bearing on the emotional aspects we have with our romantic partners as adults? Yes! This material is among the most interesting in developmental psychology because everyone can, in some way, connect to it. What type of person are YOU emotionally and how did you develop into that? These are just a few of the questions you will ponder as you read through this material.

One thing that college students commonly struggle with is choosing the right major. What is the right major, anyway? Well, first, to know the "right" major, you would first have to know yourself. You might first want to know, for example, do you prefer to work alone in solitude or in social settings? Do you crave creativity and change, or do you prefer consistency and routine? These are just a few questions one might consider as they ponder the type of career they wish for after college. But, "wait, what does this have to do with Self, Identity, and Child Psychology?" you ask. Well, it has everything to do with it.

The noted psychologist Erik Erikson famously said adolescence

is the prime time to ask the question, **"Who am I?"** By this, he suggested that asking questions of oneself during early adulthood is not only normal, but it is *essential* to becoming a fully-emotionally-mature adult. He argued that in a society of free choice (such as ours), we have so many choices in front of us, and that to ensure we don't just go through life half-hearted and unfulfilled, we must get to know ourselves before we make major life decisions about career and relationships. If we don't get to know ourselves, we are likely to jump into roles that don't truly fit us, which will lead to despair and dissatisfaction down the road.

So, back to choosing a major — If you don't know yourself well, or you haven't explored various sides of yourself fully yet, you are not alone. Many people spend their youths trying to fit in, trying to live up to their parents' or society's expectations for them, or trying to be something they're not without **pausing** to figure out what is **authentically** true for themselves. Erikson argued that it takes *purposeful* effort — in the form of **exploration** of one's choices actively — to achieve full knowledge of self and to establish **identity** . If you have been told by your mother that being a nurse is the best job for you, and you choose that path without exploring whether it is truly a fit that YOU believe in, then you're in for trouble in the long term. However, if you tried 3 other majors, did an internship at a hospital, and discovered a love for nursing, then you will be on your way to a fulfilling and long term path of reward.

Before we are establishing an identity, however, the development of our sense of self is in full swing quite early in life. In this module, you will learn about more than establishing identity. You will also learn about self-esteem and some surprising facts about its consequences; in addition, you will read about how we come to understand others, not just ourselves.

Learning Outcome

1. Students will be able to explain the important milestones encountered within the biological/physical, cognitive, and socioemotional domains from infancy throughout adolescence. [1]

Objectives

Upon completion of this module, the student will be able to:

- Explain the primary function of emotions.
- Describe the development of emotional regulation.
- Explain attachment theory.
- Discuss the major theories of temperament and personality.
- Explicate the development of identity. [1]

Readings

Online Learning Unit

32. Unit 7: Emotional and Self Development - Foundations of Child and Adolescent Psychology Learning

Theories of Emotion

Before jumping into emotional development, we should consider what emotions do and when emotions happen. According to functionalist theories of emotion, emotions help people manage important tasks (Keltner & Gross, 1999; Parrott, 2001). Fear, for example, mobilizes the body to fight or flee; happiness rewards achieving goals and builds attachments to other people.What causes emotions to happen in the first place? Although it usually feels like something in the world—a good hug, a snake slithering across the driveway, a hot-air balloon shaped like a question mark—causes an emotion directly, emotion theories contend that emotions come from how we think about what is happening in the world, not what is literally happening. After all, if things in the world directly caused emotions, everyone would always have the same emotion in response to something. Appraisal theories (Ellsworth & Scherer, 2003; Lazarus, 1991) propose that each emotion is caused by a group of appraisals, which are evaluations and judgments of what events in the world mean for our goals and well-being: Is this relevant to me? Does it further or hinder my goals? Can I deal with it or do something about it? Did someone do it on purpose? Different emotions come from different answers to these appraisal questions. [63]

Functions of Emotion

It is impossible to imagine life without emotion. We treasure our feelings—the joy at a ball game, the pleasure of the touch of a loved one, or the fun with friends on a night out. Even negative emotions are important, such as the sadness when a loved one dies, the anger when violated, the fear that overcomes us in a scary or unknown situation, or the guilt or shame toward others when our sins are made public. Emotions color life experiences and give those experiences meaning and flavor.

   In fact, emotions play many important roles in people's lives and have been the topic of scientific inquiry in psychology for well over a century (Cannon, 1927; Darwin, 1872; James, 1890). This module explores why we have emotions and why they are important. Doing so requires us to understand the function of emotions, and this module does so below by dividing the discussion into three sections. The first concerns the intrapersonal functions of emotion, which refer to the role that emotions play within each of us individually. The second concerns the interpersonal functions of emotion, which refer to the role emotions play between individuals within a group. The third concerns the social and cultural functions of emotion, which refer to the role that emotions play in the maintenance of social order within a society. All in all, we will see that emotions inform us of who we are, what our relationships with others are like, and how to behave in social interactions. Emotions give meaning to events; without emotions, those events would be mere facts. Emotions help coordinate interpersonal relationships. And emotions play an important role in the cultural functioning of keeping human societies together. [64]

Intrapersonal Functions of Emotion

Emotions Help Us Act Quickly with Minimal Conscious Awareness

Emotions are rapid information-processing systems that help us act with minimal thinking (Tooby & Cosmides, 2008). Problems associated with birth, battle, death, and seduction have occurred throughout evolutionary history and emotions evolved to aid humans in adapting to those problems rapidly and with minimal conscious cognitive intervention. If we did not have emotions, we could not make rapid decisions concerning whether to attack, defend, flee, care for others, reject food, or approach something useful, all of which were functionally adaptive in our evolutionary history and helped us to survive. For instance, drinking spoiled milk or eating rotten eggs has negative consequences for our welfare. The emotion of disgust, however, helps us immediately take action by not ingesting them in the first place or by vomiting them out. This response is adaptive because it aids, ultimately, in our survival and allows us to act immediately without much thinking. In some instances, taking the time to sit and rationally think about what to do, calculating cost–benefit ratios in one's mind, is a luxury that might cost one one's life. Emotions evolved so that we can act without that depth of thinking.

Emotions Prepare the Body for Immediate Action

Emotions prepare us for behavior. When triggered, emotions orchestrate systems such as perception, attention, inference, learning, memory, goal choice, motivational priorities, physiological reactions, motor behaviors, and behavioral decision-making

(Cosmides & Tooby, 2000; Tooby & Cosmides, 2008). Emotions simultaneously activate certain systems and deactivate others in order to prevent the chaos of competing systems operating at the same time, allowing for coordinated responses to environmental stimuli (Levenson, 1999). For instance, when we are afraid, our bodies shut down temporarily unneeded digestive processes, resulting in saliva reduction (a dry mouth); blood flows disproportionately to the lower half of the body; the visual field expands; and air is breathed in, all preparing the body to flee. Emotions initiate a system of components that includes subjective experience, expressive behaviors, physiological reactions, action tendencies, and cognition, all for the purposes of specific actions; the term "emotion" is, in reality, a metaphor for these reactions.

One common misunderstanding many people have when thinking about emotions, however, is the belief that emotions must always directly produce action. This is not true. Emotion certainly prepares the body for action; but whether people actually engage in action is dependent on many factors, such as the context within which the emotion has occurred, the target of the emotion, the perceived consequences of one's actions, previous experiences, and so forth (Baumeister, Vohs, DeWall, & Zhang, 2007; Matsumoto & Wilson, 2008). Thus, emotions are just one of many determinants of behavior, albeit an important one.

Emotions Influence Thoughts

Emotions are also connected to thoughts and memories. Memories are not just facts that are encoded in our brains; they are colored with the emotions felt at those times the facts occurred (Wang & Ross, 2007). Thus, emotions serve as the neural glue that connects those disparate facts in our minds. That is why it is easier to remember happy thoughts when happy, and angry times when angry. Emotions serve as the affective basis of many attitudes,

values, and beliefs that we have about the world and the people around us; without emotions those attitudes, values, and beliefs would be just statements without meaning, and emotions give those statements meaning. Emotions influence our thinking processes, sometimes in constructive ways, sometimes not. It is difficult to think critically and clearly when we feel intense emotions, but easier when we are not overwhelmed with emotions (Matsumoto, Hirayama, & LeRoux, 2006).

Emotions Motivate Future Behaviors

Because emotions prepare our bodies for immediate action, influence thoughts, and can be felt, they are important motivators of future behavior. Many of us strive to experience the feelings of satisfaction, joy, pride, or triumph in our accomplishments and achievements. At the same time, we also work very hard to avoid strong negative feelings; for example, once we have felt the emotion of disgust when drinking the spoiled milk, we generally work very hard to avoid having those feelings again (e.g., checking the expiration date on the label before buying the milk, smelling the milk before drinking it, watching if the milk curdles in one's coffee before drinking it). Emotions, therefore, not only influence immediate actions but also serve as an important motivational basis for future behaviors. [64]

Interpersonal Functions of Emotion

Emotions are expressed both verbally through words and nonverbally through facial expressions, voices, gestures, body postures, and movements. We are constantly expressing emotions when interacting with others, and others can reliably judge those

emotional expressions (Elfenbein & Ambady, 2002; Matsumoto, 2001); thus, emotions have signal value to others and influence others and our social interactions. Emotions and their expressions communicate information to others about our feelings, intentions, relationship with the target of the emotions, and the environment. Because emotions have this communicative signal value, they help solve social problems by evoking responses from others, by signaling the nature of interpersonal relationships, and by providing incentives for desired social behavior (Keltner, 2003).

Emotional Expressions Facilitate Specific Behaviors in Perceivers

Because facial expressions of emotion are social signals, they contain meaning not only about the expressor's psychological state but also about that person's intent and subsequent behavior. This information affects what the perceiver is likely to do. People observing fearful faces, for instance, are more likely to produce approach-related behaviors, whereas people who observe angry faces are more likely to produce avoidance-related behaviors (Marsh, Ambady, & Kleck, 2005). Even subliminal presentation of smiles produces increases in how much beverage people pour and consume and how much they are willing to pay for it; presentation of angry faces decreases these behaviors (Winkielman, Berridge, & Wilbarger, 2005). Also, emotional displays evoke specific, complementary emotional responses from observers; for example, anger evokes fear in others (Dimberg & Ohman, 1996; Esteves, Dimberg, & Ohman, 1994), whereas distress evokes sympathy and aid (Eisenberg et al., 1989).

Emotional Expressions Signal the Nature of

Interpersonal Relationships

Emotional expressions provide information about the nature of the relationships among the individuals. Some of the most important and provocative findings in this area come from studies involving married couples (Gottman & Levenson, 1992; Gottman, Levenson, & Woodin, 2001). In this research, married couples visited a laboratory after having not seen each other for 24 hours, and then engaged in intimate conversations about daily events or issues of conflict. Discrete expressions of contempt, especially by the men, and disgust, especially by the women, predicted later marital dissatisfaction and even divorce.

Emotional Expressions Provide Incentives for Desired Social Behavior

Facial expressions of emotion are important regulators of social interaction. In the developmental literature, this concept has been investigated under the concept of social referencing (Klinnert, Campos, & Sorce, 1983); that is, the process whereby infants seek out information from others to clarify a situation and then use that information to act. To date, the strongest demonstration of social referencing comes from work on the visual cliff. In the first study to investigate this concept, Campos and colleagues (Sorce, Emde, Campos, & Klinnert, 1985) placed mothers on the far end of the "cliff" from the infant. Mothers first smiled to the infants and placed a toy on top the safety glass to attract them; infants invariably began crawling to their mothers. When the infants were in the center of the table, however, the mother then posed an expression of fear, sadness, anger, interest, or joy. The results were clearly different for the different faces; no infant crossed the table when the mother showed fear; only 6% did when the mother posed

anger, 33% crossed when the mother posed sadness, and approximately 75% of the infants crossed when the mother posed joy or interest.

Other studies provide similar support for facial expressions as regulators of social interaction. In one study (Bradshaw, 1986), experimenters posed facial expressions of neutral, anger, or disgust toward babies as they moved toward an object and measured the amount of inhibition the babies showed in touching the object. The results for 10- and 15-month olds were the same: anger produced the greatest inhibition, followed by disgust, with neutral the least. This study was later replicated (Hertenstein & Campos, 2004) using joy and disgust expressions, altering the method so that the infants were not allowed to touch the toy (compared with a distractor object) until one hour after exposure to the expression. At 14 months of age, significantly more infants touched the toy when they saw joyful expressions, but fewer touched the toy when the infants saw disgust. [64]

Social and Cultural Functions of Emotion

Although there are cultural differences in the display of emotion, almost all infants start showing emotion such as smiling or reacting to their caretaker as early as 6 weeks after their birth.

If you stop to think about many things we take for granted in our daily lives, we cannot help but come to the conclusion that modern human life is a colorful tapestry of many groups and individual lives woven together in a complex yet functional way. For example, when you're hungry, you might go to the local grocery store and buy some food. Ever stop to think about how you're able to do that? You might buy a banana that was grown in a field in Southeast Asia being raised by farmers there, where they planted the tree, cared for it, and picked the fruit. They probably handed that fruit off to a distribution chain that allowed multiple people somewhere to use tools such as

cranes, trucks, cargo bins, ships or airplanes (that were also created by multiple people somewhere) to bring that banana to your store. The store had people to care for that banana until you came and got it and to barter with you for it (with your money). You may have gotten to the store riding a vehicle that was produced somewhere else in the world by others, and you were probably wearing clothes produced by some other people somewhere else.

Thus, human social life is complex. Individuals are members of multiple groups, with multiple social roles, norms, and expectations, and people move rapidly in and out of the multiple groups of which they are members. Moreover, much of human social life is unique because it revolves around cities, where many people of disparate backgrounds come together. This creates the enormous potential for social chaos, which can easily occur if individuals are not coordinated well and relationships not organized systematically.

