# TED 1200 - CHILD AND ADOLESCENT DEVELOPMENT



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# TED 1200 - Child and Adolescent Development

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# 1: INTRODUCTION TO LIFESPAN DEVELOPMENT

**Developmental Psychology**, *also known as Human Development or Lifespan Development, is the scientific study of ways in which people change, as well as stay the same, from conception to death.* You will no doubt discover in the course of studying that the field examines change across a broad range of topics. These include physical and other psychophysiological processes, cognition, language, and psychosocial development, including the impact of family and peers.


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# 1.1: Prelude to Lifespan Development

Originally concerned with infants and children, Developmental Psychology has expanded to include adolescence and more recently, aging and the entire life span. Previously, the message was once you are 25, your development is essentially completed. Our academic knowledge of the lifespan has changed and although there is still less research on adulthood than on childhood, adulthood is gaining increasing attention. This is particularly true now that the large cohort known as the baby boomers are beginning to enter late adulthood. The assumption that early childhood experiences dictate our future is also being called into question. Rather, we have come to appreciate that growth and change continues throughout life and experience continues to have an impact on who we are and how we relate to others. We now recognize that adulthood is a dynamic period of life marked by continued cognitive, social, and psychological development.




Figure 1.1 *Source*

You will also discover that developmental psychologists investigate key questions, such as whether children are qualitatively different from adults or simply lack the experience that adults draw upon. Other issues that they deal with is the question of whether development occurs through the gradual accumulation of knowledge or through shifts from one stage of thinking to another; or if children are born with innate knowledge or figure things out through experience; and whether development is driven by the social context or something inside each child. From the above explanation you may be thinking already that developmental psychology is related to other applied fields. You are very right. The field informs several applied fields in psychology, including, educational psychology, psychopathology, and forensic developmental psychology. It also complements several other basic research fields in psychology including social psychology, cognitive psychology, and comparative psychology. Lastly, it draws from the theories and research of several scientific fields including biology, sociology, health care, nutrition, and anthropology.

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# 1.2: Lifespan Perspective

**Learning Objectives: Lifespan Perspective**

- *Explain the lifespan perspective and its assumptions about development.*
- *Differentiate periods of human development.*
- *Explain the issues underlying lifespan development*
- *Identify the historical and contemporary theories impacting lifespan development*

## Lifespan Perspective

Paul Baltes identified several underlying principles of the lifespan perspective (Baltes, 1987; Baltes, Lindenberger, & Staudinger, 2006). Lifespan theorists believe that **development is life-long**, and change is apparent across the lifespan. No single age period is more crucial, characterizes, or dominates human development. Consequently, the term lifespan development will be used throughout the textbook.

**Development is multidirectional**. Humans change in many directions. We may show gains in some areas of development, while showing losses in other areas. Every change, whether it is finishing high school, getting married, or becoming a parent, entails both growth and loss.

**Development is multidimensional**. We change across three general domains/dimensions; physical, cognitive, and psychosocial. The **physical domain** includes *changes in height and weight, sensory capabilities, the nervous system, as well as the propensity for disease and illness*. The **cognitive domain** encompasses the *changes in intelligence, wisdom, perception, problem-solving, memory, and language*. The **psychosocial domain** focuses on *changes in emotion, self- perception and interpersonal relationships with families, peers, and friends*. All three domains influence each other. It is also important to note that a change in one domain may cascade and prompt changes in the other domains. For instance, an infant who has started to crawl or walk will encounter more objects and people, thus fostering developmental change in the child's understanding of the physical and social world.

**Development is multidisciplinary.** As mentioned at the start of the chapter, human development is such a vast topic of study that it requires the theories, research methods, and knowledge base of many academic disciplines.

**Development is characterized by plasticity. Plasticity** *is all about our ability to change and that many of our characteristics are malleable*. For instance, plasticity is illustrated in the brain's ability to learning from experience and how it can recover from injury.

**Development is multicontextual.** Development occurs in many contexts. Baltes (1987) identified three specific contextual influences.

- *Normative age-graded influences:* An **age-grade** *is a specific age group, such as toddler, adolescent, or senior*. Humans in a specific age-grade share particular experiences and developmental change
- *Normative history-graded influences:* The time period in which you are born (Table 1.1) shapes your experiences. A **cohort** *is a group of people who are born at roughly the same period in a particular society*. These people travel through life often experiencing similar circumstances.
- *Non-normative life influences:* Despite sharing an age and history with our peers, each of us also has unique experiences that may shape our development. A child who loses his/her parent at a young age has experienced a life event that is not typical of the age group.

| Generation | Born Between... |
|---|---|
| Silent Generation | 1928 to 1945 |
| Baby Boomers | 1946 to 1964 |
| Generation X | 1965 to 1980 |

| Generation | Born Between... |
|---|---|
| Millennials | 1980 and later |

Another context that influences our lives is our social standing, socioeconomic status, or social class. **Socioeconomic status (SES)** *is a way to identify families and households based on their shared levels of education, income, and occupation.* While there is certainly individual variation, members of a social class tend to share similar lifestyles, patterns of consumption, parenting styles, stressors, religious preferences, and other aspects of daily life. All of us born into a class system are socially located and may move up or down depending on a combination of both socially and individually created limits and opportunities.

Families with higher socioeconomic status usually are in occupations (attorneys, physicians, executives) that not only pay better, but also grant them a certain degree of freedom and control over their job. Having a sense of autonomy or control is a key factor in experiencing job satisfaction, personal happiness, and ultimately health and well-being (Weitz, 2007). Those families with lower socioeconomic status are typically in occupations that are more routine, more heavily supervised, and require less formal education. These occupations are also more subject to job disruptions, including lay-offs and lower wages.

Poverty level is an income amount established by the federal government that is based on a set of income thresholds that vary by family size (United States Census Bureau, 2016). If a family's income is less than the government threshold, that family is considered in poverty. Those living at or near poverty level may find it extremely difficult to sustain a household with this amount of income. Poverty is associated with poorer health and a lower life expectancy due to poorer diet, less healthcare, greater stress, working in more dangerous occupations, higher infant mortality rates, poorer prenatal care, greater iron deficiencies, greater difficulty in school, and many other problems. Members of higher income status may fear losing that status, but the poor may have greater concerns over losing housing.

Today we are more aware of the variations in development and the impact that culture and the environment have on shaping our lives. **Culture** *is the totality of our shared language, knowledge, material objects, and behavior.* It includes ideas about what is right and wrong, what to strive for, what to eat, how to speak, what is valued, as well as what kinds of emotions are called for in certain situations. Culture teaches us how to live in a society and allows us to advance because each new generation can benefit from the solutions found and passed down from previous generations. Culture is learned from parents, schools, churches, media, friends and others throughout a lifetime. The kinds of traditions and values that evolve in a particular culture serve to help members function in their own society and to value their own society. We tend to believe that our own culture's practices and expectations are the right ones. *This belief that our own culture is superior is called* **ethnocentrism** and is a normal by-product of growing up in a culture. It becomes a roadblock, however, when it inhibits understanding of cultural practices from other societies. **Cultural relativity** *is an appreciation for cultural differences and the understanding that cultural practices are best understood from the standpoint of that particular culture.*



Figure 1.2: Think of other ways culture may have affected your development. How might cultural differences influence interactions between teachers and students, nurses and patients, or other relationships? Source.

Culture is an extremely important context for human development and understanding development requires being able to identify which features of development are culturally based. This understanding is somewhat new and still being explored. Much of what

developmental theorists have described in the past has been culturally bound and difficult to apply to various cultural contexts. The reader should keep this in mind and realize that there is still much that is unknown when comparing development across cultures.

**Lifespan vs. Life expectancy:** At this point you must be wondering what the difference between lifespan and life expectancy is, according to developmentalists. **Lifespan**, or longevity, *refers to the length of time a species can exist under the most optimal conditions*. For instance, the grey wolf can live up to 20 years in captivity, the bald eagle up to 50 years, and the Galapagos tortoise over 150 years (Smithsonian National Zoo, 2016). The longest recorded lifespan for a human was Jean Calment who died in 1994 at the age of 122 years, 5 months, and 14 days (Guinness World Records, 2016). **Life expectancy** *is the predicted number of years a person born in a particular time period can reasonably expect to live* (Vogt & Johnson, 2016).

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# 1.3: Conceptions of Age

**How old are you?** Chances are you would answer that question *based on the number of years since your birth, or what is called your* **chronological age**. Ever felt older than your chronological age? Some days we might "feel" like we are older, especially if we are not feeling well, are tired, or are stressed out. We might notice that a peer seems more emotionally mature than we are, or that they are physically more capable. So years since birth is not the only way we can conceptualize age.

**Biological age:** Another way developmental researchers can think about the concept of age is to examine *how quickly the body is aging*, *this is your* **biological age**. Several factors determine the rate at which our body ages. Our nutrition, level of physical activity, sleeping habits, smoking, alcohol consumption, how we mentally handle stress, and the genetic history of our ancestors, to name but a few.

**Psychological age:** *Our psychologically adaptive capacity compared to others of our chronological age is our* **psychological age**. This includes our cognitive capacity along with our emotional beliefs about how old we are. An individual who has cognitive impairments might be 20 years of age yet has the mental capacity of an 8 year-old. A 70 year-old might be travelling to new countries, taking courses at college, or starting a new business. Compared to others of our age group, we may be more or less adaptive and excited to meet new challenges. Remember you are as *young* or *old* as you feel.



Figure 1.3: You are as young as you feel! Source

**Social age:** Our **social age** *is based on the social norms of our culture and the expectations our culture has for people of our age group*. Our culture often reminds us whether we are "on target" or "off target" for reaching certain social milestones, such as completing our education, moving away from home, having children, or retiring from work. However, there have been arguments that social age is becoming less relevant in the 21$^{st}$ century (Neugarten, 1979; 1996). If you look around at your fellow students in your courses at college you might notice more people who are older than the more traditional aged college students, those 18 to 25. Similarly, the age at which people are moving away from the home of their parents, starting their careers, getting married or having children, or even whether they get married or have children at all, is changing.