One of the important functions of culture is to provide this necessary coordination and organization. Doing so allows individuals and groups to negotiate the social complexity of human social life, thereby maintaining social order and preventing social chaos. Culture does this by providing a meaning and information system to its members, which is shared by a group and transmitted across generations, that allows the group to meet basic needs of survival, pursue happiness and well-being, and derive meaning from life (Matsumoto & Juang, 2013). Culture is what allowed the banana from Southeast Asia to appear on your table. [64]

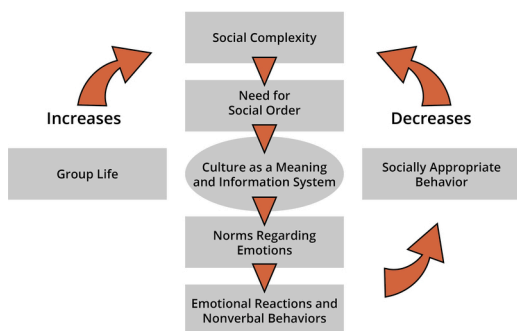**The Role of Emotions in the Function of Culture**

Figure 7-1: The Role of Emotions in the Function of Culture (Noba Project) is licensed under CC-BY-NC-SA 4.0 .

Social and Cultural Functions of Emotion (Continued)

Cultural transmission of the meaning and information system to its members is, therefore, a crucial aspect of culture. One of the ways this transmission occurs is through the development of worldviews (including attitudes, values, beliefs, and norms) related to emotions (Matsumoto & Hwang, 2013; Matsumoto et al., 2008). Worldviews related to emotions provide guidelines for desirable emotions that facilitate norms for regulating individual behaviors and interpersonal relationships. Our cultural backgrounds tell us which emotions are ideal to have, and which are not (Tsai, Knutson, & Fung, 2006). The cultural transmission of information related to emotions occurs in many ways, from childrearers to children, as well as from the cultural products available in our world, such as books, movies, ads, and the like (Schönpflug, 2009; Tsai, Louie, Chen, & Uchida, 2007).

Cultures also inform us about what to do with our emotions—that is, how to manage or modify them—when we experience them. One of the ways in which this is done is through the management of our emotional expressions through cultural display rules (Friesen, 1972). These are rules that are learned early in life that specify the management and modification of our emotional expressions according to social circumstances. Thus, we learn that "big boys don't cry" or to laugh at the boss's jokes even though they're not funny. By affecting how individuals express their emotions, culture also influences how people experience them as well.

Because one of the major functions of culture is to maintain social order in order to ensure group efficiency and thus survival, cultures create worldviews, rules, guidelines, and norms concerning

emotions because emotions have important intra- and interpersonal functions and are important motivators of behavior. Norms concerning emotion and its regulation in all cultures serve the purpose of maintaining social order. Cultural worldviews and norms help us manage and modify our emotional reactions (and thus behaviors) by helping us to have certain kinds of emotional experiences in the first place and by managing our reactions and subsequent behaviors once we have them. By doing so, our culturally moderated emotions can help us engage in socially appropriate behaviors, as defined by our cultures, and thus reduce social complexity and increase social order, avoiding social chaos. All of this allows us to live relatively harmonious and constructive lives in groups. If cultural worldviews and norms about emotions did not exist, people would just run amok having all kinds of emotional experiences, expressing their emotions and then behaving in all sorts of unpredictable and potentially harmful ways. If that were the case, it would be very difficult for groups and societies to function effectively, and even for humans to survive as a species, if emotions were not regulated in culturally defined ways for the common, social good. Thus, emotions play a critical role in the successful functioning of any society and culture. [64]

33. Emotions and Their Development and Regulation

Emotions and Their Development

Newborns and infants display eight **primary emotions** . By referring to them as primary emotions, it means that they are apparent early in life, are hardwired, universal, and likely serve an evolutionary purpose. The diagram lists the eight primary emotions and their age of appearance (Owens, 2010). It should be noted that jealousy may eventually be added to this list, as researchers have now identified it in infants as young as six months of age!
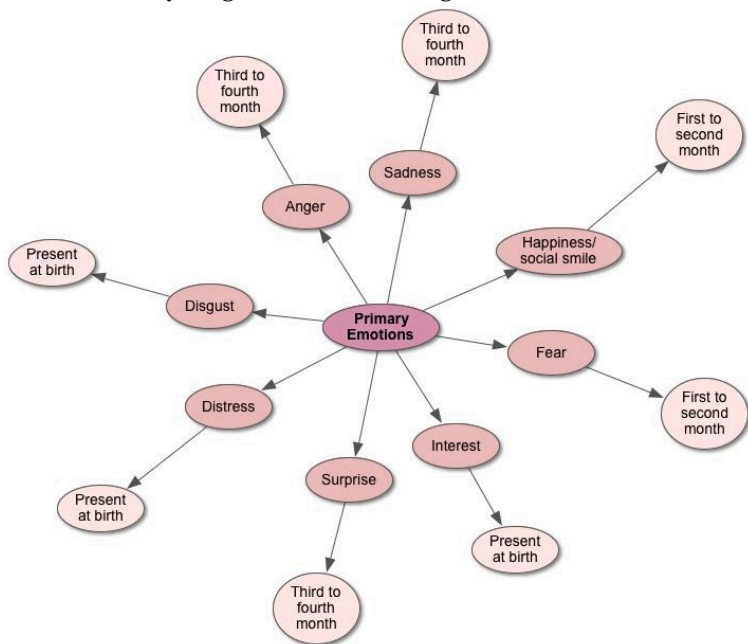
Figure 7-2: Primary Emotions by Florida State College at

Secondary Emotions

Secondary emotions emerge between the first and second birthday. Secondary emotions are various combinations of the primary emotions and include a self-reflective aspect (i.e., it is a new feeling based upon a cognitive appraisal of the situation and current emotions). Instead of being universal, these emotions can be culture specific. Said another way, secondary emotions are not hardwired; instead, they are learned through our experiences in the world and with others. Two examples of secondary emotions are pride and shame.

In infancy, the child is experiencing emotions in the here and now. With cognitive and language development, a child becomes able to discuss emotions experienced in the past, and share anticipated emotions in the future. But this is not the only change we see in emotional experiences across childhood.

Children in the early part of the preoperational stage of cognitive development will assume that everyone experiences emotions the same way that they do. If a child likes to hold her teddy bear when sad, she will take the teddy bear to an older sibling that looks sad. As children develop a theory of mind (discussed in module four), they begin to understand that people experience emotions differently than they may. Also between early and middle childhood, we increasingly differentiate between emotions. For example, a young child may say he is afraid of getting a vaccination, while an older child may use the term, "terrified". An understanding of the intensity of the emotional experience allows an older child to differentiate between fear and terror. Finally, older children realize that one event can create multiple, and sometimes conflicting, emotions. For example, facing an upcoming cross-country meet could cause both excitement and anxiety.

While it is widely believed that adolescents go through a period of emotional turmoil, that does not appear to be the case for the majority of teens. That said; hormonal changes can cause mood swings. Emotions can be intense, and with the frontal lobe still maturing (see module 3), teens may struggle in knowing how to cope with them in a healthy way. Parental guidance is key during this period. [1]

In summary, we are born emotional creatures. Our experiences of emotion are intertwined with our cognitive development, social relationships, and culture. From infancy through adolescence, we grow in understanding our emotions and the emotions of others.

Emotion Regulation Development

We have discussed emotions and their development; now, we must discuss the development of emotion regulation. What is emotion regulation? Emotion regulation is defined as the ability to "modify the nature, intensity or duration of emotions" (Martin & Ochsner, 2016, p. 142). The ability to regulate one's emotions is critical for academic and relationship success. Parents are key in coaching children in learning to regulate their emotions. John Gottman identified **four different parenting styles** in terms of how parents teach children to regulate their emotions (Lisitsa, 2012).

Dismissing Parent

The first type of parenting style is referred to as an emotionally **dismissing** parent. This parent cannot effectively cope with negative emotions – their own or others. He or she will ignore, avoid, or even mock these emotions in his or her child. Instead of teaching the child how to cope with negative emotions, he/she just

hopes that the emotions will go away or use distraction. This results in the child feeling as though negative emotions are wrong, that they cannot control their emotions, or that something is abnormal about them.

Disapproving Parent

The second type of parenting style is the emotionally **disapproving** parent (Lisitsa, 2012). This type of parent is very similar in mentality to the dismissing parent, with the difference being the degree or intensity of negativity. Disapproving parents are controlling, appear uninterested in the source and meaning of their children's emotions, and are very critical of their children. Such constant judgment and harsh criticism by their parents over their emotional experiences can be crippling to children. Their outcomes are similar to children of dismissing parents.

Laissez-Faire Parent

The third type of parenting style is the emotionally **Laissez-Faire** parent (Lisitsa, 2012). While these parents are not negative when children experience negative emotions, they fail to provide any coaching on how to cope with negative emotions in a healthy way. They do not help children to understand emotions and fail to set boundaries for their children. This is not healthy for the children. Children of Laissez-Faire parents tend to struggle academically, in relationships, and in controlling their emotions.

Emotion Coach

The fourth, and final, parenting style is the **emotion coach** (Lisitsa, 2012). A parent who is an emotion coach listens to their children about their emotions, validates those emotions, and then helps the child identify healthy strategies for coping with their negative emotions. This parenting style allows a child to be success academically, in relationships, and in his/her ability to regulate emotions.

From birth, parents are helping infants regulate their emotions. We know that parents are critical in the development of emotion regulation. They can teach children various strategies to cope with an array of emotional situations. This is considered **extrinsic emotional control**, as a child is coached on how to self-sooth when sad or control oneself when angry. While parents continue to play this role throughout their children's life, over time, much of this extrinsic emotional control becomes **internalized**. Children know how to control their anger or gracefully lose when the soccer game does not go their way. Brain development (especially the prefrontal cortex), cognitive development, and language development all play a role in the development of emotion regulation. There is also new evidence the regulation of negative and positive emotions may follow different developmental pathways (Campos, Frankel, & Camras, 2004; Martin & Ochsner, 2016; Woltering & Lews, 2009).

In summary, emotion regulation begins at birth and is largely extrinsic. Parents teach emotion regulation and being an emotion coach is the most successful and effective way to do so. Across childhood, this extrinsic emotion regulation becomes internalized. Finally, emotion regulation is key for academic and relationship success. [1]

34. Temperament, Personality, Emotional Competence, and Conscience Development

Temperament

Perhaps you have spent time with a number of infants. How were they alike? How did they differ? Or compare yourself with your siblings or other children you have known well. You may have noticed that some seemed to be in a better mood than others and that some were more sensitive to noise or more easily distracted than others. These differences may be attributed to temperament. Temperament is an inborn quality noticeable soon after birth. According to Chess and Thomas (1996), children vary on 9 dimensions of temperament. These include activity level, regularity (or predictability), sensitivity thresholds, mood, persistence or distractibility, among others. The New York Longitudinal Study was a long-term study of infants on these dimensions, which began in the 1950s. Most children do not have their temperament clinically measured, but categories of temperament have been developed and are seen as useful in understanding and working with children. These categories include easy or flexible, slow-to-warm up or cautious, difficult or feisty, and undifferentiated (or those who can't easily be categorized).

Think about how you might approach each type of child in order to improve your interactions with them. An easy or flexible child will not need much extra attention unless you want to find out whether they are having difficulties that have gone unmentioned. A **slow-**

to-warm up child may need to be given advance warning if new people or situations are going to be introduced. A **difficult** or feisty child may need to be given extra time to burn off their energy. A caregiver's ability to work well and accurately read the child will enjoy a goodness-of fit-meaning their styles match and communication and interaction can flow. Rather than believing that discipline alone will bring about improvements in children's behavior, our knowledge of temperament may help a parent, teacher or other gain insight to work more effectively with a child. [65]

Temperament and Personality

Although a child's temperament is partly determined by genetics, environmental influences also contribute to shaping personality. Positive personality development is supported by a "good fit" between a child's natural temperament, environment and experiences.

Temperament

Temperament is a foundation for personality growth. But temperament is not the whole story. Although temperament is biologically based, it interacts with the influence of experience from the moment of birth (if not before) to shape personality (Rothbart, 2011). Temperamental dispositions are affected, for example, by the support level of parental care. More generally, personality is shaped by the goodness of fit between the child's temperamental qualities and characteristics of the environment (Chess & Thomas, 1999). For example, an adventurous child whose parents regularly take her on weekend hiking and fishing trips would be a good "fit" to her

lifestyle, supporting personality growth. Personality is the result, therefore, of the continuous interplay between biological disposition and experience, as is true for many other aspects of social and personality development.

Personality

Personality develops from temperament in other ways (Thompson, Winer, & Goodvin, 2010). As children mature biologically, temperamental characteristics emerge and change over time. A newborn is not capable of much self-control, but as brain-based capacities for self-control advance, temperamental changes in self-regulation become more apparent. For example, a newborn that cries frequently doesn't necessarily have a grumpy personality; over time, with sufficient parental support and increased sense of security, the child might be less likely to cry.

In addition, personality is made up of many other features besides temperament. Children's developing self-concept, their motivations to achieve or to socialize, their values and goals, their coping styles, their sense of responsibility and conscientiousness, and many other qualities are encompassed into personality. These qualities are influenced by biological dispositions, but even more by the child's experiences with others, particularly in close relationships, that guide the growth of individual characteristics.

Indeed, personality development begins with the biological foundations of temperament but becomes increasingly elaborated, extended, and refined over time. The newborn that parents gazed upon thus becomes an adult with a personality of depth and nuance. [66]

Emotional Competence

Social and personality development is built from the social, biological, and representational influences discussed above. These influences result in important developmental outcomes that matter to children, parents, and society: a young adult's capacity to engage in socially constructive actions (helping, caring, sharing with others), to curb hostile or aggressive impulses, to live according to meaningful moral values, to develop a healthy identity and sense of self, and to develop talents and achieve success in using them. These are some of the developmental outcomes that denote social and emotional competence.

These achievements of social and personality development derive from the interaction of many social, biological, and representational influences. Consider, for example, the development of conscience, which is an early foundation for moral development. Conscience consists of the cognitive, emotional, and social influences that cause young children to create and act consistently with internal standards of conduct (Kochanska, 2002). Conscience emerges from young children's experiences with parents, particularly in the development of a mutually responsive relationship that motivates young children to respond constructively to the parents' requests and expectations. Biologically based temperament is involved, as some children are temperamentally more capable of motivated self-regulation (a quality called effortful control) than are others, while some children are dispositionally more prone to the fear and anxiety that parental disapproval can evoke. Conscience development grows through a good fit between the child's temperamental qualities and how parents communicate and reinforce behavioral expectations. Moreover, as an illustration of the interaction of genes and experience, one research group found that young children with a particular gene allele (the 5-HTTLPR) were low on measures of conscience development when they had previously experienced unresponsive maternal care, but children with the same allele

growing up with responsive care showed strong later performance on conscience measures (Kochanska, Kim, Barry, & Philibert, 2011). [66]

Conscience Development

Conscience development also expands as young children begin to represent moral values and think of themselves as moral beings. By the end of the preschool years, for example, young children develop a "moral self" by which they think of themselves as people who want to do the right thing, who feel badly after misbehaving, and who feel uncomfortable when others misbehave. In the development of conscience, young children become more socially and emotionally competent in a manner that provides a foundation for later moral conduct (Thompson, 2012).

The development of gender and gender identity is likewise an interaction among social, biological, and representational influences (Ruble, Martin, & Berenbaum, 2006). Young children learn about gender from parents, peers, and others in society, and develop their own conceptions of the attributes associated with maleness or femaleness (called gender schemas). They also negotiate biological transitions (such as puberty) that cause their sense of themselves and their sexual identity to mature.

Each of these examples of the growth of social and emotional competence illustrates not only the interaction of social, biological, and representational influences, but also how their development unfolds over an extended period. Early influences are important, but not determinative, because the capabilities required for mature moral conduct, gender identity, and other outcomes continue to develop throughout childhood, adolescence, and even the adult years. [66]

35. Attachment

Attachment

Some of the most rewarding experiences in people's lives involve the development and maintenance of close relationships. For example, some of the greatest sources of joy involve falling in love, starting a family, being reunited with distant loved ones, and sharing experiences with close others. And, not surprisingly, some of the most painful experiences in people's lives involve the disruption of important social bonds, such as separation from a spouse, losing a parent, or being abandoned by a loved one.

Why do close relationships play such a profound role in human experience? Attachment theory is one approach to understanding the nature of close relationships. In this module, we review the origins of the theory, the core theoretical principles, and some ways in which attachment influences human behavior, thoughts, and feelings across the life course.[67]

Attachment Theory: A Brief History and Core Concepts

Attachment theory was originally developed in the 1940s by John Bowlby, a British psychoanalyst who was attempting to understand the intense distress experienced by infants who had been separated from their parents. Bowlby (1969) observed that infants would go to extraordinary lengths to prevent separation from their parents or to reestablish proximity to a missing parent. For example, he noted that children who had been separated from their parents would often cry, call for their parents, refuse to eat or play, and stand at the

door in desperate anticipation of their parents' return. At the time of Bowlby's initial writings, psychoanalytic writers held that these expressions were manifestations of immature defense mechanisms that were operating to repress emotional pain. However, Bowlby observed that such expressions are common to a wide variety of mammalian species and speculated that these responses to separation may serve an evolutionary function.

When Bowlby was originally developing his theory of attachment, there were alternative theoretical perspectives on why infants were emotionally attached to their primary caregivers (most often, their biological mothers). Bowlby and other theorists, for example, believed that there was something important about the responsiveness and contact provided by mothers. Other theorists, in contrast, argued that young infants feel emotionally connected to their mothers because mothers satisfy more basic needs, such as the need for food. That is, the child comes to feel emotionally connected to the mother because she is associated with the reduction of primary drives, such as hunger, rather than the reduction of drives that might be relational in nature.

Harlow's Research on Contact Comfort

In a classic set of studies, psychologist Harry Harlow placed young monkeys in cages that contained two artificial, surrogate "mothers" (Harlow, 1958). One of those surrogates was a simple wire contraption; the other was a wire contraption covered in cloth. Both of the surrogate mothers were equipped with a feeding tube so that Harrow and his colleagues had the option to allow the surrogate to deliver or not deliver milk. Harlow found that the young macaques spent a disproportionate amount of time with the cloth surrogate as opposed to the wire surrogate. Moreover, this was true even when the infants were fed by the wire surrogate rather than the cloth surrogate. This suggests that the strong emotional bond that infants

form with their primary caregivers is rooted in something more than whether the caregiver provides food per se. Harlow's research is now regarded as one of the first experimental demonstrations of the importance of "contact comfort" in the establishment of infant–caregiver bonds.

Drawing on evolutionary theory, Bowlby (1969) argued that these behaviors are adaptive responses to separation from a primary attachment figure—a caregiver who provides support, protection, and care. Because human infants, like other mammalian infants, cannot feed or protect themselves, they are dependent upon the care and protection of "older and wiser" adults for survival. Bowlby argued that, over the course of evolutionary history, infants who were able to maintain proximity to an attachment figure would be more likely to survive to a reproductive age.

According to Bowlby, a motivational system, what he called the attachment behavioral system, was gradually "designed" by natural selection to regulate proximity to an attachment figure. The attachment system functions much like a thermostat that continuously monitors the ambient temperature of a room, comparing that temperature against a desired state and adjusting behavior (e.g., activating the furnace) accordingly. In the case of the attachment system, Bowlby argued that the system continuously monitors the accessibility of the primary attachment figure. If the child perceives the attachment figure to be nearby, accessible, and attentive, then the child feels loved, secure, and confident and, behaviorally, is likely to explore his or her environment, play with others, and be sociable. If, however, the child perceives the attachment figure to be inaccessible, the child experiences anxiety and, behaviorally, is likely to exhibit attachment behaviors ranging from simple visual searching on the low extreme to active searching, following, and vocal signaling on the other. These attachment behaviors continue either until the child is able to reestablish a desirable level of physical or psychological proximity to the attachment figure or until the child exhausts himself or herself or

gives up, as may happen in the context of a prolonged separation or loss. [67]

Individual Differences in Infant Attachment

Think of your earliest memory, does it involve just you, or does it include your loved ones, your family and caretakers?

Although Bowlby believed that these basic dynamics captured the way the attachment system works in most children, he recognized that there are individual differences in the way children appraise the accessibility of the attachment figure and how they regulate their attachment behavior in response to threats. However, it was not until his colleague, Mary Ainsworth, began to systematically study infant–parent separations that a formal understanding of these individual differences emerged. Ainsworth and her students developed a technique called the strange situation—a laboratory task for studying infant–parent attachment (Ainsworth, Blehar, Waters, & Wall, 1978). In the strange situation, 12-month-old infants and their parents are brought to the laboratory and, over a period of approximately 20 minutes, are systematically separated from and reunited with one another. In the strange situation, most children (about 60%) behave in the way implied by Bowlby's normative theory. Specifically, they become upset when the parent leaves the room, but, when he or she returns, they actively seek the parent and are easily comforted by him or her. Children who exhibit this pattern of behavior are often called secure. Other children (about 20% or less) are ill at ease initially and, upon separation, become extremely distressed. Importantly, when reunited with their parents, these children have a difficult time being soothed and often exhibit conflicting behaviors that suggest they want to be comforted, but that they also want to "punish" the parent for leaving. These children are often called anxious-resistant. The third pattern of attachment that Ainsworth and her colleagues

documented is often labeled avoidant. Avoidant children (about 20%) do not consistently behave as if they are stressed by the separation but, upon reunion, actively avoid seeking contact with their parent, sometimes turning their attention to play objects on the laboratory floor.

Ainsworth's work was important for at least three reasons.

1. First, she provided one of the first empirical demonstrations of how attachment behavior is organized in unfamiliar contexts.
2. Second, she provided the first empirical taxonomy of individual differences in infant attachment patterns. According to her research, at least three types of children exist:

   ◦ Those who are secure in their relationship with their parents
   ◦ Those who are anxious-resistant
   ◦ Those who are anxious-avoidant

3. Third, she demonstrated that these individual differences were correlated with infant–parent interactions in the home during the first year of life. Children who appear secure in the strange situation, for example, tend to have parents who are responsive to their needs. Children who appear insecure in the strange situation (i.e., anxious-resistant or avoidant) often have parents who are insensitive to their needs, or inconsistent or rejecting in the care they provide.[67]

Antecedents of Attachment Patterns

Is attachment style multi-generational? How does one person's childhood attachment style translate to the way they interact with their own children?

In the years that have followed Ainsworth's ground-breaking

research, researchers have investigated a variety of factors that may help determine whether children develop secure or insecure relationships with their primary attachment figures. As mentioned above, one of the key determinants of attachment patterns is the history of sensitive and responsive interactions between the caregiver and the child. In short, when the child is uncertain or stressed, the ability of the caregiver to provide support to the child is critical for his or her psychological development. It is assumed that such supportive interactions help the child learn to regulate his or her emotions, give the child the confidence to explore the environment, and provide the child with a safe haven during stressful circumstances.

Evidence for the role of sensitive caregiving in shaping attachment patterns comes from longitudinal and experimental studies.

For example, Grossmann, Grossmann, Spangler, Suess, and Unzner (1985) studied parent–child interactions in the homes of 54 families, up to three times during the first year of the child's life. At 12 months of age, infants and their mothers participated in the strange situation. Grossmann and her colleagues found that children who were classified as secure in the strange situation at 12 months of age were more likely than children classified as insecure to have mothers who provided responsive care to their children in the home environment.

Van den Boom (1994) developed an intervention that was designed to enhance maternal sensitive responsiveness. When the infants were 9 months of age, the mothers in the intervention group were rated as more responsive and attentive in their interaction with their infants compared to mothers in the control group. In addition, their infants were rated as more sociable, self-soothing, and more likely to explore the environment. At 12 months of age, children in the intervention group were more likely to be classified as secure than insecure in the strange situation. (67)

Attachment Patterns and Child Outcomes

Attachment researchers have studied the association between children's attachment patterns and their adaptation over time. Researchers have learned, for example, that children who are classified as secure in the strange situation are more likely to have high functioning relationships with peers, to be evaluated favorably by teachers, and to persist with more diligence in challenging tasks. In contrast, insecure-avoidant children are more likely to be construed as "bullies" or to have a difficult time building and maintaining friendships (Weinfield, Sroufe, Egeland, & Carlson, 2008). [67]

36. Self Awareness and Identity Development

Self-Awareness and Identity Development

In the Temple of Apollo at Delphi, the ancient Greeks inscribed the words: "Know thy *self* ." For at least 2,500 years, and probably longer, human beings have pondered the meaning of the ancient aphorism. Over the past century, psychological scientists have joined the effort. They have formulated many theories and tested countless hypotheses that speak to the central question of human selfhood: **How does a person know who he or she is? How does this develop from infancy through adolescence?**

The ancient Greeks seemed to realize that the self is inherently reflexive—it reflects back on itself. In the disarmingly simple idea made famous by the great psychologist William James (1892/1963), the self is what happens when "I" reflects back upon "Me." The self is both the "I" and the "Me"—it is the knower, and it is what the knower knows when the knower reflects upon itself. When you look back at yourself, what do you see? When you look inside, what do you find? Moreover, when you try to **change** your self in some way, what is it that you are trying to change? The philosopher Charles Taylor (1989) describes the self as a reflexive project. In modern life, Taylor agues, we often try to manage, discipline, refine, improve, or develop the self.

We work on our selves, as we might work on any other interesting project. But what exactly is it that we work on?

Imagine for a moment that you have decided to improve yourself. You might, say, go on a diet to improve your appearance. Or you might decide to be nicer to your mother, in order to improve that important social role. Or maybe the problem is at work—you need

to find a better job or go back to school to prepare for a different career. Perhaps you just need to work harder. Or get organized. Or recommit yourself to religion. Or maybe the key is to begin thinking about your whole life story in a completely different way, in a way that you hope will bring you more happiness, fulfillment, peace, or excitement.

Although there are many different ways you might reflect upon and try to improve the self, it turns out that many, if not most, of them fall roughly into three broad psychological categories (McAdams & Cox, 2010). The "I" may encounter the "Me" as (a) a social actor, (b) a motivated agent, or (c) an autobiographical author. [68]

The Social Actor

In some ways people are just like actors on stage. We play roles and follow scripts every day.

Shakespeare tapped into a deep truth about human nature when he famously wrote, "All the world's a stage, and all the men and women merely players." He was wrong about the "merely," however, for there is nothing more important for human adaptation than the manner in which we perform our roles as actors in the everyday theatre of social life. What Shakespeare may have sensed but could not have fully understood is that human beings evolved to live in social groups. Beginning with Darwin (1872/1965) and running through contemporary conceptions of human evolution, scientists have portrayed human nature as profoundly **social** (Wilson, 2012). For a few million years, **Homo sapiens** and their evolutionary forerunners have survived and flourished by virtue of their ability to live and work together in complex social groups, cooperating with each other to solve problems and overcome threats and competing with each other in the face of limited resources. As social animals, human beings strive to get along and **get ahead** in the presence of

each other (Hogan, 1982). Evolution has prepared us to care deeply about social acceptance and social status, for those unfortunate individuals who do not get along well in social groups or who fail to attain a requisite status among their peers have typically been severely compromised when it comes to survival and reproduction.

It makes consummate evolutionary sense, therefore, that the human "I" should apprehend the "Me" first and foremost as a**social actor** .