Those who study lifespan development recognize that chronological age does not completely capture a person's age. Our age profile is much more complex than this. A person may be physically more competent than others in their age group, while being psychologically immature. So, how old are you?

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# 1.4: Periods of Development

Table 1.2 reflects unique aspects of the various stages of childhood and adulthood that will be explored in this book. 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. The same is true of an 18 year old and an 80 year old, both considered adults.

*Table 1.2: Age Periods of Development*

| Age Period | Description |
|---|---|
| Prenatal | *Starts at conceptions, continues through implantation in the uterine wall by the embryo, and ends at birth* |
| Infancy and Toddlerhood | *Starts at birth and continues to two years of age* |
| Early Childhood | *Starts at two years of age and continues until six years of age* |
| Middle and Late Childhood | *Starts at six years of age and continues until the onset of puberty* |
| Adolescence | *Starts at the onset of puberty until 18* |
| Emerging Adulthood | *Starts at 18 until 25* |
| Early Adulthood | *Starts at 25 until 40-45* |
| Middle Adulthood | *Starts at 40-45 until 60-65* |
| Late Adulthood | *Starts at 65 onward* |

**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 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.



Figure 1.4. *Source.*

**Early Childhood:** This period is also referred to as the preschool years and consists of the years which follow toddlerhood and precede formal schooling. As a two to six-year-old, the child is busy learning language, is gaining a sense of self and greater independence, and is beginning to learn the workings of the physical world.

**Middle and Late Childhood:** The ages of six to the onset of puberty comprise middle and late 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.

**Adolescence**: Adolescence is a period of dramatic physical change marked by an overall 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.

**Emerging Adulthood:** The period of emerging adulthood is a transitional time between the end of adolescence and before individuals acquire all the benchmarks of adulthood. Continued identity exploration and preparation for full independence from parents are demonstrated. Although at one's physiological peak, emerging adults are most at risk for involvement in violent crimes and substance abuse.

**Early Adulthood**: The twenties and thirties are identified as early adulthood. Intimate relationships, establishing families, and work are primary concerns at this stage of life.

**Middle Adulthood**: The forties through the mid-sixties is referred to as middle adulthood. This is a period in which aging becomes more noticeable and when many people are at their peak of productivity in love and work.



Figure 1.5. Source.

**Late Adulthood**: Late adulthood is sometimes subdivided into two categories: The young-old who are from 65-84 years and the oldest-old who are 85 years and older. One of the primary differences between these groups is that the young-old are still relatively healthy, productive, active, and the majority continue to live independently. With both age groups the risks of diseases such as, arteriosclerosis, cancer, and cerebral vascular disease increases substantially.

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# 1.5: Issues in Lifespan Development

**Nature and Nurture:** Why are you the way you are? As you consider some of your features (height, weight, personality, being diabetic, etc.), ask yourself whether these features are a result of heredity or environmental factors-or both. Chances are, you can see the ways in which both heredity and environmental factors (such as lifestyle, diet, and so on) have contributed to these features. For decades, scholars have carried on the "nature/nurture" debate. For any particular feature, those on the side of **Nature** *would argue that heredity plays the most important role in bringing about that feature*. Those on the side of **Nurture** *would argue that one's environment is most significant in shaping the way we are*. This debate continues in all aspects of human development, and most scholars agree that there is a constant interplay between the two forces. It is difficult to isolate the root of any single behavior as a result solely of nature or nurture.

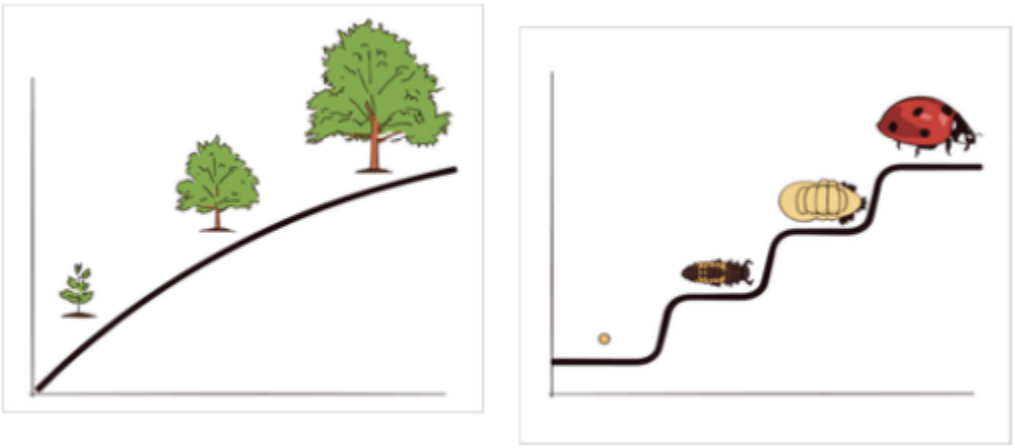


Figure 1.6: The tree represents continuous development, while the ladybug represents discontinuous/stage development. Source.

**Continuity versus Discontinuity:** Is human development best characterized as a slow, gradual process, or is it best viewed as one of more abrupt change? The answer to that question often depends on which developmental theorist you ask and what topic is being studied. The theories of Freud, Erikson, Piaget, and Kohlberg are called stage theories. **Stage theories or discontinuous development** *assume that developmental change often occurs in distinct stages that are qualitatively different from each other, and in a set, universal sequence*. At each stage of development, children and adults have different qualities and characteristics. Thus, stage theorists assume development is more discontinuous. Others, such as the behaviorists, Vygotsky, and information processing theorists, *assume development is a more slow and gradual process known as* **continuous development**. For instance, they would see the adult as not possessing new skills, but more advanced skills that were already present in some form in the child. Brain development and environmental experiences contribute to the acquisition of more developed skills.

**Active versus Passive:** How much do you play a role in your own developmental path? Are you at the whim of your genetic inheritance or the environment that surrounds you? Some theorists see humans as playing a much more active role in their own development. Piaget, for instance believed that children actively explore their world and construct new ways of thinking to explain the things they experience. In contrast, many behaviorists view humans as being more passive in the developmental process.

**Stability versus Change:** How similar are you to how you were as a child? Were you always as out-going or reserved as you are now? Some theorists argue that the personality traits of adults are rooted in the behavioral and emotional tendencies of the infant and young child. Others disagree, and believe that these initial tendencies are modified by social and cultural forces over time.

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# 1.6: Historical Theories on Development

**Preformationist View**: Well into the 18th century, children were merely thought of as little adults. **Preformationism**, *or the belief that a tiny, fully formed human is implanted in the sperm or egg at conception and then grows in size until birth,* was the predominant early theory. Children were believed to possess all their sensory capabilities, emotions, and mental aptitude at birth, and as they developed these abilities unfolded on a predetermined schedule (Thomas, 1979). The environment was thought to play no role in determining development**.**

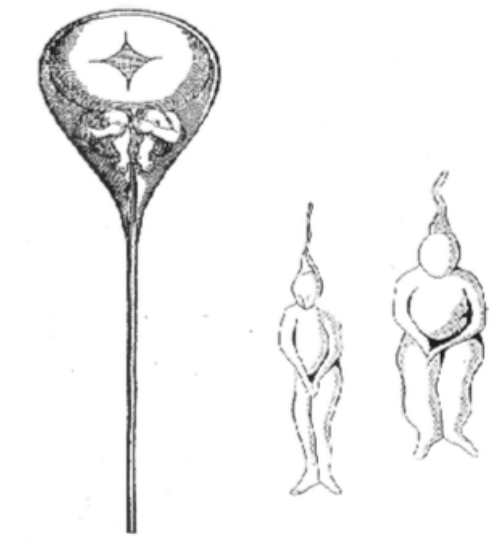
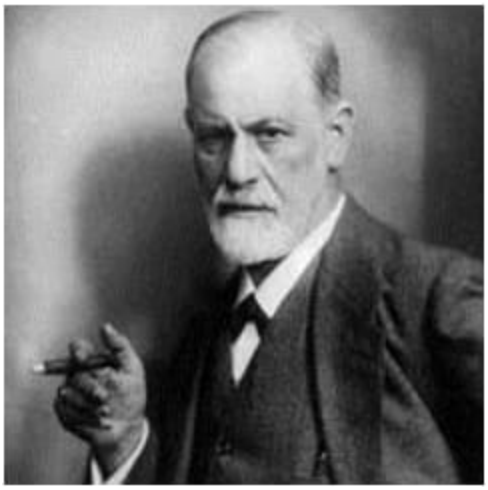


Figure 1.7: A tiny person inside a sperm. Source.

**John Locke** (1632-1704): Locke, a British philosopher, refuted the idea of innate knowledge and instead proposed that children are largely shaped by their social environments, especially their education as adults teach them important knowledge. He believed that through education a child learns socialization, or what is needed to be an appropriate member of society. Locke advocated thinking of a child's mind as a **Tabula Rosa** or blank slate, and whatever comes into the child's mind comes from the environment. Locke emphasized that the environment is especially powerful in the child's early life because he considered the mind the most pliable then. Locke indicated that the environment exerts its effects through associations between thoughts and feelings, behavioral repetition, imitation, and rewards and punishments (Crain, 2005). Locke's ideas laid the groundwork for the behavioral perspective and subsequent learning theories of Pavlov, Skinner and Bandura.

**Jean-Jacques Rousseau** (1712-1778): Like Locke, Rousseau also believed that children were not just little adults. However, he did not believe they were blank slates, but instead developed according to a natural plan which unfolded in different stages (Crain, 2005). He did not believe in teaching them the correct way to think, but believed children should be allowed to think by themselves according to their own ways and an inner, biological timetable. This focus on biological maturation resulted in Rousseau being considered the father of developmental psychology. Followers of Rousseau's developmental perspective include Gesell, Montessori, and Piaget.

**Arnold Gesell** (1880-1961): Gesell spent 50 years at the Yale Clinic of Child Development, and with his colleagues he studied the neuromotor development of children. Gesell believed that the child's development was activated by genes and he called this process maturation (Crain, 2005). Further, he believed that development unfolded in fixed sequences, and he opposed efforts to teach children ahead of schedule as he believed they will engage in behaviors when their nervous systems had sufficiently matured.