For human beings, the sense of the self as a social actor begins to emerge around the age of 18 months. Numerous studies have shown that by the time they reach their second birthday most toddlers recognize themselves in mirrors and other reflecting devices (Lewis & Brooks-Gunn, 1979; Rochat, 2003). What they see is an embodied actor who moves through space and time. Many children begin to use words such as "me" and "mine" in the second year of life, suggesting that the "I" now has linguistic labels that can be applied reflexively to itself: I call myself "me." Around the same time, children also begin to express social emotions such as embarrassment, shame, guilt, and pride (Tangney, Stuewig, & Mashek, 2007). These emotions tell the social actor how well he or she is performing in the group. When I do things that win the approval of others, I feel proud of myself. When I fail in the presence of others, I may feel embarrassment or shame. When I violate a social rule, I may experience guilt, which may motivate me to make amends. [68]

"I" and "Me"

Many of the classic psychological theories of human selfhood point to the second year of life as a key developmental period. For example, Freud (1923/1961) and his followers in the psychoanalytic tradition traced the emergence of an autonomous ego back to the second year. Freud used the term "ego" (in German *das Ich* , which

also translates into "the I") to refer to an executive self in the personality. Erikson (1963) argued that experiences of trust and interpersonal attachment in the first year of life help to consolidate the autonomy of the ego in the second. Coming from a more sociological perspective, Mead (1934) suggested that the "I" comes to know the "Me" through reflection, which may begin quite literally with mirrors but later involves the reflected appraisals of others. I come to know who I am as a social actor, Mead argued, by noting how **other people** in my social world react to my performances. In the development of the self as a social actor, other people function like mirrors—they reflect who I am back to me.

Research has shown that when young children begin to make attributions about themselves, they start simple (Harter, 2006). At age 4, Jessica knows that she has dark hair, knows that she lives in a white house, and describes herself to others in terms of simple behavioral **traits** . She may say that she is "nice," or "helpful," or that she is "a good girl most of the time." By the time, she is in fifth grade (age 10), Jessica sees herself in more complex ways, attributing traits to the self such as "honest," "moody," "outgoing," "shy," "hard-working," "smart," "good at math but not gym class," or "nice except when I am around my annoying brother." By late childhood and early adolescence, the personality traits that people attribute to themselves, as well as those attributed to them by others, tend to correlate with each other in ways that conform to a well-established taxonomy of five broad trait domains, repeatedly derived in studies of adult personality and often called the **Big Five** (Roberts, Wood, & Caspi, 2008):

- Extraversion
- Neuroticism
- Agreeableness
- Conscientiousness
- Openness to experience

By late childhood, moreover, self-conceptions will likely also include

important social roles: "I am a good student," "I am the oldest daughter," or "I am a good friend to Sarah." [68]

Traits

Traits and roles, and variations on these notions, are the main currency of the self as social actor (McAdams & Cox, 2010). Trait terms capture perceived consistencies in social performance. They convey what I reflexively perceive to be my overall acting style, based in part on how I think others see me as an actor in many different social situations. Roles capture the quality, as I perceive it, of important structured relationships in my life. Taken together, traits and roles make up the main features of my social reputation, as I apprehend it in my own mind (Hogan, 1982).

If you have ever tried hard to change yourself, you may have taken aim at your social reputation, targeting your central traits or your social roles. Maybe you woke up one day and decided that you must become a more optimistic and emotionally upbeat person. Taking into consideration the reflected appraisals of others, you realized that even your friends seem to avoid you because you bring them down. In addition, it feels bad to feel so bad all the time: Wouldn't it be better to feel good, to have more energy and hope? In the language of traits, you have decided to "work on" your "neuroticism." Or maybe instead, your problem is the trait of "conscientiousness": You are undisciplined and don't work hard enough, so you resolve to make changes in that area. Self-improvement efforts such as these—aimed at changing one's traits to become a more effective social actor—are sometimes successful, but they are very hard—kind of like dieting. Research suggests that broad traits tend to be stubborn, resistant to change, even with the aid of psychotherapy. However, people often have more success working directly on their social roles. To become a more effective social actor, you may want to take aim at the important roles you play in life. What can I

do to become a better son or daughter? How can I find new and meaningful roles to perform at work, or in my family, or among my friends, or in my church and community? By doing concrete things that enrich your performances in important social roles, you may begin to see yourself in a new light, and others will notice the change, too. Social actors hold the potential to transform their performances across the human life course. Each time you walk out on stage, you have a chance to start anew. [68]

The Motivated Agent

Whether we are talking literally about the theatrical stage or more figuratively, as I do in this module, about the everyday social environment for human behavior, observers can never fully know what is in the actor's head, no matter how closely they watch. We can see actors act, but we cannot know for sure what they **want** or what they **value** , unless they tell us straightaway. As a social actor, a person may come across as friendly and compassionate, or cynical and mean-spirited, but in neither case can we infer their motivations from their traits or their roles. What does the friendly person want? What is the cynical father trying to achieve? Many broad psychological theories of the self prioritize the motivational qualities of human behavior—the inner needs, wants, desires, goals, values, plans, programs, fears, and aversions that seem to give behavior its direction and purpose (Bandura, 1989; Deci & Ryan, 1991; Markus & Nurius, 1986). These kinds of theories explicitly conceive of the self as a **motivated agent** .

To be an agent is to act with direction and purpose, to move forward into the future in pursuit of self-chosen and valued goals. In a sense, human beings are agents even as infants, for babies can surely act in goal-directed ways. By age 1 year, moreover, infants show a strong preference for observing and imitating the goal-directed, intentional behavior of others, rather than random

behaviors (Woodward, 2009). Still, it is one thing to act in goal-directed ways; it is quite another for the I to know itself (the Me) as an intentional and purposeful force who moves forward in life in pursuit of self-chosen goals, values, and other desired end states. In order to do so, the person must first realize that people indeed have desires and goals in their minds and that these inner desires and goals **motivate** (initiate, energize, put into motion) their behavior. According to a strong line of research in developmental psychology, attaining this kind of understanding means acquiring a theory of mind (Wellman, 1993), which occurs for most children by the age of 4. Once a child understands that other people's behavior is often motivated by inner desires and goals, it is a small step to apprehend the self in similar terms. [68]

The Motivated Agent (Continued)

Building on theory of mind and other cognitive and social developments, children begin to construct the self as a motivated agent in the elementary school years, layered over their still-developing sense of themselves as social actors. Theory and research on what developmental psychologists call the age 5-to-7 shift converge to suggest that children become more planful, intentional, and systematic in their pursuit of valued goals during this time (Sameroff & Haith, 1996). Schooling reinforces the shift in that teachers and curricula place increasing demands on students to work hard, adhere to schedules, focus on goals, and achieve success in particular, well-defined task domains. Their relative success in achieving their most cherished goals, furthermore, goes a long way in determining children's self-esteem (Robins, Tracy, & Trzesniewski, 2008). Motivated agents feel good about themselves to the extent they believe that they are making good progress in achieving their goals and advancing their most important values.

Goals and values become even more important for the self in

adolescence, as teenagers begin to confront what Erikson (1963) famously termed the developmental challenge of identity. For adolescents and young adults, establishing a psychologically efficacious identity involves exploring different options with respect to life goals, values, vocations, and intimate relationships and eventually committing to a motivational and ideological agenda for adult life—an integrated and realistic sense of what I want and value in life and how I plan to achieve it (Kroger & Marcia, 2011). Committing oneself to an integrated suite of life goals and values is perhaps the greatest achievement for the self as motivated agent. Establishing an adult identity has implications, as well, for how a person moves through life as a social actor, entailing new role commitments and, perhaps, a changing understanding of one's basic dispositional traits. According to Erikson, however, identity achievement is always provisional, for adults continue to work on their identities as they move into midlife and beyond, often relinquishing old goals in favor of new ones, investing themselves in new projects and making new plans, exploring new relationships, and shifting their priorities in response to changing life circumstances (Freund & Riediger, 2006; Josselson, 1996).

There is a sense whereby any time you try to change yourself, you are assuming the role of a motivated agent. After all, to strive to change something is inherently what an agent does. However, what particular feature of selfhood you try to change may correspond to your self as actor, agent, or author, or some combination. When you try to change your traits or roles, you take aim at the social actor. By contrast, when you try to change your values or life goals, you are focusing on yourself as a motivated agent. Adolescence and young adulthood are periods in the human life course when many of us focus attention on our values and life goals. Perhaps you grew up as a traditional Catholic, but now in college you believe that the values inculcated in your childhood no longer function so well for you. You no longer believe in the central tenets of the Catholic Church, say, and are now working to replace your old values with new ones. Or maybe you still want to be Catholic, but you feel that your new take

on faith requires a different kind of personal ideology. In the realm of the motivated agent, moreover, changing values can influence life goals. If your new value system prioritizes alleviating the suffering of others, you may decide to pursue a degree in social work, or to become a public interest lawyer, or to live a simpler life that prioritizes people over material wealth. 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. [68]

The Autobiographical Author

Even as the "I" continues to develop a sense of the "Me" as both a social actor and a motivated agent, a third standpoint for selfhood gradually emerges in the adolescent and early-adult years. The third perspective is a response to Erikson's (1963) challenge of identity. According to Erikson, developing an identity involves more than the exploration of and commitment to life goals and values (the self as motivated agent), and more than committing to new roles and re-evaluating old traits (the self as social actor). It also involves achieving a sense of **temporal continuity** in life—a reflexive understanding of **how I have come to be the person I am becoming** , or put differently, how my past self has developed into my present self, and how my present self will, in turn, develop into an envisioned future self. In his analysis of identity formation in the life of the 15th-century Protestant reformer Martin Luther, Erikson (1958) describes the culmination of a young adult's search for identity in this way:

> "To be adult means among other things to see one's own life in continuous perspective, both in retrospect and prospect. By accepting some definition of who he is, usually on the basis of a function in an economy, a place in the sequence

of generations, and a status in the structure of society, the adult is able **to selectively reconstruct his past in such a way that, step for step, it seems to have planned him, or better, he seems to have planned it** . In this sense, psychologically we do choose our parents, our family history, and the history of our kings, heroes, and gods. By making them our own, we maneuver ourselves into the inner position of proprietors, of creators." —(Erickson, 1958, pp. 111-112; emphasis added).

In this rich passage, Erikson intimates that the development of a mature identity in young adulthood involves the "I's" ability to construct a retrospective and prospective **story** about the "Me" (McAdams, 1985). In their efforts to find a meaningful identity for life, young men and women begin "to selectively reconstruct" their past, as Erikson wrote, and imagine their future to create an integrative life story, or what psychologists today often call a narrative identity. A narrative identity is an internalized and evolving story of the self that reconstructs the past and anticipates the future in such a way as to provide a person's life with some degree of unity, meaning, and purpose over time (McAdams, 2008; McLean, Pasupathi, & Pals, 2007). The self typically becomes an **autobiographical author** in the early-adult years, a way of being that is layered over the motivated agent, which is layered over the social actor. In order to provide life with the sense of temporal continuity and deep meaning that Erikson believed identity should confer, we must author a personalized life story that integrates our understanding of who we once were, who we are today, and who we may become in the future. The story helps to explain, for the author and for the author's world, why the social actor does what it does and why the motivated agent wants what it wants, and how the person as a whole has developed over time, from the past's reconstructed beginning to the future's imagined ending. [68]

The Autobiographical Author (Continued)

By the time children are 5 or 6 years of age, they can tell well-formed stories about personal events in their lives (Fivush, 2011). By the end of childhood, they usually have a good sense of what a typical biography contains and how it is sequenced, from birth to death (Thomsen & Bernsten, 2008). But it is not until adolescence, research shows, that human beings express advanced storytelling skills and what psychologists call autobiographical reasoning (Habermas & Bluck, 2000; McLean & Fournier, 2008). In autobiographical reasoning, a narrator is able to derive substantive conclusions about the self from analyzing his or her own personal experiences. Adolescents may develop the ability to string together events into causal chains and inductively derive general themes about life from a sequence of chapters and scenes (Habermas & de Silveira, 2008). For example, a 16-year-old may be able to explain to herself and to others how childhood experiences in her family have shaped her vocation in life. Her parents were divorced when she was 5 years old, the teenager recalls, and this caused a great deal of stress in her family. Her mother often seemed anxious and depressed, but she (the now-teenager when she was a little girl—the story's protagonist) often tried to cheer her mother up, and her efforts seemed to work. In more recent years, the teenager notes that her friends often come to her with their boyfriend problems. She seems to be very adept at giving advice about love and relationships, which stems, the teenager now believes, from her early experiences with her mother. Carrying this causal narrative forward, the teenager now thinks that she would like to be a marriage counselor when she grows up.

Young people often "try on" many variations of identities to see which best fits their private sense of themselves. Unlike children, then, adolescents can tell a full and convincing story about an entire human life, or at least a prominent line of causation within a full life, explaining continuity and change in the story's protagonist over

time. Once the cognitive skills are in place, young people seek interpersonal opportunities to share and refine their developing sense of themselves as storytellers (the I) who tell stories about themselves (the Me). Adolescents and young adults author a narrative sense of the self by telling stories about their experiences to other people, monitoring the feedback they receive from the stories, editing their stories in light of the feedback, gaining new experiences and telling stories about those, and on and on, as selves create stories that, in turn, create new selves (McLean et al., 2007). Gradually, in fits and starts, through conversation and introspection, the "I" develops a convincing and coherent narrative about the "Me." [68]

37. Journal and Wiki Assignments: Emotional and Self Development

Module 5 Journal Assignment

This journal assignment aligns with Learning Outcome 1.

The purpose of this assignment is to apply course material to your own development. This will allow you to better appreciate how the information that we learn in this course relates to everyday life.

Journal Instructions

This week we learned about the development of self and identity. We also learned about the role of culture in development. How is your self-esteem? What is your work, ethnic, and gender identity? Conduct a Google search for "self-esteem quiz" and "identity quiz". Take a few free quizzes regarding these topics. Then, write a reflection journal examining what in your development has influenced where you are currently at with your self-esteem and identity. Include a cultural component in your reflection. Only share what you are comfortable sharing.

The journal should show evidence of self-reflection, be free of writing mechanic issues, and provide references in APA format. This assignment is worth 75 points. Please refer to the rubric below for specific requirements for this journal. [1]

Module 5 Wiki Assignment

This Wiki assignment aligns with Learning Outcome 1.