*1.8: Sigmund Freud from Wikimedia*

**Sigmund Freud** (1856-1939): Freud has been a very influential figure in the area of development. 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. His view of development and psychopathology dominated the field of psychiatry until the growth of behaviorism in the 1950s. His assumptions that personality forms during the first few years of life and that the ways in which parents or other caregivers interact with children have a long-lasting impact on children's emotional states have guided parents, educators, clinicians, and policy-makers for many years.

Freud's theory has been heavily criticized for several reasons. One is that it is very difficult to test scientifically (Crews, 1998). How can parenting in infancy be traced to personality in adulthood? Freud focuses on the darker side of human nature and suggests that much of what determines our actions is unknown to us. Despite these criticisms, Freud's theory has heuristic value in providing a framework from which to elaborate and modify subsequent theories of development. Many later theories, particularly behaviorism and humanism, came about as challenges to Freud's views.

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# 1.7: Contemporary Theories on Development

**Erikson and Psychosocial Theory:** Now, let's turn to a less controversial psychodynamic theorist, Erik Erikson. Erikson presents eight developmental stages that encompass the entire lifespan. For that reason, Erikson's psychosocial theory forms the foundation for much of our discussion of psychosocial development.



Figure 1.9: Erik Erikson.

Erikson (1950) proposed a model of lifespan development that provides a useful guideline for thinking about the changes we experience throughout life. Erikson broke with Freud's emphasis on sexuality as the cornerstone of social-emotional development and instead suggested that social relationships fostered development. Erikson proposed that *each period of life has a unique challenge or crisis that the person who reaches it must face, referred to as* **psychosocial crises**. According to Erikson, successful development involves dealing with and resolving the goals and demands of each of these psychosocial crises in a positive way. (These crises are usually called *stages*, although that is not the term Erikson used.) If a person does not resolve a stage successfully it may hinder their ability to deal with later stages. For example, the person who does not develop a sense of trust (Erikson's first stage) may find it challenging as an adult to form a positive intimate relationship (Erikson's sixth stage). Or an individual who does not develop a clear sense of purpose and identity (Erikson's fifth stage) may become self-absorbed and stagnate rather than working toward the betterment of others (Erikson's seventh stage). However, most individuals are able to successfully complete the eight stages of his theory (See Table 1.3).

*Table 1.3: Erikson's Psychological Stages.*

| Age Range | Psychosocial crisis | Positive resolution of crisis |
|---|---|---|
| Birth to 12 to 18 months | Trust versus Mistrust | The child develops a feeling of trust in his or her caregivers. |
| 18 months to 3 years | Autonomy versus shame/doubt | The child learns what he or she can and cannot control and develops a sense of free will. |
| 3 to 6 years | Initiative versus Guilt | The child learns to become independent by exploring, manipulating, and taking action. |
| 6 to 12 years | Industry versus inferiority | The child learns to do things well or correctly according to standards set by others, particularly in school. |
| 12 to 18 years | Identity versus role confusion | The adolescent develops a well-defined and positive sense of self in relationship to others |
| 19 to 40 years | Intimacy versus isolation | The person develops the ability to give and receive love and to make long-term commitments |
| 40 to 65 years | Generativity versus stagnation | The person develops an interest in guiding the development of the next generation, often by becoming a parent |

| Age Range | Psychosocial crisis | Positive resolution of crisis |
|---|---|---|
| 65 to death | Ego integrity versus despair | The person develops acceptance of his or her life as it was lived. |

Erikson's theory has been criticized for focusing so heavily on stages and assuming that the completion of one stage is prerequisite for the next crisis of development. His theory also focuses on the social expectations that are found in certain cultures, but not in all. For instance, the idea that adolescence is a time of searching for identity might translate well in the middle-class culture of the United States, but not as well in cultures where the transition into adulthood coincides with puberty through rites of passage and where adult roles offer fewer choices.

**Learning Theory:** Also known as **Behaviorism**, *is based on the premise that it is not possible to objectively study the mind, and therefore psychologists should limit their attention to the study of behavior itself*. The most famous behaviorist was Burrhus Frederick (B. F.) Skinner (1904– 1990), who expanded the principles of behaviorism and also brought them to the attention of the public at large. Skinner used the ideas of stimulus and response, along with the application of rewards or *reinforcements*, to train pigeons and other animals. In addition, he used the general principles of behaviorism to develop theories about how best to teach children and how to create societies that were peaceful and productive (Skinner, 1957, 1968, 1972).

The behaviorists made substantial contributions to psychology by identifying the principles of *learning*. Although the behaviorists were incorrect in their beliefs that it was not possible to measure thoughts and feelings, their ideas provided new insights that helped further our understanding regarding the nature-nurture debate as well as the question of free will. The ideas of behaviorism are fundamental to psychology and have been developed to help us better understand the role of prior experiences in a variety of areas of psychology.

**Social Learning Theory**, developed by Albert Bandura (1977), calls our attention to the ways in which many of our actions are not learned through conditioning, as suggested by Skinner; rather, *they are learned by watching others*. Young children frequently learn behaviors through imitation. Especially when children do not know what else to do, they learn by modeling or copying the behavior of others.

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 on the behavior of children. Bandura began by conducting an experiment in which he showed children a film of a woman hitting an inflatable clown or "bobo" doll.

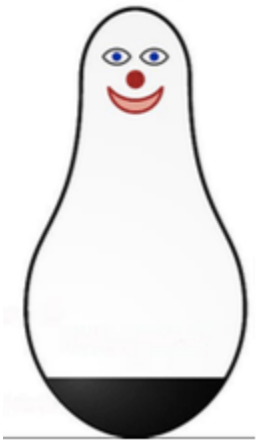


Figure 1.10: The Bobo Doll. Source.

Then the children were allowed in the room, where they found the doll and during their play they began to hit it. The children also

demonstrated novel ways of being aggressive toward the doll that were not demonstrated by those children who did not see the aggressive model. Bandura's research raised concerns about the impact of violence on young children. Since then, considerable research has been conducted on the impact of violent media on children's aggression including playing video games.

**Cognitive Theory:** The **cognitive theories** *focus on how our mental processes or cognitions change over time*. Three important theories are Jean Piaget's, Lev Vygotsky's, and Information-processing.

**Jean Piaget (1896-1980)** was one of the most influential cognitive theorists in development. He was inspired to explore children's ability to think and reason by watching his own children's development. He was one of the first to recognize and map out the ways in which children's intelligence differs from that of adults (Piaget, 1929). 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. Piaget theorized that children progressed through four stages of cognitive development (Table 1.4).

*Table 1.4: Piaget's Stages of Cognitive Development.*

| Stage | Approximate age range | Characteristics | Stage attainments |
|---|---|---|---|
| Sensorimotor | Birth to about 2 years | The child experiences the world through the fundamental senses of seeing, hearing, touching, and tasting. | Object permanence |
| Preoperational | 2 to 7 years | Children acquire the ability to internally represent the world through language and mental imagery. They also start to see the world from other people's perspectives. | Theory of mind; rapid increase in language ability |
| Concrete operational | 7 to 11 years | Children become able to think logically. They can increasingly perform operations on objects that are real. | Conservation |
| Formal operational | 11 years to adulthood | Adolescents can think systematically, can reason about abstract concepts, and can understand ethics and scientific reasoning. | Abstract logic |

Piaget has been criticized for overemphasizing the role that physical maturation plays in cognitive development and in underestimating the role that culture and experience plays. Looking across cultures reveals considerable variation in what children are able to do at various ages. Research has shown considerable overlap among the four stages and that development is more continuous.

**Lev Vygotsky (1896-1934)** was a Russian psychologist who wrote in the early 1900s but whose work was discovered by researchers in the United States in the 1960s and became more widely known in the 1980s (Crain, 2005). His **sociocultural theory** *emphasizes the importance of culture and interaction in the development of cognitive abilities*. Vygotsky differed with Piaget in that he believed that a person 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. Vygotsky developed theories on teaching that have been adopted by educators today.

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

**Urie Bronfenbrenner (1917-2005)** developed the **Ecological Systems Theory**, *which provides a framework for understanding and studying the many influences on human development* (Bronfenbrenner, 1979). Bronfenbrenner recognized that human interaction is influenced by larger social forces and that an understanding of these forces is essential for understanding an individual. The individual is impacted by several systems including:

- **Microsystem** *includes the individual's setting and those who have direct, significant contact with the person, such as parents or siblings*. The input of those is modified by the cognitive and biological state of the individual as well. These influence the person's actions, which in turn influence systems operating on him or her.
- **Mesosystem** *includes the larger organizational structures, such as school, the family, or religion.* These institutions impact the microsystems just described. The philosophy of the school system, daily routine, assessment methods, and other characteristics can affect the child's self-image, growth, sense of accomplishment, and schedule thereby impacting the child,

physically, cognitively, and emotionally.

- **Exosystem** *includes the larger contexts of community*. A community's values, history, and economy can impact the organizational structures it houses. Mesosystems both influence and are influenced by the exosystem.
- **Macrosystem** *includes the cultural elements,* such as global economic conditions, war, technological trends, values, philosophies, and a society's responses to the global community.
- **Chronosystem** *is the historical context in which these experiences occur*. This relates to the different generational time periods previously discussed such as the baby boomers and millennials.

In sum, a child's experiences are shaped by larger forces such as the family, schools, religion, culture, and time period. Bronfenbrenner's model helps us understand all of the different environments that impact each one of us simultaneously. Despite its comprehensiveness, Bronfenbrenner's ecological system's theory is not easy to use. Taking into consideration all the different influences makes it difficult to research and determine the impact of all the different variables (Dixon, 2003). Consequently, psychologists have not fully adopted this approach, although they recognize the importance of the ecology of the individual. Figure 1.11 is a model of Bronfenbrenner's Ecological Systems Theory.

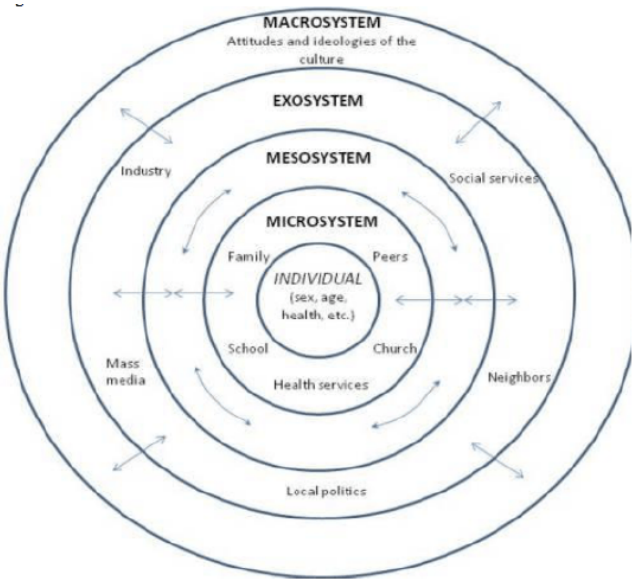



Figure 1.11. Source.

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# 1.8: Research Methods

**Learning Objectives**

- Define the scientific method
- Compare research methods noting the advantages and disadvantages of each.
- Explain research involving time spans
- Explain ways to conduct ethical research

An important part of learning any science, including psychology, is having a basic knowledge of the techniques used in gathering information. The hallmark of scientific investigation is that of following a set of procedures designed to keep questioning or skepticism alive while describing, explaining, or testing any phenomenon. Science involves continuously renewing our understanding of the subjects in question and an ongoing investigation of how and why events occur. The scientific method is *the set of assumptions, rules, and procedures scientists use to conduct research*.

A **research design** is *the specific method a researcher uses to collect, analyze, and interpret data*. Psychologists use three major types of research designs in their research, and each provides an essential avenue for scientific investigation. **Descriptive research** is *research that describes what is occurring at a particular point in time*. **Correlational research** is *research designed to discover relationships among variables and to allow the prediction of future events from present knowledge*. **Experimental research** is *research in which a researcher manipulates one or more variables to see their effects*. Each of the three research designs varies according to its strengths and limitations.

## Descriptive Research

**Case Study:** Sometimes the data in a descriptive research project are based on only a small set of individuals, often only one person or a single small group.Theseresearchdesignsareknown as **case studies** *which are descriptive records of one or a small group of individuals' experiencesandbehavior.*Sometimes case studies involve ordinary individuals. Developmental psychologist Jean Piaget observed his own children. More frequently, case studies are conducted on individuals who have unusual or abnormal experiences. The assumption is that by carefully studying these individuals, we can learn something about human nature. Case studies have a distinct disadvantage in that, although it allows us to get an idea of what is currently happening, it is usually limited to static pictures. Although descriptions of particular experiences may be interesting, they are not always transferable to other individuals in similar situations. They are also time consuming and expensive as many professionals are involved in gathering the information.

**Observations:** Another type of descriptive research is known as observation. When using **naturalistic observation**, *psychologists observe and record behavior that occurs in everyday settings*. For instance, a developmental psychologist might watch children on a playground and describe what they say to each other. However, naturalistic observations do not allow the researcher to have any control over the environment.

**Laboratory observation,** unlike the naturalistic observation, is *conducted in a setting created by the researcher*. This permits the researcher to control more aspects of the situation. One example of laboratory observation involves a systematic procedure known as the *strange situation test,* which you will learn about in chapter three. Concerns regarding laboratory observations are that the participants are aware that they are being watched, and there is no guarantee that the behavior demonstrated in the laboratory will generalize to the real world.

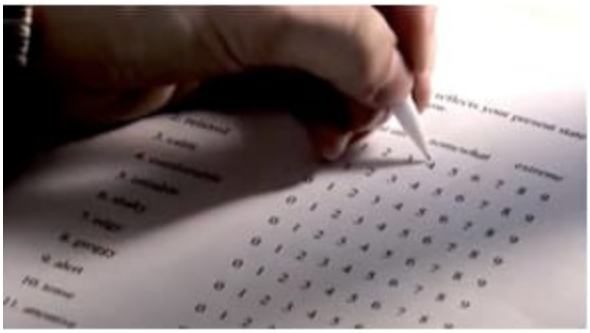


Figure 1.12: How many surveys have you taken? Source.

**Survey:** In other cases the data from descriptive research projects come in the form of a **survey**, *which is a measure administered through either a verbal or written questionnaire to get a picture of the beliefs or behaviors of a sample of people of interest. The people chosen to participate in the research,* known as the **sample**, are selected to be representative of *all the people that the researcher wishes to know about* called the **population**. A **representative sample** *would include the same percentages of males, females, age groups, ethnic groups, and socio-economic groups as the larger population.*

Surveys gather information from many individuals in a short period of time, which is the greatest benefit for surveys. Additionally, surveys are inexpensive to administer. However, surveys typically yield surface information on a wide variety of factors, but may not allow for in-depth understanding of human behavior. *Another problem is that respondents may lie because they want to present themselves in the most favorable light, known as* **social desirability**. They also may be embarrassed to answer truthfully or are worried that their results will not be kept confidential. Additionally, questions can be perceived differently than intended.

**Interviews:** Rather than surveying participants, they can be **interviewed** *which means they are directly questioned by a researcher.* Interviewing participants on their behaviors or beliefs can solve the problem of misinterpreting the questions posed on surveys. The examiner can explain the questions and further probe responses for greater clarity and understanding. Although this can yield more accurate results, interviews take longer and are more expensive to administer than surveys. Participants can also demonstrate social desirability, which will affect the accuracy of the responses.

**Psychophysiological Assessment:** *Researchers may also record psychophysiological data, such as measures of heart rate, hormone levels, or brain activity to help explain development.* These measures may be recorded by themselves or in combination with behavioral data to better understand the bidirectional relations between biology and behavior. Special equipment has been developed to allow researchers to record the brain activity of very young and very small research subjects. One manner of understanding associations between brain development and behavioral advances is through the recording of event-related potentials (ERPs). ERPs are recorded by fitting a research participant with a stretchy cap that contains many small sensors or electrodes. These electrodes record tiny electrical currents on the scalp of the participant in response to the presentation of stimuli, such as a picture or a sound.



Figure 1.13

The use of ERPs has provided important insight as to how infants and children understand the world around them. Webb, Dawson, Bernier, and Panagiotides (2006) examined face and object processing in children with autism spectrum disorders, those with developmental delays, and those who were typically developing. The children wore electrode caps and had their brain activity

recorded as they watched still photographs of faces of their mother or of a stranger, and objects, including those that were familiar or unfamiliar to them. The researchers examined differences in face and object processing by group by observing a component of the brainwaves. Findings suggest that children with autism are in some way processing faces differently than typically developing children and those with more general developmental delays.

**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. 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.

## Conditional Research

In contrast to descriptive research, which is designed primarily to provide static pictures, correlational research involves the measurement of two or more relevant variables and an assessment of the relationship between or among those variables. For instance, the variables of height and weight are systematically related (correlated) because taller people generally weigh more than shorter people.

The **Pearson Correlation Coefficient**, *symbolized by the letter r, is the most common statistical measure of the strength of linear relationships among variable*s. The value of the correlation coefficient ranges from *r*= –1.00 to *r* = +1.00. The strength of the linear relationship is indexed by the distance of the correlation coefficient from zero (its absolute value). For instance, *r* = –.54 is a stronger relationship than *r*= .30, and *r* = .72 is a stronger relationship than *r* = –.57. The direction of the linear relationship is indicated by the sign of the correlation coefficient. Positive values of *r* (such as *r* = .54 or *r* = .67) indicate that the relationship is positive (i.e., the pattern of the dots on the scatter plot runs from the lower left to the upper right), whereas negative values of *r* (such as *r* = –.30 or *r* = –.72) indicate negative relationships (i.e., the dots run from the upper left to the lower right).

*When the straight line indicates that individuals who have high values for one variable also tend to have high values for the other variable*, as in part (a), the relationship is said to be ***positive correlation***. Examples of positive correlations include those between education and income, and between age and mathematical abilities in children. In each case people who score higher on one of the variables also tend to score higher
on the other variable. ***Negative correlations***, in contrast, as shown in part (b), *occur when high values for one variable tend to be associated with low values for the other varia*ble. Examples of negative correlations include those between the age of a child and the number of diapers the child uses, and between practice and errors made on a learning task. In these cases people who score higher on one of the variables tend to score lower on the other variable.

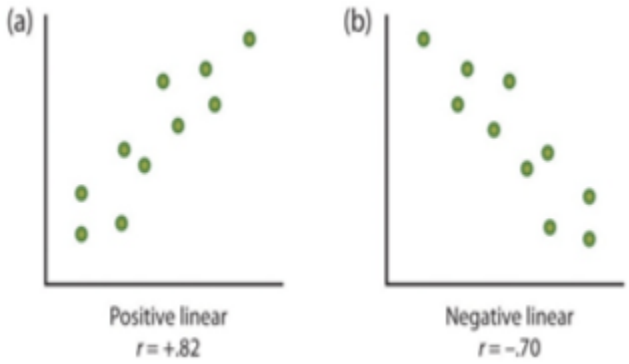



Figure 1.14: Some examples of relationships between two variables as shown in scatter plots. Source.

An important limitation of correlational research designs is that they cannot be used to draw conclusions about the causal relationships among the measured variables. Consider, for instance, a researcher who has hypothesized that viewing violent behavior will cause increased aggressive play in children. He has collected, from a sample of fourth-grade children, a measure of how much violent television each child views during the week, as well as a measure of how aggressively each child plays. The researcher discovers a positive correlation between the two measured variables. Although this positive correlation appears to support the hypothesis, it cannot be taken to indicate that viewing violent television causes aggressive behavior as there are other possible explanations. One alternative is that children who behaved aggressively at school want to watch violent television shows. Still another possible explanation for the observed correlation is that it has been produced by the presence of a *third*

*variable*.