Purpose

Collaboration is important for learning. In this course, we will use our class Wiki as a way to collaborate. Our Wiki page will allow us to meet asynchronously. We can share all types of files. It will allow us to learn from each other and the resources that we find.

Wiki Collaboration Instructions

The Wiki page has been set up to be open 24/7. This means that you can work whenever you want to. Your mission is to find a course related resource for module six and share it. You should briefly describe the resource and explain how it is related to module six and the milestones achieved in the social development domain. The same resource cannot be shared more than once — so checkout what is already posted. The research can be a website, blog, YouTube video, TedTalk, research article, news article, SlideShare, PowerPoint, or Pinterest board, you get the idea. In addition to posting a resource, you must also say what two other resources posted by your peers you found most educational and why by commenting on their posts. All work should be free of writing mechanic issues. This assignment is worth 75 points. [1]

MODULE 6: SOCIAL DEVELOPMENT

38. Play, Leisure, and Peer Relationships

Play and Leisure

What would childhood be without time to play? Play, it turns out, is essential to growing up healthy. Research shows that active, creative play benefits just about every aspect of child development.

Play

"Play is behavior that looks as if it has no purpose," says NIH psychologist Dr. Stephen Suomi. "It looks like fun, but it actually prepares for a complex social world." Evidence suggests that play can help boost brain function, increase fitness, improve coordination and teach cooperation.

Suomi notes that all mammals—from mice to humans—engage in some sort of play. His research focuses on rhesus monkeys. While he's cautious about drawing parallels between monkeys and people, his studies offer some general insights into the benefits of play.

Active, vigorous social play during development helps to sculpt the monkey brain. The brain grows larger. Connections between brain areas may strengthen. Play also helps monkey youngsters learn how to fit into their social group, which may range from 30 to 200 monkeys in 3 or 4 extended families.

Both monkeys and humans live in highly complex social structures, says Suomi. "Through play, rhesus monkeys learn to negotiate, to deal with strangers, to lose gracefully, to stop before

things get out of hand, and to follow rules," he says. These lessons prepare monkey youngsters for life after they leave their mothers.

Play may have similar effects in the human brain. Play can help lay a foundation for learning the skills we need for social interactions.

If human youngsters lack playtime, says Dr. Roberta Golinkoff, an infant language expert at the University of Delaware, "social skills will likely suffer. You will lack the ability to inhibit impulses, to switch tasks easily and to play on your own." Play helps young children master their emotions and make their own decisions. It also teaches flexibility, motivation and confidence.

Kids don't need expensive toys to get a lot out of playtime. "Parents are children's most enriching plaything," says Golinkoff. Playing and talking to babies and children are vital for their language development. Golinkoff says that kids who talk with their parents tend to acquire a vocabulary that will later help them in school. "In those with parents who make a lot of demands, language is less well developed," she says. The key is not to take over the conversation, or you'll shut it down.

Unstructured, creative, physical play lets children burn calories and develops all kinds of strengths, such as learning how the world works. In free play, children choose the games, make the rules, learn to negotiate and release stress. Free play often involves fantasy. If children, say, want to learn about being a fireman, they can imagine and act out what a fireman does. And if something scary happens, free play can help defuse emotions by working them out.

> "Sports are a kind of play, but it's not the kids calling the shots," says Golinkoff. It's important to engage in a variety of activities, including physical play, social play and solitary play. "The key is that in free play, kids are making the decisions," says Golinkoff. You can't learn to make decisions if you're always told what to do. [71]

Play and Leisure (Continued)

Some experts fear that free play is becoming endangered. In the last 2 decades, children have lost an average of 8 hours of free play per week. As media screens draw kids indoors, hours of sitting raise the risk for obesity and related diseases. When it comes to video games and other media, parents should monitor content, especially violent content, and limit the amount of time children sit.

There's also been a national trend toward eliminating school recess. It's being pushed aside for academic study, including standardized test preparation. "Thousands of children have lost recess altogether," says child development expert Dr. Kathryn Hirsh-Pasek of Temple University. "Lack of recess has important consequences for young children who concentrate better when they come inside after a break from the schoolwork."

Many kids, especially those in low-income areas, lack access to safe places to play. This makes their school recess time even more precious. In response to these changes, some educators are now insisting that preschool and elementary school children have regular periods of active, free play with other children. The type of learning that happens during playtime is not always possible in the classroom. School recess is also important because of the growing number of obese children in the United States. Running around during recess can help kids stay at a healthy weight.

Play also may offer advantages within the classroom. In an NIH-funded study, Hirsh-Pasek, Golinkoff and their colleagues found a link between preschoolers' math skills and their ability to copy models of 2- and 3-dimensional building-block constructions. Play with building blocks—and block play alongside adults—can help build children's spatial skills so they can get an early start toward the later study of science, technology, engineering or math.

"In a way, a child is becoming a young scientist, checking out how the world works," says Hirsh-Pasek. "We never outgrow our need to play." Older children, including teens, also need to play

and daydream, which helps their problem-solving and creative imagination. Adults, too, need their breaks, physical activity and social interaction.

Medical Play

At the NIH Clinical Center in Bethesda, Maryland, "Recreation therapy services are seen as essential to the patients' recovery," says Donna Gregory, chief of recreational therapy. She and her team tailor activities for both children and adults. Games can get patients moving, even for just minutes at a time, which improves their functioning.

Medical play helps children cope with invasive procedures. A 2-year-old can be distracted with blowing bubbles; older kids can place their teddy bear in the MRI machine or give their doll a shot before they themselves get an injection. It gives kids a sense of control and supports their understanding in an age-appropriate, meaningful way.

Without play and recreation, people can become isolated and depressed. "There's therapeutic value in helping patients maintain what's important to them," says Gregory. "When you are physically and socially active, it gives life meaning." [71]

Peer Relationships

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 conflict, such as turn-taking, compromise, and bargaining. Play also involves the mutual, sometimes complex, coordination of goals, actions, and understanding. For example, as infants, children get their first encounter with sharing (of each other's toys); during pretend play as preschoolers they create narratives together, choose roles, and collaborate to act out their stories; and in primary school, they may join a sports team, learning to work together and support each other emotionally and strategically toward a common goal. Through these experiences, children develop friendships that provide additional sources of security and support to those provided by their parents.
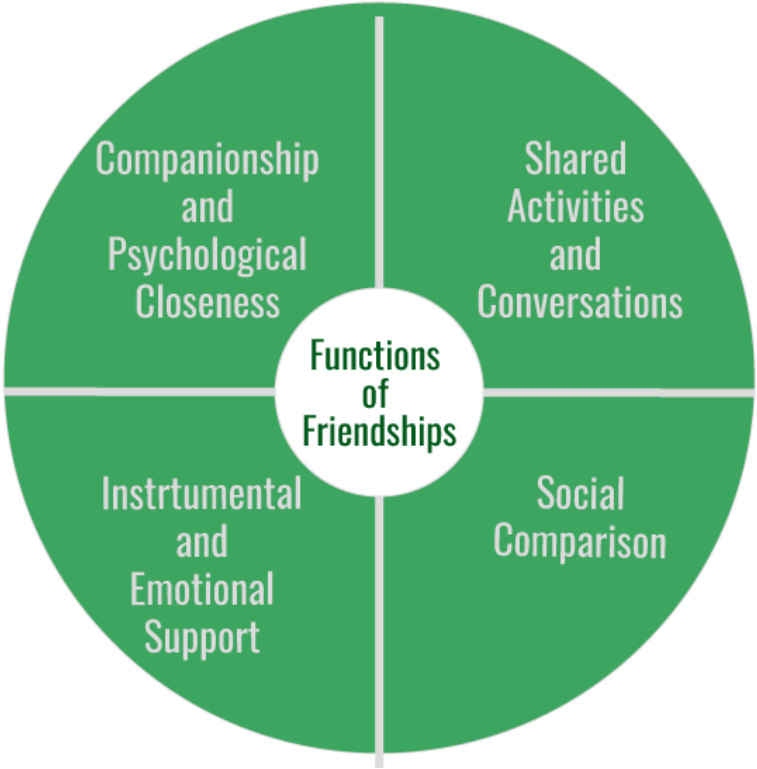
Figure 8-2: Functions of Friendship by Florida State College at Jacksonville is licensed under CC-BY 4.0 .

Peer relationships are particularly important for children. They can be supportive but also challenging. Peer rejection may lead to behavioral problems later in life.

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 important source of affirmation and self-esteem, but 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 doesn't "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. (69)

Sociometric Peer Status

As we know, kids tend to form peer groups during middle school and high school. Being part of the various groups, referred to

as **sociometric status** . The table below lists the peer groups and outcomes most commonly studied. [1]
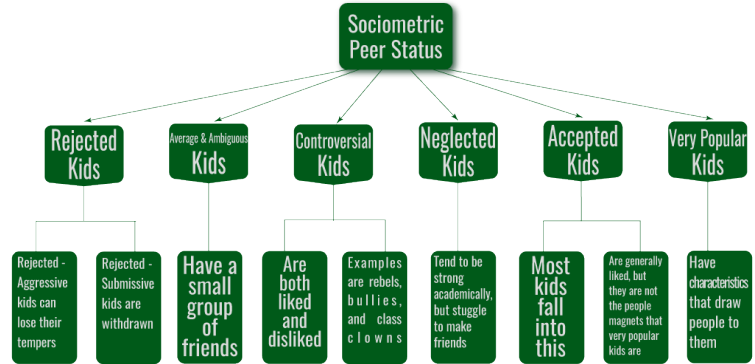

Figure 8-3: Sociometric Peer Status by Florida State College at Jacksonville is licensed under CC-BY 4.0 .

39. About This Module: Social Development

Introduction

What is gender? Isn't that the same thing as sex? Well, no, not exactly. Gender refers to the socially-constructed aspects of maleness and femaleness. In this module, you will learn more about the ways in which gender, gender roles & stereotypes, and sexuality influence children's development. For example, is there a benefit to being a female with a higher than average level of psychological masculinity (i.e., 'masculine' personality traits such as competitiveness, independence, confidence, assertiveness, etc.)? How do we develop the fundamental sense of being male or female (gender identity)? What does it mean to have masculine and feminine traits psychologically (androgyny)? And how is sexual orientation different from gender identity? There are many fascinating aspects to this topic. You will learn about the socialization of gender and how children come to know their gender, as well as main theories about gender. Hopefully, by the end the module, you may have a better understanding of how gender forces – both social and biological – have shaped who you have become.

Psychologists who study moral development are not particularly interested in one particular set of morals over another (i.e., Catholic morals versus Jewish morals). Rather, psychologists are interested in how children develop their own personal sense of right and wrong – a moral code, if you will. Additionally, psychologists are also interested in what makes some children more prosocial than others – more helpful, more giving, more self-sacrificing for others. It seems that almost every major world religion places a high moral

and spiritual value on prosocial behaviors, even though religions may have differences on other issues of morality.

Who's more important to your development – your parents or your friends? Well, that's kind of trick question. In reality, the answer to that question really depends on a lot of factors, but none more important than your age. You'll see in this module that friends are not important early on – in fact, very young children don't have friendships with each other until about 4-5 years of age, and even then, they do not spend much time together. Parents usually remain very important in the child's mind throughout childhood (barring some unusual circumstance like extreme abuse). As you read through the material, try to ascertain what parenting style you grew up with, the types of methods that your parents used, and how you might have been shaped. Siblings, our first friends, are also a big influence on us. [1]

Learning Outcome

1.   Students will be able to describe the field of child and adolescent psychology,including the main theories, research methods, and principles of development.
2.   Students will be able to summarize prenatal development and the major hazards/complications that may be encountered during prenatal development and birth.
3.   Students will be able to explain the important milestones encountered within the biological/physical, cognitive and socioemotional domains from infancy throughout adolescence. [1]

Objectives

Upon completion of this module, the student will be able to:

- Describe the importance of play to development.
- Discuss how parents can support moral development in children.
- Explain how peers and schools contribute to one's social development.
- Explicate Kohlberg's stages of moral development. [1]

Readings

Online Learning Units

40. Unit 8: Social Development - Foundations of Child and Adolescent Psychology

Social Understanding

As we have seen, children's experience of relationships at home and the peer group contributes to an expanding repertoire of social and emotional skills and also to broadened social understanding. In these relationships, children develop expectations for specific people (leading, for example, to secure or insecure attachments to parents), understanding of how to interact with adults and peers, and developing self-concept based on how others respond to them. These relationships are also significant forums for emotional development.

Remarkably, young children begin developing social understanding very early in life. Before the end of the first year, infants are aware that other people have perceptions, feelings, and other mental states that affect their behavior, and which are different from the child's own mental states. This can be readily observed in a process called social referencing, in which an infant looks to the mother's face when confronted with an unfamiliar person or situation (Feinman, 1992). If the mother looks calm and reassuring, the infant responds positively as if the situation is safe. If the mother looks fearful or distressed, the infant is likely to respond with wariness or distress because the mother's expression signals danger. In a remarkably insightful manner, therefore, infants show an awareness that even though they are uncertain about the

unfamiliar situation, their mother is not, and that by "reading" the emotion in her face, infants can learn about whether the circumstance is safe or dangerous, and how to respond.

Although developmental scientists used to believe that infants are egocentric—that is, focused on their own perceptions and experience—they now realize that the opposite is true. Infants are aware at an early stage that people have different mental states, and this motivates them to try to figure out what others are feeling, intending, wanting, and thinking, and how these mental states affect their behavior. They are beginning, in other words, to develop a theory of mind, and although their understanding of mental states begins very simply, it rapidly expands (Wellman, 2011). For example, if an 18-month-old watches an adult try repeatedly to drop a necklace into a cup but inexplicably fail each time, they will immediately put the necklace into the cup themselves—thus completing what the adult intended, but failed, to do. In doing so, they reveal their awareness of the intentions underlying the adult's behavior (Meltzoff, 1995). Carefully designed experimental studies show that by late in the preschool years, young children understand that another's beliefs can be mistaken rather than correct, that memories can affect how you feel, and that one's emotions can be hidden from others (Wellman, 2011). Social understanding grows significantly as children's theory of mind develops.