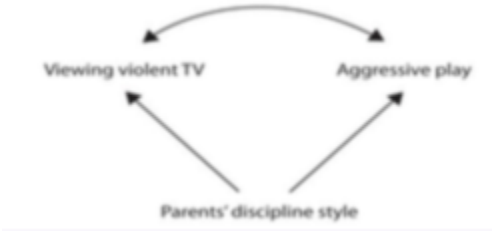



Figure 1.15.

A **third variable** is *a variable that is not part of the research hypothesis but produces the observed correlation between them*. In our example a potential third variable is the discipline style of the children's parents. Parents who use a harsh and punitive discipline style may produce children who both like to watch violent television and who behave aggressively in comparison to children whose parents use less harsh discipline.

For this reason, we are left with the basic limitation of correlational research: **Correlation does not demonstrate causation**! It is important that when you read about correlational research projects, you keep in mind the possibility of third variables.

**Strengths and limitations:** Correlational research can be used when experimental research is not possible because the variables cannot be manipulated or it would be unethical to use an experiment. Correlational designs also have the advantage of allowing the researcher to study behavior as it occurs in everyday life. We can also use correlational designs to make predictions. For instance, we can predict from the scores on a battery of tests the success of job trainees during a training session. However, we cannot use such correlational information to determine whether one variable caused another variable. For that, researchers rely on an experiment.

## Experimental Research

The goal of the **experimental method** is to provide more definitive conclusions about the causal relationships among the variables in a research hypothesis than what is available from correlational research. Experiments are designed to test **hypotheses**, or *specific statements about the relationship between variables***.** Experiments are conducted in a controlled setting in an effort to explain how certain factors or events produce outcomes. A **variable** is *anything that changes in value*. In the experimental research design, the variables of interest are called the independent variable and the dependent variable. The **independent variable** *in an experiment is the causing variable that is created or manipulated by the experimenter*. The **dependent variable** *in an experiment is a measured variable that is expected to be influenced by the experimental manipulation.*

A good experiment randomly assigns participants to at least two groups that are compared. The **experimental group** receives the treatment under investigation, while the **control group** does not receive the treatment the experimenter is studying as a comparison. For instance, to assess whether violent TV affects aggressive behavior the experimental group might view a violent television show, while the control group watches a non-violent show. Additionally, experimental designs control for **extraneous variables**, or *variables that are not part of the experiment that could inadvertently effect either the experimental or control group, thus distorting the results.*

Despite the advantage of determining causation, experiments do have limitations. One is that they are often conducted in laboratory situations rather than in the everyday lives of people. Therefore, we do not know whether results that we find in a laboratory setting will necessarily hold up in everyday life. Second, and more important, is that some of the most interesting and key social variables cannot be experimentally manipulated because of ethical concerns. If we want to study the influence of abuse on children's development of depression, these relationships must be assessed using correlational designs because it is simply not ethical to experimentally manipulate these variables. Characteristics of descriptive, correlational, and experimental research designs can be found in Table 1.5.

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

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# 1.9: Research Involving Time-Spans

**Cross-sectional research** *compares samples that represent a cross-section of the population who vary in age.* Participants might be asked to complete a survey or take a test of some physical or cognitive skill. The attitudes or skill levels based on age are compared. In cross-sectional research, respondents are measured only once, and consequently this method is not expensive or time consuming. In addition, because participants are only tested at one point in time, practice effects are not an issue as children do not have the opportunity to become better at the task over time. There is also no need to keep in contact with, or follow-up with, participants over time.

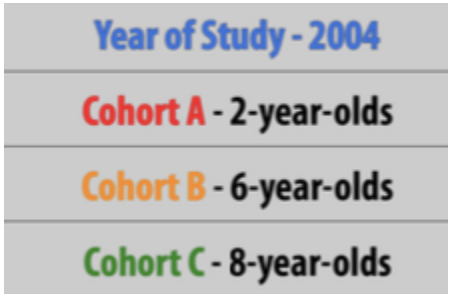



Figure 1.16 Cross-sectional. Source.

However, cross-sectional research does not allow the researcher to look at the *impact of having been born in a certain time-period, which is known as the* **cohort effect**. For example, those born during the depression have very different views about and experiences with the internet than those born in the last twenty years. Different attitudes about the Internet, for example, might not be due to a person's biological age as much as their life experiences as members of a cohort.

**Longitudinal research** *involves studying a group of people who are the same age, and measuring them repeatedly over a period-of-time.* This type of design allows researchers to study individual differences in development. Longitudinal studies may be conducted over the short term, such as a span of months, or over much longer durations including years or decades. For these reasons, longitudinal research designs are optimal for studying stability and change over time.

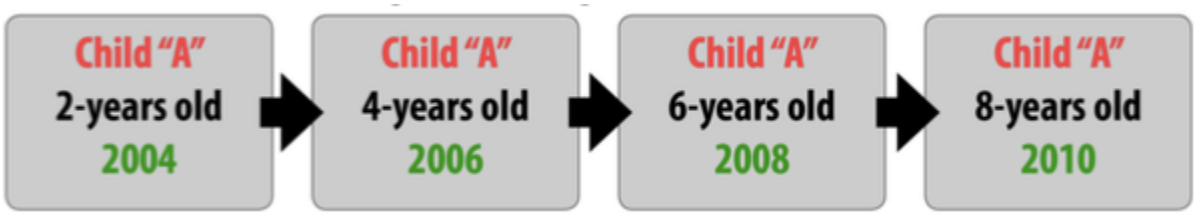



Figure 1.17: Longitudinal research. Source.

Problems with longitudinal research include being very time consuming and expensive. Researchers must maintain continued contact with participants over time, and these studies necessitate that scientists have funding to conduct their work over extended durations. An additional risk is attrition. **Attrition** *occurs when participants fail to complete all portions of a study.* Participants may move, change their phone numbers, or simply become disinterested in participating over time. Researchers should account for the possibility of attrition by enrolling a larger sample into their study initially, as some participants will likely drop out over time. Even with a large sample size, the experimenter never knows if there was something different about the individuals who dropped out versus those that remained in the study.

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

**Sequential research** *includes elements of both longitudinal and cross-sectional research designs.* Similar to longitudinal designs, sequential research features participants who are followed over time; similar to cross-sectional designs, sequential work

includes participants of different ages. This research design is also distinct from those that have been discussed previously in that individuals of different ages are enrolled into a study at various points in time to examine age-related changes, development within the same individuals as they age, and account for the possibility of cohort effects.

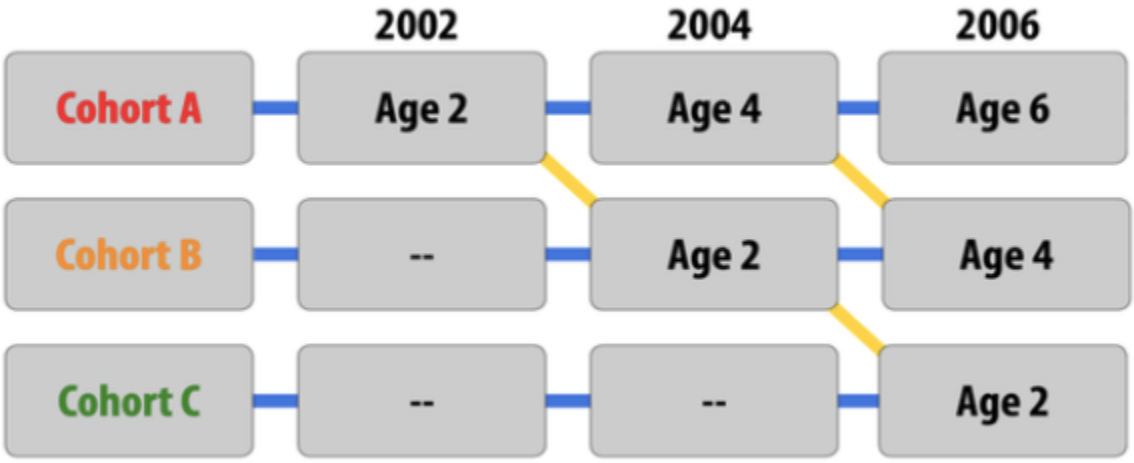



Figure 1.18: Sequential research. Source.

For example, in a study with a sequential design, a researcher might enroll three separate groups of children (Groups A, B, and C). Children in Group A would be enrolled when they are 2 years old and would be tested again when they are 4 and 6 years old. This is similar in design to the longitudinal study described previously. Children in Group B would be enrolled when they are 4 years old and would be tested again when they are 6 and 8 years old. Finally, children in Group C would be enrolled when they are 6 years old and would be tested again when they are 8 and 10 years old. Sequential designs are appealing because they allow researchers to learn a lot about development in a relatively short amount of time. In this example, a four-year research study would provide information about 8 years of developmental time by enrolling children ranging in age from two to ten years old.

Because they include elements of longitudinal and cross-sectional designs, sequential research has many of the same strengths and limitations as these other approaches. For example, sequential work may require less time and effort than longitudinal research, but more time and effort than cross-sectional research. Although practice effects may be an issue if participants are asked to complete the same tasks or assessments over time, attrition may be less problematic than what is commonly experienced in longitudinal research since participants may not have to remain involved in the study for such a long period-of-time. Table 1.6 identifies advantages and disadvantages for each of the described time span research design.

| | Advantages | Disadvantages |
|---|---|---|
| Longitudinal | • Examines changes within individuals over time<br>• Provides a developmental analysis | • Expensive<br>• Takes a long time<br>• Participant attrition<br>• Possibility of practice effects<br>• Cannot examine cohort effects |
| Cross-sectional | • Examines changes between participants of different ages at the same point in time<br>• Provide information on age-related change | • Cannot examine change over time<br>• Cannot examine cohort effects |

| | Advantages | Disadvantages |
|---|---|---|
| Sequential | • Examines changes within individuals over time<br>• Examines changes between participants of different ages at the same point in time<br>• Can be used to examine cohort effects | • May be expensive<br>• Possibility of practice effects |

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# 1.10: Experimental Research

**Conducting Ethical Research**

One of the issues that all scientists must address concerns the ethics of their research. Research in psychology may cause some stress, harm, or inconvenience for the people who participate in that research.Psychologistsmayinducestress,anxiety,ornegativemoodsintheir participants, expose them to weak electrical shocks, or convince them to behave in ways that violate their moral standards. Additionally researchers may sometimes use animals, potentially harming them in the process.

Decisions about whether research is ethical are made using established ethical codes developed by scientific organizations, such as the American Psychological Association, and federal governments. In the United States, the Department of Health and Human Services provides the guidelines for ethical standards in research. The following are the American Psychological Association code of ethics when using humans in research (APA, 2002).

- **No Harm:** The most direct ethical concern of the scientist is to prevent harm to the research participants.
- **Informed Consent:** Researchers must obtain **informed consent**, which *explains as much as possible about the true nature of the study, particularly everything that might be expected to influence willingness to participate*. Participants can withdraw their consent to participate at any point.

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. Further, this adult is almost always present as the study is conducted. Children are not asked to indicate whether they would like to be involved in a study 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, such as determining whether a child is too tired or upset to continue, as well as to what the 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 research.

- **Confidentiality:** Researchers must also protect the privacy of the research participants' responses by not using names or other information that could identify the participants.
- **Deception: Deception** *occurs whenever research participants are not completely and fully informed about the nature of the research project before participating in it*. Deception may occur when the researcher tells the participants that a study is about one thing when in fact it is about something else, or when participants are not told about the hypothesis.
- **Debriefing:** At the end of a study **debriefing**, *which is a procedure designed to fully explain the purposes and procedures of the research and remove any harmful aftereffects of participation,* must occur.

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# 1.11: 49 Up

The film is the seventh film in a series of landmark documentaries that began 42 years ago when UK-based Granada's World in Action team, inspired by the Jesuit maxim "Give me the child until he is seven and I will give you the man," interviewed a diverse group of seven-year-old children from all over England. They asked them about their lives and their dreams for the future. Michael Apted, a researcher for the original film, has returned to interview the "children" every seven years since, at ages 14, 21, 28, 35, 42 and now again at age 49.

## Contributors and Attributions

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# 1.12: Meet Neil

The original concept of the film was to interview 14 children from diverse backgrounds from all over England, asking them about their lives and their dreams for the future. Every seven years, renowned director Michael Apted, a researcher for Seven Up, has been back to talk to them, examining the progression of their lives. Learn more about Neil in this clip, who has taken a path less traveled in life, at age 49. . .

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# 2: HEREDITY, PRENATAL DEVELOPMENT, AND BIRTH

## Learning Objectives: Heredity

- Define genes
- Distinguish between mitosis and meiosis, genotype and phenotype, homozygous and heterozygous, and dominant and recessive
- Describe some genetic disorders, due to a gene defect, and chromosomal disorders
- Define polygenic and incomplete dominance
- Describe the function of genetic counseling and why individuals may seek genetic counseling
- Define behavioral genetics, describe genotype-environment correlations and genotype-environmental interactions, and define epigenetics

In this chapter, we will begin by examining some of the ways in which heredity helps to shape the way we are. We will look at what happens genetically during conception, and describe some known genetic and chromosomal disorders. Next we will consider what happens during prenatal development, including the impact of teratogens. We will also discuss the impact that both the mother and father have on the developing fetus. Next we will present the birth process and some of the complications that can occur during delivery. Before going into these topics, however, it is important to understand how genes and chromosomes affect development.


2.1: Introduction to Heredity, Prenatal Development, and Birth

2.2: Heredity

2.3: Genotypes and Phenotypes

2.4: Genetic Disorders

2.5: Chromosomal Abnormalities

2.6: Behavioral Genetics

2.7: Prenatal Development

2.8: Introduction and Prenatal Development Study Guide

2.9: Teratogens

2.10: Maternal Factors

2.11: 2.9 Prenatal Assessment

2.12: Complications of Pregnancy

2.13: Birth

2.14: Assessing the Neonate

2.15: Introduction to Lifespan, Theories and Research, Beginnings Self-Quiz

2.16: "Life's Greatest Miracle"

2.R: Heredity, Prenatal Development, and Birth (References)



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# 2.1: Introduction to Heredity, Prenatal Development, and Birth

**Learning Objectives**

- Define gene.
- Define chromosome.
- Define gamete.
- Explain what determines the chromosomal sex of the child.
- Question the assertion that human traits are genetic.
- Compare monozygotic and dizygotic twins.
- Differentiate between genetic disorders and chromosomal abnormalities.
- Describe Trisomy 21.
- Differentiate between the germinal, embryonic, and fetal periods of development.
- Describe human development during the germinal, embryonic, and fetal periods.
- Describe a normal delivery and complications of pregnancy and delivery.
- Predict the risks to prenatal development posed by exposure to teratogens.
- Interpret APGAR scores.
- Discover problems of newborns

## Heredity: The Epigenetic Framework

### Nature or Nurture?

In this lesson, we will look at some of the ways in which heredity helps to shape the way we are. We will look at what happens genetically during conception and take a brief look some genetic abnormalities. Before going into these topics, however, it is important to emphasize the interplay between heredity and the environment. Why are you the way you are? As you consider some of your features (height, weight, personality, being diabetic, etc.), ask yourself whether these features are a result of heredity or environmental factors-or both. Chances are, you can see the ways in which both heredity and environmental factors (such as lifestyle, diet, and so on) have contributed to these features. For decades, scholars have carried on the "nature/nurture" debate. For any particular feature, those on the "nature" side would argue that heredity plays the most important role in bringing about that feature. Those on the "nurture" side would argue that one's environment is most significant in shaping the way we are. This debate continues in questions about what makes us masculine or feminine (Lippa, 2002), concerns about vision (Mutti, Kadnik and Adams, 1996), and many other developmental issues. (Check out www.googlescholar.com for over 20,000 entries for "current nature/nurture debates"!) Yet most scholars agree that there is a constant interplay between the two forces. It is difficult to isolate the root of any single behavior as a result solely of nature or nurture and most scholars believe that even determining the extent to which nature or nurture impacts a human feature is difficult to answer. In fact, almost all human features are polygenic (a result of many genes) and multifactorial (a result of many factors, both genetic and environmental). It's as if one's genetic make-up sets up a range of possibilities, which may or may not be realized depending upon one's environmental experiences. For instance, a person might be genetically predisposed to develop diabetes, but the person's lifestyle may help bring about the disease.

### The Epigenetic Framework

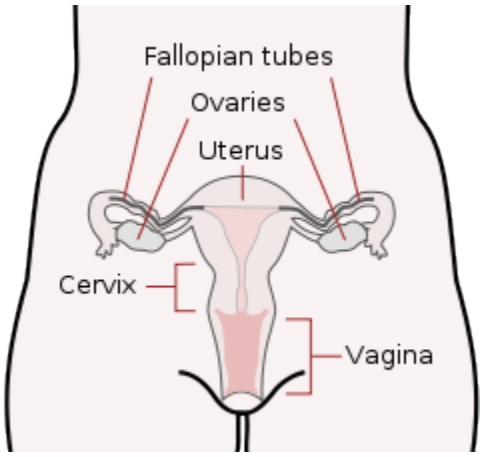
Gottlieb (1998, 2000, 2002) suggests an analytic framework for the nature/nurture debate that recognizes the interplay between the environment, behavior, and genetic expression. This bidirectional interplay suggests that the environment can effect the expression of genes just as genetic predispositions can impact a person's potentials. And environmental circumstances can trigger symptoms of a genetic disorder. For example, a person who has sickle cell anemia, a recessive gene linked disorder, can experience a sickle cell crisis under conditions of oxygen deprivation. Someone predisposed genetically for type two diabetes can trigger the disease through poor diet and little exercise.

## The Human Genome Project

The Human Genome Project is an internationally funded effort to map the locations of human genes and understand the role these genes play in development, health and illness. (Check out recent developments at www.genome.gov) Genes are segments of chromosomes (46 strands of a chemical substance called DNA that are contained in the nucleus of each normal human cell) that vary in length. There are an estimated 25,000 to 30,000 genes on each chromosome; a number far below the estimate of 100,000-150,000 held before the work of the Human Genome Project.

Understanding the role of genes in health and illness can bring about both harm and good (Weitz, 2007). A person who knows that they are at risk for developing a genetic disorder may be able to adopt lifestyle practices that minimize the risk and a person who discovers that they are not at risk may find comfort in knowing that they do not have to fear a particular disease. However, a person who finds out that they are at risk and there is nothing that can be done about it may experience years of fear and anxiety. And the availability of genetic testing may be more widespread than the availability of genetic counseling which can be very expensive. The possible stigma and discrimination that those with illness or at risk for illness must also be considered. In light of the high costs of health insurance, many companies are starting to offer benefits contingent on health assessments and lifestyle recommendations; and continued coverage depends on an employee following these recommendations. So a smoker may have to pay a higher premium than a non-smoker or a person who is overweight may be required to engage in a program of exercise and be monitored for improvement. What if a person finds out that they carry the gene for Huntington's disease (a neurological disorder that is ultimately fatal) which may surface when a person reaches their 40s? The impact this knowledge will have on health care still remains unknown. Who should know what is on your genome? Do you think this information should be shared between mates? What about employers? What would be the advantages and disadvantages?

## 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.

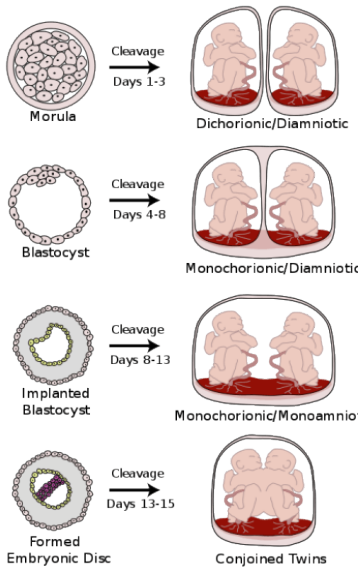
Many potential parents have a clear preference for having a boy or a girl and would like to determine the sex of the child. Through the years, a number of tips have been offered for the potential parents to maximize their chances for having either a son or daughter as they prefer. For example, it has 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. Today, however, there is new technology available that makes it possible to isolate sperm containing either an X or a Y, depending on the preference, and use that sperm to fertilize a mother's egg.