How do these achievements in social understanding occur? One answer is that young children are remarkably sensitive observers of other people, making connections between their emotional expressions, words, and behavior to derive simple inferences about mental states (e.g., concluding, for example, that what Mommy is looking at is in her mind) (Gopnik, Meltzoff, & Kuhl, 2001). This is especially likely to occur in relationships with people whom the child knows well, consistent with the ideas of attachment theory discussed above. Growing language skills give young children words with which to represent these mental states (e.g., "mad," "wants") and talk about them with others. Thus in conversation with their parents about everyday experiences, children learn much about

people's mental states from how adults talk about them ("Your sister was sad because she thought Daddy was coming home.") (Thompson, 2006b). Developing social understanding is, in other words, based on children's everyday interactions with others and their careful interpretations of what they see and hear. There are also some scientists who believe that infants are biologically prepared to perceive people in a special way, as organisms with an internal mental life, and this facilitates their interpretation of people's behavior with reference to those mental states (Leslie, 1994). [69]

The Family

Parents are their children's first socializer. How parents choose to parent has a great impact as to how the child will function in the world. In general, children tend to thrive when parents have high (but reasonable) expectations for children's behavior, communicate well with them, are warm and responsive, and use reasoning (rather than coercion) as preferred responses to children's misbehavior. This kind of parenting style has been described as authoritative (Baumrind, 2013). Authoritative parents are supportive and show interest in their kids' activities, but are not overbearing and allow them to make constructive mistakes. Children raised by authoritative parents tend to have healthy self-esteem, self-confidence, and social skills. They also tend to have low rates of juvenile delinquency and mental illness throughout life. Because the parents are active in their life, the children tend to thrive academically.

By contrast, some less-constructive parent-child relationships result from authoritarian, uninvolved, or permissive parenting styles. [69]

Comparison of Four Parenting Styles

Figure 8-1: Comparison of Four Parenting Styles (Noba Project) by Ross Thompson is licensed under CC-BY-NC-SA 4.0 .

As you can see from Figure 8-1, a parent with rigid expectations and little affection has an **authoritarian** parenting style. Children raised by these types of parents tend to struggle with academics, self-esteem, and social skills. They also tend to have higher juvenile delinquency and mental illness rates in comparison to those raised by authoritative parents (4 Parenting Styles – Characteristics and Effects, 2018; Baumrind, 1972; Esmali Kooraneh & Amirsardari, 2015).

Parents that are affectionate, but do not provide structure or consequences to unacceptable behavior, are considered**permissive** parents. These parents prefer to be their children's friends, as opposed to a parent. This actually hurts the children as they benefit from having rules and having consequences when the rules are broken. In comparison to children raised by **authoritative** parents, children raised by permissive parents struggle with social skills, social responsibility, and self-control (4 Parenting Styles – Characteristics and Effects, 2018; Baumrind, 1972; Esmali Kooraneh & Amirsardari, 2015).

The final parenting style is referred to as **uninvolved** (originally referred to as rejecting-neglecting). These parents are emotionally disengaged from their children, sometimes being outright rejecting. They also fail to provide any structure or rules. These parents do not encourage children to be independent or develop their own identity. This parenting style is associated with very negative child outcomes; including, substance abuse, delinquency, poor self-control, and even suicide. (4 Parenting Styles – Characteristics and

Effects, 2018; Baumrind, 1972; Esmali Kooraneh & Amirsardari, 2015). [1]

Parental roles in relation to their children change in other ways, too. Throughout infancy and early childhood, parents increasingly become mediators (or gatekeepers) of their children's involvement with peers and activities outside the family. Their communication and practice of values contributes to children's academic achievement, moral development, and activity preferences.

During middle childhood, children spend less time with parents and more time with peers. And parents may have to modify their approach to parenting to accommodate the child's growing independence. Using reason and engaging in joint decision-making whenever possible may be the most effective approach (Berk, 2007). Children raised in this manner tend to be confident, successful and happy (Chao, 2001; Stewart and Bond, 2002). [69]

Family Tasks

One of the ways to assess the quality of family life is to consider the tasks of families.

Berger (2005) lists five family functions: Providing food, clothing and shelter

1. Encouraging Learning
2. Developing self-esteem
3. Nurturing friendships with peers
4. Providing harmony and stability

Notice that in addition to providing food, shelter, and clothing, families are responsible for helping the child learn, relate to others, and have a confident sense of self. The family provides a harmonious and stable environment for living. 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?

As children reach adolescence, the parent-child relationship increasingly becomes one of "coregulation," in which both the parent(s) and the child recognizes the child's growing competence and autonomy, and together they rebalance authority relations. We often see evidence of this as parents start accommodating their teenage kids' sense of independence by allowing them to get cars, jobs, attend parties, and stay out later.

Family relationships are significantly affected by conditions outside the home. For instance, the Family Stress Model describes how financial difficulties are associated with parents' depressed moods, which in turn lead to marital problems and poor parenting that contributes to poorer child adjustment (Conger, Conger, & Martin, 2010). Within the home, parental marital difficulty or divorce affects more than half the children growing up today in the United States. Divorce is typically associated with economic stresses for children and parents, the renegotiation of parent-child relationships (with one parent typically as primary custodian and the other assuming a visiting relationship), and many other significant adjustments for children. Divorce is often regarded by children as a sad turning point in their lives, although for most it is not associated with long-term problems of adjustment (Emery, 1999). [70]

41. Divorce, Repartnering, and Stepfamilies

Factors Affecting the Impact of Divorce

As you 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 a 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 own abilities and gain 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 a number of factors. The degree of conflict prior to the 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 great 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. [70]

Short-Term Consequences

In roughly the first year following divorce, children may exhibit some of these short-term effects:

1. **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.

2. **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've grown accustomed. Or it may mean that there is less eating out or being able to afford 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 can affect decisions regarding healthcare, vacations, rents, mortgages and other expenditures. And 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.

3. **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

Here are some effects that are found after the first year.

1. **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 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 economic status (Drexler, 2005).
2. **Improved Relationships with the Custodial Parent** (usually the mother): In the United States and Canada, children reside with the mother in 88 percent of single-parent households (Berk, 2007). 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).
3. **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.
4. **Feeling more anxious in their own love relationships.** Children of divorce may feel more anxious about their own relationships as adults. This may reflect a fear of

divorce if things go wrong, or it may be a result of setting higher expectations for their own relationships.

5. **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 may explain a good deal of the variation we find in children of divorce. Adults going though divorce should consider good self-care as beneficial to the children-not as self-indulgent.

Tips for Taking Care of the Self during Divorce

Here are some effects that are found after the first year:

1. Take care of your own mental health. Don't be a martyr. Do what is necessary to heal.
2. Allow children to grieve and express their feelings without becoming defensive. Give the child the freedom to express feelings and be supportive and neutral as they voice their emotions over the loss.
3. Try to have an amicable relationship with the ex-spouse and keep the children's best interests in mind.
4. Do not put-down or badmouth the ex-spouse. This puts the child in a very uncomfortable position. You don't have to hide the truth from them either, but they will uncover the truth on their own. Be neutral. Children want to love their parents, regardless of the circumstances.
5. Focus on establishing a comfortable, consistent healthy environment for the children as they adjust. [70]

Repartnering

Considerations

Dating as a single parent can pose certain challenges. Time and money are considerations. A single mother may not have time for dating and may not have the money needed for child-care while she is out. Children can also resent a parent taking time away to date. Parents may struggle with whether or not to introduce a date to the children or to demonstrate affection in front of the children. When a dating relationship becomes serious, a boyfriend or girlfriend might expect the parent to prove their concern for them above the children. This puts a parent in a very uncomfortable situation. Sometimes, this vying for attention does not occur until the couple begins to consider sharing a long-term relationship.

Repartnering refers to forming new, intimate relationships after divorce. This includes dating, cohabitation, and remarriage.

Parental Considerations about Cohabitation

Having time, money and resources to date can be difficult. And having privacy for a dating relationship can also be problematic. Divorced parents may cohabit as a result. Cohabitation involves living together in a sexually intimate relationship without being married. This can be difficult for children to adjust to because cohabiting relationships in the United States tend to be short-lived. About 50 percent last less than 2 years (Brown, 2000). The child who starts a relationship with the parent's live-in partner may have to sever this relationship later. And even in long-term cohabiting relationships, once it's over, continued contact with the child is rare. Further, young children are at a greater risk of being abused by a

non-biological male living in the home than if the biological father was still in the home.

Is Remarriage More Difficult than Divorce?

The remarriage of a parent may be a more difficult adjustment for a child than the divorce of a parent (Seccombe & Warner, 2004). Parents and children typically have different ideas of how the stepparent should act. Parents and stepparents are more likely to see the stepparent's role as that of parent. A more democratic style of parenting may become more authoritarian after a parent remarries. And biological parents are more likely to continue to be involved with their children jointly when neither parent has remarried. They are least likely to jointly be involved if the father has remarried and the mother has not. [70]

Characteristics of Stepfamilies

About 60 percent of divorced parents remarry within a few years (Berk, 2007). Largely due to high rates of divorce and remarriage, we have seen the number of stepfamilies in America grow considerably in the last 20 years although rates of remarriage are declining (Seccombe & Warner, 2004). Stepfamilies are not new. In the 1700-1800s there were many stepfamilies, but they were created because someone died and remarried. Most stepfamilies today are a result of divorce and remarriage.

And such origins lead to new considerations. Stepfamilies are different from intact families and more complex in a number of ways that can pose unique challenges to those who seek to form successful stepfamily relationships (Visher & Visher, 1985). Stepfamilies are also known as blended families and stepchildren as

"bonus children" by social scientists interested in emphasizing the positive qualities of these families.

Click on each box for information.

Blended Families

1. Stepfamilies have a biological parent outside the stepfamily and a same sex adult in the family as natural parent. This can lead to animosity on part of a rejecting child. This can also lead to confusion on part of stepparent as to what their role is within the family.

2. Child may be a part of two households, each with different rules.

3. Members may not be as sure that others care and may require more demonstrations of affection for reassurance. For example, stepparents expect more gratitude and acknowledgment from the stepchild than they would with a biological child. Stepchildren experience more uncertainty/ insecurity in their relationship with the parent and fear the parents will see them as sources of tension. And stepparents may feel guilty for a lack of feelings they may initially have toward their partner's children. Children who are required to respond to the parent's new mate as though they were the child's "real" parent often react with hostility, rebellion, or withdrawal. Especially if there has not been time for the relationship to develop.

4. Stepfamilies are born of loss. Members may have lost a home, a neighborhood, family members or at least their dream of how they thought life would be. These losses must be acknowledged and mourned. Remarriage quickly after a divorce makes expressing grief more difficult. Family members are looking for signs that all is well at the same time that members are experiencing grief over losses.

5. Stepfamilies are structurally more complex. There are lots of triangles and lots of ways to divide and conquer the new couple.
6. Sexual attractions are more common in stepfamilies. Members have not grown up together and sexual attractions need to be understood, and controlled. Also a new couple may need to tone down sexual displays when around the children (can bring on jealousy, etc.) until there is greater acceptance of the new partner.

Sociologist Andrew Cherlin suggests that one reason people remarry is because divorce is so socially awkward. There are no clear guidelines for family or friends, how to treat divorcees, etc. As a result, people remarry to avoid this "displacement." The problem is that remarriage is similarly ill-defined. This is reflected in the lack of language to support the institution of remarriage. What does one call their stepparent? Who is included when thinking of "the family"? For couples with joint custody, where is "home"? And there are few guidelines about how ex-spouses and new spouses or other kin should interact. This is especially an issue when children are involved.

In light of this incompleteness, here are some tips for those in stepfamilies. Most of these tips are focused on the stepparent. These come from an article entitled "The Ten Commandments of Step parenting" by Turnbull and Turnbull.

Tips for Stepfamilies

1. Provide neutral territory. If there is a way to do so, relocate the new family in a new, more neutral home. Houses have histories and there are many memories attached to family homes. This territoriality can cause resentments.
2. Don't try to fit a preconceived role. Stepparents need to realize

that they cannot just walk into a situation and expect to fill a role. They need to stay in tuned with what works in this new family rather than being dogmatic about their new role.

3. Set limits and enforce them. Don't allow children to take advantage of the parent's guilt or adjustment by trying to gain special privileges as a result of the change. Limits provide security, especially if they are reasonable limits.

4. Allow an outlet for feelings by the children for their natural parent. This tip is for the natural parent. Avoid the temptation to "encourage" the child to go against your ex-spouse. Instead, remain neutral when comments are made.

5. Expect ambivalence, not instant love. Stepparents need to realize that their acceptance has to be earned, and sometimes it is long in coming. The relationship has to be given time to grow. Trust has to be established. One day they may be loved, the next, hated. Adjustment takes time. [70]

Developmental Stages of Stepfamilies

Stepfamilies go through periods of adjustments and developmental stages that take about 7 years for completion (Papernow, 1993). The early stages of stepfamily adjustment include periods of fantasy in which members may hope for immediate acceptance. This is followed by the immersion stage in which children have to adjust to their parent's date being transformed into a new stepfather or stepmother. This acceptance can be accompanied by a sense of betrayal toward the natural parent on the part of the children. The awareness stage involves members beginning to become aware of how they feel in the family and taking steps to map out their territory. Children may begin to feel as if they've been set aside for other family members and the couple may begin to focus their attention toward one another. Biological parents may feel resentful.

The middle stages include mobilization, in which family members

begin to recognize their differences. Stepparents may be less interested in pleasing family members and more interested in taking a stand and being respected as family members. Children may start to voice their frustrations at being pulled in different directions by biological and stepparents. The next step is that of taking action. Now step-couples and stepparents begin to reorganize the family based on more realistic expectations and understandings of how members feel.

The later stages include contact between stepfamily members that is more intimate and genuine. A clearer role for the stepparent emerges. Finally, the stepfamily seems to have more security and stability than ever before. [70]

42. Bullying

Bullying

What Is 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.

Types of Bullying

Verbal bullying: saying or writing mean things. Verbal bullying includes:

- Teasing
- Name-calling
- Inappropriate sexual comments
- Taunting
- Threatening to cause harm

Social bullying: sometimes referred to as relational bullying, involves hurting someone's reputation or relationships. Social bullying includes:

- Leaving someone out on purpose
- Telling other children not to be friends with someone
- Spreading rumors about someone
- Embarrassing someone in public

Physical bullying: hurting a person's body or possessions. Physical bullying includes:

- Hitting, kicking, or pinching
- Spitting
- Tripping or pushing
- Taking or breaking someone's things
- Making mean or rude hand gestures

Where and When Bullying Happens

Bullying can occur during or after school hours. While most reported bullying happens in the school building, a significant

percentage also happens in places like on the playground or the bus. It can also happen travelling to or from school, in the youth's neighborhood, or on the Internet. [72]

Frequency of Bullying

There are two sources of federally collected data on youth bullying:

- The 2014–2015 Student Reports of Bullying (National Center for Education Statistics and Bureau of Justice Statistics) indicates that, nationwide, about 21% of students ages 12-18 experienced bullying.
- The 2015 Youth Risk Behavior Surveillance System (Centers for Disease Control and Prevention) indicates that, nationwide, 20% of students in grades 9–12 report being bullied on school property in the 12 months preceding the survey. [72]

The Roles Kids Play in Bullying

There are many roles that kids can play. Kids can bully others, they can be bullied, or they may witness bullying. When kids are involved in bullying, they often play more than one role. Sometimes kids may both be bullied and bully others or they may witness other kids being bullied. It is important to understand the multiple roles kids play in order to effectively prevent and respond to bullying.

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 child's behavior cannot change
- Fail to recognize the multiple roles children might play in different bullying situations
- Disregard other factors contributing to the behavior such as peer influence or school climate

Instead of labeling the children involved, focus on the behavior. For instance:

- Instead of calling a child a "bully," refer to them as "the child who bullied"
- Instead of calling a child a "victim," refer to them as "the child who was bullied"
- Instead of calling a child a "bully/victim," refer to them as "the child who was both bullied and bullied others."

Kids Involved in Bullying

The roles kids 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:

- **Kids who Bully** : These children engage in bullying behavior towards their peers. There are many risk factors that may contribute to the child's involvement in the behavior. Often, these students require support to change their behavior and address any other challenges that may be influencing their behavior.

- **Kids who are Bullied** : These children are the targets of bullying behavior. Some factors put children at more risk of being bullied, but not all children with these characteristics will be bullied. Sometimes, these children may need help learning how to respond to bullying.

Kids Who Witness Bullying

Even if a child is not directly involved in bullying, they may be contributing to the behavior. Witnessing the behavior may also affect the child, so it is important for them to learn what they should do when they see bullying happen. Roles kids play when they witness bullying include:

- **Kids who Assist** : These children may not start the bullying or lead in the bullying behavior, but serve as an "assistant" to children who are bullying. These children may encourage the bullying behavior and occasionally join in.
- **Kids who Reinforce** : These children are not directly involved in the bullying behavior but they give the bullying an audience. They will often laugh or provide support for the children who are engaging in bullying. This may encourage the bullyingto continue.
- **Outsiders** : These children remain separate from the bullying situation. They neither reinforce the bullying behavior nor defend the child 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 the bullying behavior.

  ◦ These kids often want to help, but don't know how. Learn how to be "more than a bystander."
- **Kids who Defend** : These children actively comfort the child being bullied and may come to the child's defense when

bullying occurs.

Most kids 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 and 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 negative outcomes, such as depression or suicidal ideation.
- It highlights the need to engage all kids in prevention efforts, not just those who are known to be directly involved.[73]

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.

Children at Risk of Being Bullied

Generally, children who are bullied have one or more of the following risk factors:

- 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 perceived as weak or unable to defend themselves
- Are depressed, anxious, or have low self esteem
- Are less popular than others and have few friends
- Do not get along well with others, seen as annoying or provoking, or antagonize others for attention

However, even if a child has these risk factors, it doesn't mean that they will be bullied.

Children More Likely to Bully Others

There are two types of kids who are more likely to bully others:

- Some are well-connected to their peers, have social power, are overly concerned about their popularity, and like to dominate or be in charge of others.
- 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.

Children who have these factors are also more likely to bully others:

- Are aggressive or easily frustrated
- Have less parental involvement or having issues at home
- Think badly of others
- Have difficulty following rules
- View violence in a positive way
- Have friends who bully others

Remember, those who bully others do not need to be stronger or bigger than those they bully. The power imbalance can come from a number of sources—popularity, strength, cognitive ability—and

children who bully may have more than one of these characteristics. [74]

Warning Signs for 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 important 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 a Child Is 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
- Lost or destroyed clothing, books, electronics, or jewelry
- Frequent headaches or stomach aches, feeling sick or faking illness
- Changes in eating habits, like suddenly skipping meals or binge eating. Kids may come home from school hungry because they did not eat lunch.
- Difficulty sleeping or frequent nightmares

Signs a Child is Bullying Others

Kids may be bullying others if they:

- Get into physical or verbal fights
- Have friends who bully others
- Are increasingly aggressive
- Get sent to the principal's office or to detention frequently
- 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 don't tell adults for many reasons:

- 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.
- Kids may fear being rejected by their peers. Friends can help protect kids from bullying, and kids can fear losing this support. [75]

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.
- Health complaints.
- Decreased academic achievement—GPA and standardized test scores—and school participation. They are more likely to miss, skip, or drop out of school.

A very small number of bullied children 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.
- Get into fights, vandalize property, and drop out of school.
- Engage in early sexual activity.
- Have criminal convictions and traffic citations as adults.
- Be abusive toward their romantic partners, spouses, or children as adults.

Bystanders

Kids who witness bullying are more likely to:

- Have increased use of tobacco, alcohol, or other drugs.
- Have increased mental health problems, including depression and anxiety.
- Miss or skip school.

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. [76]

43. Cyberbullying

What Is 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.

The most common places where cyberbullying occur are:

- Social Media, such as Facebook, Instagram, Snapchat, and Twitter.
- SMS (Short Message Service) also known as Text Message sent through devices.
- Instant Message (via devices, email provider services, apps, and social media messaging features).
- Email

Special Concerns

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.

Laws and Sanctions

While all states have criminal laws that apply to bullying, not all have special statutes that apply to cyberbullying or bullying that takes place outside of school. Schools may take action either as required by law, or with local or school policies that allow them to discipline or take other action. Some states also have provisions to address bullying if it affects school performance. You can learn about the laws and policies in each state, including if they cover cyberbullying. [77]

Cyberbullying Tactics

It is important to understand how children are cyberbullied so it can be easily recognized and action can be taken. Some of the most common cyberbullying tactics include:

- Posting comments or rumors about someone online that are mean, hurtful, or embarrassing.
- Threatening to hurt someone or telling them to kill themselves.
- Posting a mean or hurtful picture or video.
- Pretending to be someone else online in order to solicit or post personal or false information about someone else.
- Posting mean or hateful names, comments, or content about any race, religion, ethnicity, or other personal characteristics online.
- Creating a mean or hurtful webpage about someone.
- Doxing, an abbreviated form of the word documents, is a form of online harassment used to exact revenge and to threaten and destroy the privacy of individuals by making their personal information public, including addresses, social security, credit card and phone numbers, links to social media accounts, and other private data. [78]

Viral Tactics: Examples

Because cyberbullying can happen in different ways, examples based on real-life experiences can provide a deeper understanding of the tactics typically used. Along with other risk factors, bullying can increase the risk for suicide-related behaviors. Furthermore, cyberbullying can be relentless, increasing the likelihood of anxiety and depression. Some states have chosen to prosecute young people who bully for criminal harassment, including encouraging someone to die by suicide. Some forms of cyberbullying are forms

of harassment that cross the line into criminal activity, and some tactics occur in dating relationships and can turn into interpersonal violence.

The stories below are examples of different cyberbullying tactics that could happen. In reality, with the right interventions, cyberbullying can be addressed positively to lessen harm and the negative outcomes that could result. When not addressed, cyberbullying can have long-term mental health effects. Cyberbullying and bullying can negatively impact the lives of all who are involved.

Cyberbullying Stories

Click on each box for information.

Nude Photo Sharing

A teenage girl sent a nude photo of herself to her boyfriend while they were dating. After they broke up, he shared the photo with other children, who then called her hurtful, derogatory names via text and social media.

Lies and False Accusations

A group of students got into trouble at school for being drunk, and accused a girl who knew nothing about it of reporting them to school officials. They began texting her day and night, and posted hateful, derogatory messages on social media. Other students saw their messages and joined in harassing the girl. She was bullied constantly via text, and in person at school. She eventually shut

down her social media accounts and changed her phone number. Still, the bullying at school continued.

Bullied for Being Economically Challenged

Students posted mean, negative comments on another classmates' social media account, commenting on his clothes and sneakers, which were not the more expensive name brands most of them were wearing. They ridiculed him, calling him "poor" and continued the bullying in school. The boy missed many days of school trying to avoid the harassment and embarrassment.

False Identity Profile

A girl's classmate created a fake social media account in a boy's name, and began an online relationship with her. Though she had not met him in person, the girl divulged personal information about herself and her family to this "boy". The classmate who created the fake account then shared the personal information with other children, who used it to bully, shame, and harass the girl.

Encouraging Self-Harm or Suicide

A young boy with a physical disability and scars on his face was harassed on social media and via text by other students. They called him derogatory names, told him he'd be better off dead. They wrote, "why don't you die?" on his school locker and encouraged him to take his own life.

Bullied for Being Gay

A teenage boy who was openly gay began receiving death threats via phone, text, and social media for being gay. Students created an anti-gay social media group and harassed him, posting hateful messages about him.

Jealousy Bullying

A teenage girl was harassed by other girls in her class for dating a very popular boy. The girls sent her hateful messages via text and social media, and wrote derogatory messages on her school locker.

Doxing Over Online Gaming

A teenage boy posted comments on a public gaming forum, expressing his dislike of certain game features and tactics. Another user disagreed with him in the forum, then searched for the boy's information online and posted his address, email address, and social media links in another comment. The boy then received multiple emails and messages from strangers threatening to come to his home and assault him, and to block him from games. [78]

Prevent Cyberbullying

Be Aware of What Kids are Doing Online

A child may be involved in cyberbullying in several ways. A child can be bullied, bully others, or witness bullying. Parents, teachers,

and other adults may not be aware of all the digital media and apps that a child is using. The more digital platforms that a child uses, the more opportunities there are for being exposed to potential cyberbullying.

Warning Signs a Child is Being Cyberbullied or is Cyberbullying Others

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 child may be involved in cyberbullying are:

- Noticeable increases or decreases in device use, including texting.
- A child exhibits emotional responses (laughter, anger, upset) to what is happening on their device.
- A child hides their screen or device when others are near, and avoids discussion about what they are doing on their device.
- Social media accounts are shut down or new ones appear.
- A child starts to avoid social situations, even those that were enjoyed in the past.
- A child becomes withdrawn or depressed, or loses interest in people and activities.

What to Do When Cyberbullying Happens

If you notice warning signs that a child may be involved in cyberbullying, take steps to investigate that child's digital behavior. Cyberbullying is a form of bullying, and adults should take the same approach to address it: support the child being bullied, address the bullying behavior of a participant, and show children that cyberbullying is taken seriously. Because cyberbullying happens

online, responding to it requires different approaches. If you think that a child is involved in cyberbullying, there are several things you can do:

- **Notice** : 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.
- **Talk** : Ask questions to learn what is happening, how it started, and who is involved.
- **Document** : Keep a record of 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** : Most social media platforms and schools have clear policies and reporting processes. If a classmate is cyberbullying, report it the school. You can also contact app or social media platforms to report offensive content and have it removed. If a child has received physical threats, or if a potential crime or illegal behavior is occurring, report it to the police.
- **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 your 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. [79]

Kids on Social Media and Gaming

Social Media Apps and Sites Commonly Used by Children and Teens

Digital media and apps allow children to communicate and express their creativity, connect with peers, and share their feelings. However, they can be an avenue through which cyberbullying occurs. There are many types of apps and sites available for free that give users the ability to search for people and share or post information about them anonymously.

Parents may not be aware of the apps that their children use regularly or may not be aware of the risks involved in using them. There are many ways that cyberbullying can be hidden in apps and sites, such as texts, videos, and web calls that disappear or do not appear on the device's call or text message logs.

Many apps also make it easy for users to access, view or participate in adult or harmful content. Privacy and location settings may make them more vulnerable to stalking, cyberbullying, exposure to adult content, or other dangers.

Popular Social Media Venues and Apps

- **Askfm** : A social networking site that allows users to ask other people questions, often anonymously.
- **Chatroulette** : There are over 20 different chat roulette sites that allow users to instantly connect via webcam and video chat. Sites typically pair the users randomly and instantly.
- **Facebook and Facebook Live** : The most commonly used social media site that is accessible on many different media platforms.

- **Instagram** : A photo and video sharing and networking site that connects users through other social networking sites (e.g., Facebook).
- **Kik:** Messaging app that allows users of all ages to contact others anonymously.
- **Line** : A messaging app that allows users to make free phone calls, leave voice messages, and text. Users can delete texts or chats from recipient's phone using a timer.
- **Musical.ly** : Users can post their own videos and view videos posted by others.
- **Reddit** : A site that stores social news, rates and evaluates web content, and discussion threads.
- **Sarahah** : An anonymous messaging app that allows users to send anonymous messages to people they may know.
- **Snapchat** : A photo messaging app that allows for sharing pictures and short videos that are intended to be erased shortly after delivery.
- **Telegram** : Messaging app that allows users to share photos, videos, and files; make calls, and delete texts or chats from recipient's phone using a timer.
- **Tumblr** : A social networking site that allows posting of short blogs and media.
- **Twitter** : A microblogging site that allows users to send, read, and reply to "tweets" or short messages.
- **Vine** : An app that allows the posting of short 6-second looping videos.
- **WeChat** : An app that allows user to chat with friends, and to search for people nearby and around the globe.
- **WhatsApp** : A private messaging app that allows users to text, send photos, videos, and location information to their contacts.
- **YouTube** : A video sharing platform that allows users to post and share videos.