## Monozygotic and Dizygotic Twins

Monozygotic twins occur when a single zygote or fertilized egg splits apart in the first two weeks of development. The result is the creation of two separate but genetically identical offspring. About one-third of twins are monozygotic twins. Are you an identical twin?

Sometimes, however, two eggs or ova are released and fertilized by two separate sperm. The result is dizygotic or fraternal twins. About two-thirds of twins are dizygotic. These two individuals share the same amount of genetic material as would any two children from the same mother and father. Older mothers are more likely to have dizygotic twins than are younger mothers and couples who use fertility drugs are also more likely to give birth to dizygotic twins. Consequently, there has been in increase in the number of fraternal twins in recent years (Bortolus et. al., 1999).

What are the other possibilities? Various degrees of sharing the placenta can occur depending on the timing of the separation and duplication of cells. This is known as placentiation. Here is a diagram that illustrates various types of twins.




*Author Kevin Dufenbach*

## Genotypes and Phenotypes (or why what you get is not always what you see)

The word genotype refers to the sum total of all the genes a person inherits. The word phenotype refers to the features that are actually expressed. Look in the mirror. What do you see, your genotype or your phenotype? What determines whether or not genes are expressed? Actually, this is quite complicated (Berger, 2005). Some features follow the additive pattern which means that many different genes contribute to a final outcome. Height and skin tone are examples. In other cases, a gene might either be turned on or off depending on the gene with which it is paired. Some genes are considered dominant because they will be expressed. Others, termed recessive, are only expressed in the absence of a dominant gene. Some characteristics which were once thought of as dominant-recessive, such as eye color, are now believed to be a result of the interaction between several genes (McKusick, 1998). Dominant traits include curly hair, facial dimples, normal vision, and dark hair. Recessive characteristics include red hair, pattern baldness, and nearsightedness. Sickle cell anemia is a recessive disease; Huntington disease is a dominant disease. Other traits are a result of partial dominance or co-dominance in which both genes are influential. For example, if a person inherits both recessive genes for sickle cell anemia, the disease will occur. But if a person has only one recessive gene for the disease, the person may experience effects of the disease only under circumstances of oxygen deprivation such as high altitudes or physical exertion (Berk, 2004).

## Chromosomal Abnormalities and Genetic Disorders

A chromosomal abnormality occurs when there a child inherits too many or two few chromosomes. The most common cause of chromosomal abnormalities is the age of the mother. A 20 year old woman has a 1 in 800 chance of having a child with a common chromosomal abnormality. A woman of 44, however, has a one in 16 chance. It is believed that the problem occurs when the ovum is ripening prior to ovulation each month. As the mother ages, the ovum is more likely to suffer abnormalities at this time.

Some gametes do not divide evenly when they are forming. Therefore, some cells have more than 46 chromosomes. In fact, it is believed that close to half of all zygotes have an odd number of chromosomes. Most of these zygotes fail to develop and are spontaneously aborted by the body. If the abnormal number occurs on pair #21 or # 23, however, the individual may have certain physical or other abnormalities.

One of the most common chromosomal abnormalities is on pair 21. Trisomy 21 occurs when there are three rather than two chromosomes on #21. A person with Down syndrome experiences problems such as mental retardation and certain physical features such as having short fingers and toes, having folds of skin over the eyes, and a protruding tongue. Life expectancy of persons with Down syndrome has increased in recent years. Keep in mind that there is as much variation in people with Down Syndrome as in most populations and those differences need to be recognized and appreciated. Watch the following video clip about Down Syndrome from the National Down Syndrome Society:

When the abnormality is on pair #23, the result is a sex-linked chromosomal abnormality. A person might have XXY, XYY, XXX, XO, or 45 or 47 chromosomes as a result. Two of the more common sex-linked chromosomal disorders are Turner's syndrome and Klinefelter's syndrome. Turner's syndrome occurs in 1 of every 2,500 live female births (Carroll, 2007) when an ovum which lacks a chromosome is fertilized by a sperm with an X chromosome. The resulting zygote has an XO composition. Fertilization by a Y sperm is not viable. Turner syndrome affects cognitive functioning and sexual maturation. The external genitalia appear normal, but breasts and ovaries do not develop fully and the woman does not menstruate. Turner's syndrome also results in short stature and other physical characteristics. Learn more at www.turnersyndrome.org/. Klinefelter's syndrome (XXY) occurs in 1 out of 700 live male births and results when an ovum containing an extra X chromosome is fertilized by a Y sperm. The Y chromosome stimulates the growth of male genitalia, but the additional X chromosome inhibits this development. An individual with Klinefelter's syndrome has some breast development, infertility (this is the most common cause of infertility in males), and has low levels of testosterone.

Most of the known genetic disorders are dominant gene-linked; however, the vast majority of dominant gene linked disorders are not serious disorders, or if they are, they may still not be debilitating. For example, the majority of those with Tourette's Syndrome suffer only minor tics from time to time and can easily control or cover up their symptoms. Huntington's Disease is a dominant gene linked disorder that affects the nervous system and is fatal but does not appear until midlife. Recessive gene disorders, such as cystic fibrosis and sickel-cell anemia, are less common but may actually claim more lives because they are less likely to be detected as people are unaware that they are carriers of the disease. If the genes inherited from each parent are the same, the child is homozygous for a particular trait and will inherit the trait. If, however, the child inherits a gene from one parent but not the other, the child is heterozygous, and interaction between the genes will in part determine whether or not that trait is expressed (Berk, 2004).

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# 2.2: Heredity

As your recall from chapter one, nature refers to the contribution of genetics to one's development. The basic building block of the nature perspective is the gene. **Genes** are *recipes for making proteins*, while proteins influence the structure and functions of cells. Genes are located on the chromosomes and there are an estimated 20,500 genes for humans, according to the Human Genome Project (NIH, 2015). See Box 2.2 at the end of this section for more details on the Human Genome Project.

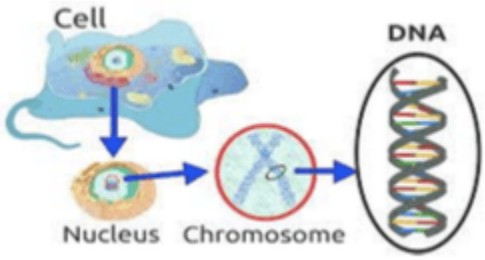



Figure 2.1. Source.

Normal human cells contain 46 chromosomes (or 23 pairs; one from each parent) in the nucleus of the cells. After conception, most cells of the body are created by a process called mitosis. **Mitosis** *is defined as the cell's nucleus making an exact copy of all the chromosomes and splitting into two new cells*. However, the cells used in sexual reproduction, called the gametes (sperm or ova), are formed in a process called meiosis. In **meiosis** *the gamete's chromosomes duplicate, and then divide twice resulting in four cells containing only half the genetic material of the original gamete*. Thus, each sperm and egg possesses only 23 chromosomes and combine to produce the normal 46. See Figure 2.2 for details on both mitosis and meiosis. Given the amount of genes present and the unpredictability of the meiosis process, the likelihood of having offspring that are genetically identical (and not twins) is one in trillions (Gould & Keeton, 1997).

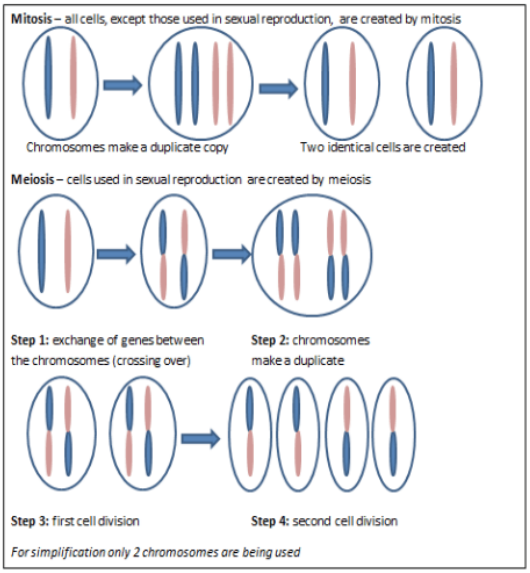



Figure 2.1: Mitosis vs. Meiosis

Of the 23 pairs of chromosomes created at conception, 22 pairs are similar in length. These are called autosomes. The remaining pair, or sex chromosomes, may differ in length. If a child receives the combination of XY the child will be genetically male. If the child receives the combination XX the child will be genetically female.

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# 2.3: Genotypes and Phenotypes

The word **genotype** *refers to the sum total of all the genes a person inherits*. The word **phenotype** *refers to the features that are actually expressed*. Look in the mirror. What do you see, your genotype or your phenotype? What determines whether or not genes are expressed? Because genes are inherited in pairs on the chromosomes, *we may receive either the same version of a gene from our mother and father, that is, be* **homozygous** for that characteristic the gene influences. *If we receive a different version of the gene from each parent, that is referred to as* **heterozygous.** In the homozygous situation we will display that characteristic. It is in the heterozygous condition that it becomes clear that not all genes are created equal. Some genes are **dominant**, meaning they *express themselves in the phenotype even when paired with a different version of the gene*, while their silent partner is called recessive. **Recessive** genes *express themselves only when paired with a similar version gene*. Geneticists refer to *different versions of a gene as* **alleles.** Some dominant traits include having facial dimples, curly hair, normal vision, and dark hair. Some recessive traits include red hair, being nearsighted, and straight hair.