Social media has many benefits that must be balanced with the risks it presents. Risks to be aware of include:

- Screening for harmful content on websites and apps varies widely.
- Content posted can be incorrect, harmful, or hurtful (e.g., why are you so dumb?).
- Can be used to share harmful or adult content.
- Privacy controls over who can view or access posted material vary across apps, and many users are not aware of how to use them effectively.
- Apps that allow for real-time user videos "live streaming" can been used to show bullying, violence, suicide, and harmful acts as they are happening.
- Some apps that include location information can be used to get personal information, such as someone's age, current location, or where someone lives.
- Apps that support telephone calls do not show up on a call log, so parents may not know who their children are talking to. [80]

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.

  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. But 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:

- 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 whom 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. [80]

44. Other Types of Aggressive Behavior, Dating Violence, and Prevention Programs

Other Types of Aggressive Behavior

There are many other types of aggressive behavior that don't fit the definition of bullying. This does not mean that they are any less serious or require less attention than bullying. Rather, these behaviors require different prevention and response strategies.

Early Childhood

Early childhood often marks the first opportunity for young children to interact with each other. Between the ages of 3 and 5, kids are learning how to get along with each other, cooperate, share, and understand their feelings. Young children may be aggressive and act out when they are angry or don't get what they want, but this is not bullying. Still, there are ways to help children.

Helping Young Children Get Along with Others

Parents, school staff, and other adults can help young children develop skills for getting along with others in age-appropriate ways.

- Model positive ways for young children to make friends. For

example, practice pleasant ways that children can ask to join others in play and take turns in games. Coach older children to help reinforce these behaviors as well. Praise children for appropriate behavior. Help young children understand what behaviors are friendly.

- Help young children learn the consequences of certain actions in terms they can understand. For example, say "if you don't share, other children may not want to play with you." Encourage young children to tell an adult if they are treated in a way that makes them feel uncomfortable, upset or unhappy, or if they witness other children being harmed.
- Set clear rules for behavior and monitor children's interactions carefully. Step in quickly to stop aggressive behavior or redirect it before it occurs.
- Use age-appropriate consequences for aggressive behavior. Young children should be encouraged to say "I'm sorry" whenever they hurt a peer, even accidentally. The apology should also be paired with an action. For example, young children could help rebuild a knocked over block structure or replace a torn paper or crayons with new ones. [81]

Other Types of Aggressive Behavior

Peer Conflict

It is not bullying when two kids with no perceived power imbalance fight, have an argument, or disagree. Conflict resolution or peer mediation may be appropriate for these situations.

Hazing

Hazing is the use of embarrassing and often dangerous or illegal activities by a group to initiate new members.

Gang Violence

There are specialized approaches to addressing violence and aggression within or between gangs.

Harassment

Although bullying and harassment sometimes overlap, not all bullying is harassment and not all harassment is bullying. Under federal civil rights laws, harassment is unwelcome conduct based on a protected class (race, national origin, color, sex, age, disability, religion) that is severe, pervasive, or persistent and creates a hostile environment.

Stalking

Stalking is repeated harassing or threatening behavior, such as following a person, damaging a person's property, or making harassing phone calls.

Teen Dating Violence

Teen dating violence is intimate partner violence that occurs between two young people who are, or once were, in a relationship.

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. A national survey found that ten percent of teens, female and male, had been the victims of physical dating violence within the past year and approximately 29 percent of adolescents reported being verbally or psychologically abused within the previous year.

Teen dating violence can be any one, or a combination, of the following:

Physical

This includes pinching, hitting, shoving, or kicking.

Emotional

This involves threatening a partner or harming his or her sense of self-worth. Examples include name calling, controlling/jealous behaviors, consistent monitoring, shaming, bullying (online, texting, and in person), intentionally embarrassing him/her, keeping him/her away from friends and family.

Sexual

This is defined as forcing a partner to engage in a sex act when he or she does not or cannot consent.

It can negatively influence the development of healthy sexuality, intimacy, and identity as youth grow into adulthood and 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, especially when there is a focus on reducing risk factors as well as fostering protective factors, and when teens are 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 important 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. [82]

Risk Factors

Certain factors may increase teens' risk of experiencing and perpetrating teen dating violence. A number of studies have looked at the relationship between teen dating violence and community, family, peer, and individual risk factors. A lack of longitudinal data and a reliance on self-report data limits the causal connections that can be made between risk factors and teen dating violence. In most cases the relationship between risk factors and teen dating violence listed below represent correlations, but not necessarily causality.

Risk Factors for Teen Dating Violence Victimization

Findings suggest that the frequency and severity of teen dating violence increases 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 past 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 prior to 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 are 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

There are also risk factors that contribute to the likelihood of a teen becoming a perpetrator of dating violence. Many of these are developmentally normal in youth, such as little to no relationship experience, vulnerability to peer pressure, and unsophisticated communication skills. Some additional factors that have been found to be 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. [83]

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, and it is therefore an ideal time to promote healthy relationships and prevent patterns of teen dating violence that can last into adulthood. Learn more about characteristics of healthy and unhealthy relationships.

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 have been found to be 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. [84]

45. Unit 9: Moral Development - Foundations Of Child And Adolescent Psychology

Moral Development

Morality is a system of beliefs about what is right and good compared to what is wrong or bad. Moral development refers to changes in moral beliefs as a person grows older and gains maturity. **Moral beliefs** are related to, but not identical with, moral behavior: it is possible to know the right thing to do, but not actually do it. It is also not the same as knowledge of social conventions, which are arbitrary customs needed for the smooth operation of society. Social conventions may have a moral element, but they have a primarily practical purpose. Conventionally, for example, motor vehicles all keep to the same side of the street (to the right in the United States, to the left in Great Britain). The convention allows for smooth, accident-free flow of traffic. But following the convention also has a moral element, because an individual who chooses to drive on the wrong side of the street can cause injuries or even death. In this sense, choosing the wrong side of the street is wrong morally, though the choice is also unconventional. [85]

Kohlberg's Stages of Moral Development

One of the best-known explanations of how morality of justice develops was developed by Lawrence Kohlberg and his associates (Kohlberg, Levine, & Hewer, 1983; Power, Higgins, & Kohlberg, 1991).

Using a stage model similar to Piaget's, Kohlberg proposed six stages of moral development, grouped into three levels. Individuals experience the stages universally and in sequence as they form beliefs about justice. He named the levels simply preconventional, conventional, and postconventional.

Moral Stages According to Kohlberg

Moral Stage	Definition of What is "Good"
Preconventional Level	
Stage 1: Obedience and punishment	Action that is rewarded and **not** punished
Stage 2: Market exchange	Action that is agreeable to the child and child's partner
Conventional Level	
Stage 3: Peer opinion	Action that wins approval from friends or peers
Stage 4: Law and order	Action that conforms to the community customs or laws
Postconventional Level	
Stage 5: Social contract	Action that follows socially accepted ways of making decisions
Stage 6: Universal principles	Action that is consistent with self-chosen, general principles

Preconventional Justice: 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 is 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, an **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. But 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 Justice: 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 "Shop lifting 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 Justice: 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 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, for example, 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 disagreeing occasionally with what is customary (Stage 4) or even with what is legal (Stage 5). (85)

Kohlberg and the Heinz Dilemma

Lawrence Kohlberg (1963) wanted to find out how people decide what is right and what is wrong. In order to explore this area, he read a story containing a moral dilemma to boys of different age groups. In the story, a man, named Heinz, is trying to obtain an expensive drug that his wife needs in order to treat her cancer. The man has no money and no one will loan him the money he requires. He begs the pharmacist to reduce the price, but the pharmacist refuses. So, the man decides to break into the pharmacy to steal the drug. Then Kohlberg asked the children to decide whether the man was right or wrong in his choice. Kohlberg was not interested in whether they said the man was right or wrong, he was interested in finding out how they arrived at such a decision. He wanted to know what they thought made something right or wrong.

Preconventional Moral Development

The youngest subjects seemed to answer based on what would happen to the man as a result of the act. For example, they might say the man should not break into the pharmacy because the pharmacist might find him and beat him. Or they might say that the man should break in and steal the drug and his wife will give him a

big kiss. Right or wrong, both decisions were based on what would physically happen to the man as a result of the act. This is a self-centered approach to moral decision-making. He called this most superficial understanding of right and wrong pre-conventional moral development.

Conventional Moral Development

Middle childhood boys seemed to base their answers on what other people would think of the man as a result of his act. For instance, they might say he should break into the store, and then everyone would think he was a good husband. Or, he shouldn't because it is against the law. In either case, right and wrong is determined by what other people think. A good decision is one that gains the approval of others or one that complies with the law. This he called conventional moral development.

Postconventional Moral Development

Older children were the only ones to appreciate the fact that this story has different levels of right and wrong. Right and wrong are based on social contracts established for the good of everyone or on universal principles of right and wrong that transcend the self and social convention. For example, the man should break into the store because, even if it is against the law, the wife needs the drug and her life is more important than the consequences the man might face for breaking the law. Or, the man should not violate the principle of the right of property because this rule is essential for social order. In either case, the person's judgment goes beyond what happens to the self. It is based on a concern for others; for society as a whole or for an ethical standard rather than a legal standard. This

level is called post-conventional moral development because it goes beyond convention or what other people think to a higher, universal ethical principle of conduct that may or may not be reflected in the law. Notice that such thinking (the kind supreme justices do all day in deliberating whether a law is moral or ethical, etc.) requires being able to think abstractly. Often this is not accomplished until a person reaches adolescence or adulthood. [86]

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 is 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 own 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 own individual 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. [87]

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.

Character Development in Schools

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** , though 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 (Elkind & Sweet, 2004; Berkowitz & Bier, 2006; Narvaez, 2010). Character education programs goes 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, such as "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 in 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.

School-wide Programs of Character Education

In the most comprehensive approaches to character education, an entire school commits itself to developing 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.

Classroom Programs of Character Education

Even if a teacher is teaching character education simply within her own 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, a reading buddies program can sometimes 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. But ethical issues can be 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 large amount 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 of the needs of its citizens. [85]

46. Course Summary and Journal and Wiki Assignments: Social Development

Course Summary

We are now at the end of our course readings. We started the course by learning about the field of child development and the main domains and issues that we study. We learned about our theories and research methods. Then, we learned about genetics and prenatal development. After laying this foundation, we examined development from infancy through adolescence within the physical, cognitive, and socioemotional domains. I hope you have enjoyed reading and learning the material in these six modules. The library and Internet are rich with information to help you learn more about child and adolescent development in the future. Happy reading! [1]

Module 6 Journal Assignment

This journal assignment aligns with Learning Outcome 3.

The purpose of this assignment is to apply course material to your own development. This will allow you to better appreciate how the information that we learn in this course relates to everyday life.

Journal Instructions

You only need to complete one of the three options for this journal.

- Option 1: What was the parenting style of your primary caregiver? How did this influence your development?
- Option 2: Did you date during middle school or high school? Regardless of whether you answered yes or no, how do you think dating or not dating influenced your socioemotional development?
- Option 3: Were you bullied growing up? Were you a bully? How do you think being bullied or being a bully shaped your socioemotional development?

The journal should show evidence of self-reflection, be free of writing mechanic issues, and provide references in APA format. This assignment is worth 75 points. Please refer to the rubric below for specific requirements for this journal. [1]

Module 6 Wiki Assignment

This Wiki assignment aligns with Learning Outcome 3.

Purpose

Collaboration is important for learning. In this course, we will use our class Wiki as a way to collaborate. Our Wiki page will allow us to meet asynchronously. We can share all types of files. It will allow us to learn from each other and the resources that we find.

Wiki Collaboration Instructions

The Wiki page has been set up to be open 24/7. This means that you can work whenever you want to. Your mission is to find a course related resource for module six and share it. You should briefly describe the resource and explain how it is related to module six and the milestones achieved in the social development domain. The same resource cannot be shared more than once — so checkout what is already posted. The research can be a website, blog, YouTube video, TedTalk, research article, news article, SlideShare, PowerPoint, or Pinterest board, you get the idea. In addition to posting a resource, you must also say what two other resources posted by your peers you found most educational and why by commenting on their posts. All work should be free of writing mechanic issues. This assignment is worth 75 points. (1)

Human Development Capstone Project | Due

This capstone project aligns with Learning Outcomes 1–3.

Purpose

For this capstone project, you need to choose a specific culture and/or time period to research and relate it to human development. The goal of this project is to apply course material to contextual considerations in human development.

Examples

Previous projects have examined the Salem Witch Trials, ancient Egypt, Rome, Greece, Colonial America, the U.S. during the 1920's, the Trail of Tears, and modern Japan.

Instructions

Once you choose the culture and/or time period you want to study, you will need to research your subject, and then either write a paper or create a PowerPoint presentation including your voice addressing the below points. Remember, the goal of this project is to apply course material to contextual considerations in human development.

Requirements

- Set the stage by providing background information on the culture and/or historical time period you have selected to study
- Discuss life and human development in this culture and/or time period
- You will need to apply material from **every module** to your human development in your culture and/or time period
- Provide at least three interesting facts and/or one case study about the culture and/or historical time period
- Use **at least** five academic sources
- Use APA format for your in-text citations and references

There is neither a minimum nor maximum word count. The length should be determined by addressing all of the requirements.

Remember, this is your chance to shine and take pride in your work, and not just do the minimum.

This capstone project is worth 100 points. It is due in Module 6. [1]

PART VII
ATTRIBUTIONS

47. Footnote Attribution List

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