Most characteristics are not the result of a single gene; they are **polygenic**, *meaning they are the result of several genes*. In addition, the dominant and recessive patterns described above are usually not that simple either. *Sometimes the dominant gene does not completely suppress the recessive gene; this is called* **incomplete dominance**. An example of this can be found in the recessive gene disorder sickle cell disease. The gene that produces healthy round-shaped red blood cells is dominant. The recessive gene causes an abnormality in the shape of red blood cells; they take on a sickle form, which can clog the veins and deprive vital organs of oxygen and increase the risk of stroke. To inherit the disorder a person must receive the recessive gene from both parents. *Those who have inherited only one recessive-gene are called* **carriers** and should be unaffected by this recessive trait. Yet, carriers of sickle cell have some red blood cells that take on the c-shaped sickle pattern. Under circumstances of oxygen deprivation, such as high altitudes or physical exertion, carriers for the sickle cell gene may experience some of the symptoms of sickle cell (Berk, 2004).

## Box 2.1 Monozygotic and dizygotic twins

Many students are interested in twins. **Monozygotic** *or identical twins occur when a fertilized egg splits apart in the first two weeks of development*. The result is the creation of two separate, but genetically identical offspring. That is, they possess the same genotype and often the same phenotype. About one-third of twins are monozygotic twins. Sometimes, however, *two eggs or ova are released and fertilized by two separate sperm. The result is* **dizygotic** *or fraternal twins*. These two individuals share the same amount of genetic material as would any two children from the same mother and father. In other words, they possess a different genotype and phenotype. Older mothers are more likely to have dizygotic twins than are younger mothers, and couples who use fertility drugs are also more likely to give birth to dizygotic twins. Consequently, there has been an increase in the number of fraternal twins recently (Bortolus et al., 1999).





*Monozygotic Twins (Source) versus Dizygotic twins (Source)*

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# 2.4: Genetic Disorders

Most of the known genetic disorders are dominant gene-linked; however, the vast majority of dominant gene linked disorders are not serious or debilitating. For example, the majority of those with Tourette's Syndrome suffer only minor tics from time to time and can easily control their symptoms. Huntington's Disease is a dominant gene linked disorder that affects the nervous system and is fatal, but does not appear until midlife. Recessive gene disorders, such as cystic fibrosis and sickle-cell anemia, are less common but may actually claim more lives because they are less likely to be detected as people are unaware that they are carriers of the disease. Some genetic disorders are **sex-linked**; *the defective gene is found on the X-chromosome*. Males have only one X chromosome so are at greater risk for sex-linked disorders due to a recessive gene, such as hemophilia, color-blindness, and baldness. For females to be affected by the genetic defects, they need to inherit the recessive gene on both X-chromosomes, but if the defective gene is dominant, females can be equally at risk. Table 2.1 lists several genetic disorders.

*Table 2.1 Genetic Disorders*

| **Recessive disorders (homozygous): the individual inherits a gene change from both parents. If the gene is inherited from just one parent, the person is a carrier and does not have the condition.** | **Cases per Birth** |
|---|---|
| • **Sickle Cell Disease** (SCD) is a condition in which the red blood cells in the body are shaped like a sickle (like the letter C) and affect the ability of the blood to transport oxygen. Carriers may experience some effects but do not have the full condition. | 1 in 500 Black births<br><br>1 in 36,000 Hispanic births |
| • **Cystic Fibrosis** (CF) is a condition that affects breathing and digestion due to thick mucus building up in the body, especially the lungs and digestive system. In CF, the mucus is thicker than normal and sticky. | 1 in 3500 |
| • **Phenylketonuria** (PKU) is a metabolic disorder in which the individual cannot metabolize phenylalanine, an amino acid. Left untreated, intellectual deficits occur. PKU is easily detected and is treated with a special diet. | 1 in 10,000 |
| • **Tay Sachs Disease** is caused by enzyme deficiency resulting in the accumulation of lipids in the nerve cells of the brain. This accumulation results in progressive damage to the cells and a decrease in cognitive and physical development. Death typically occurs by age five. | 1 in 4000; 1 in 30 American Jews is a carrier; 1 in 20 French Canadians is a carrier |
| • **Albinism** is when the individual lacks melanin and possesses little to no pigment in the skin, hair, and eyes. Vision problems can also occur. | Fewer than 20,000 US cases per year |

| **Autosomal Dominant Disorders (heterozygous)**: In order to have the disorder, the individual only needs to inherit the gene change from one parent. | **Cases per Birth** |
|---|---|
| • **Huntington's Disease** is a condition that affects the individual's nervous system. Nerve cells become damaged, causing various parts of the brain to deteriorate. The disease affects movement, behavior, and cognition. It is fatal and occurs at midlife. | 1 in 10,000 |

| | |
|---|---|
| • **Tourette Syndron** is a tic disorder which results in uncontrollable motor and vocal tics as well as body jerking. | 1 in 250 |
| • **Achondroplasia** is the most common form of disproportionate short stature. The individual has abnormal bone growth resulting in short stature, disproportionately short arms and legs, short fingers, a large heard, and specific facial features. | 1 in 15,000-40,000 |

| **Sex-Linked Disorders**: When the X chromosome carries the mutated gene, the disorder is referred to as an X-linked disorder. Males are more affected than females because they possess only one X chromosome without an additional X chromosome to counter the harmful gene. | **Cases per Birth** |
|---|---|
| • **Fragile X Syndrome** occurs when the body cannot make enough of a protein it needs for the brain to grow and problems with learning and behavior can occur. Fragile X syndrome is caused from an abnormality in the X chromosome, which then breaks. If a female has fragile X, her second X chromosome is usually healthy, but males with fragile X don't have a second healthy X chromosome. This is why symptoms of fragile X syndrome are usually more serious in males. | 1 in 4000 males<br><br>1 in 8000 females |
| • **Hemophilia** occurs when there are problems in blood clotting, causing both internal and external bleeding. | 1 in 10,000 males |
| • **Duchenne Muscular Dystrophy** is a weakening of the muscles, resulting in an inability to move, wasting away, and possible death. | 1 in 3500 males |

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# 2.5: Chromosomal Abnormalities

A **chromosomal abnormality** *occurs when a child inherits too many or two few chromosomes*. The most common cause of chromosomal abnormalities is the age of the mother. As the mother ages, the ovum is more likely to suffer abnormalities due to longer term exposure to environmental factors. Consequently, some gametes do not divide evenly when they are forming. Therefore, some cells have more than 46 chromosomes. In fact, it is believed that close to half of all zygotes have an odd number of chromosomes. Most of these zygotes fail to develop and are spontaneously aborted by the mother's body.

One of the most common chromosomal abnormalities is on pair 21. **Trisomy 21 or Down Syndrome** *occurs when there are three rather than two 21st chromosomes*. A person with Down Syndrome typically exhibits an intellectual disability and possesses certain physical features, such as short fingers and toes, folds of skin over the eyes, and a protruding tongue. There is as much variation in people with Down Syndrome as in most populations, and those differences need to be recognized and appreciated. Other less common chromosomal abnormalities of live-born infants occur on chromosome 13 and chromosome 18. Refer to Table 2.2 on the prevalence of these chromosomal disorders in our home state of Illinois.

*Table 2.2: Illinois Prevalence Rates (2007-2011) for Trisomy 13, 18, and 21 based on Maternal Age*

| Chromosomal Disorder | Age<35 Prevalence Rate | Age>35 Prevalence Rate | Total Prevalence |
|---|---|---|---|
| Trisomy 13 | 1.0 per 10,000 | 35 Prevalence Rate">4.3 per 10,000 | 1.6 per 10,000 |
| Trisomy 18 | 0.9 per 10,000 | 35 Prevalence Rate">8.3 per 10,000 | 2.0 per 10,000 |
| Trisomy 21 | 6.9 per 10,000 | 35 Prevalence Rate">43.7 per 10,000 | 12.7 per 10,000 |

When the abnormality is on 23$^{rd}$ pair the result is a **sex-linked chromosomal abnormality**. A person might have XXY, XYY, XXX, XO. Two of the more common sex-linked chromosomal disorders are Turner Syndrome and Klinefelter Syndrome. **Turner Syndrome** *occurs when part or all of one of the X chromosomes is lost and the resulting zygote has an XO composition*. This occurs in 1 of every 2,500 live female births (Carroll, 2007) and affects the individual's cognitive functioning and sexual maturation. The external genitalia appear normal, but breasts and ovaries do not develop fully and the woman does not menstruate. Turner's syndrome also results in short stature and other physical characteristics. **Klinefelter Syndrome (XXY)** *results when an extra X chromosome is present in the cells of a male* and occurs in 1 out of 700 live male births. The Y chromosome stimulates the growth of male genitalia, but the additional X chromosome inhibits this development. An individual with Klinefelter Syndrome has some breast development, infertility (this is the most common cause of infertility in males), and has low levels of testosterone. See Table 2.3 for Chromosomal Disorders descriptions.

*Table 2.3 Chromosomal Disorders*

| Autosomal Chromosome Disorders: The individual inherits too many or two few chromosomes | Cases per Birth |
|---|---|
| • **Down Syndrome/Trisomy 21** is caused by an extra chromosome 21 and includes a combination of birth defects. Affected individuals have some degree of intellectual disability, characteristic facial features, often heart defects, and other health problems. The severity varies greatly among affected individuals. | 1 in 691; 1 in 300 births at age 35 |
| • **Trisomy 13** is caused by an extra chromosome 13. Affected individuals have multiple birth defects and generally die in the first weeks or months of life. | 1 in 7,906 |
| • **Trisomy 18** is caused by an extra chromosome 18 and the affected individual also has multiple birth defects and early death. | 1 in 3,762 |
| **Sex-Linked Chromosomal Disorders:** The disorder occurs on chromosome pair #23 or the sex chromosomes. | **Cases per Birth** |

| Autosomal Chromosome Disorders: The individual inherits too many or two few chromosomes | Cases per Birth |
|---|---|
| • **Turner Syndrome** is caused when all or part of one of the X chromosomes is lost before or soon after conception due to a random event. The resulting zygote has an XO composition. Turner Syndrome affects cognitive functioning and sexual maturation in girls. Infertility and a short stature may be noted. | 1 in 2500 females |
| • **Klinefelter Syndrome** is caused when an extra X chromosome is present in the cells of a male due to a random event. The Y chromosome stimulates the growth of male genitalia, but the additional X chromosome inhibits this development. The male can have some breast development, infertility, and low levels of testosterone. | 1 in 700 males |

**Genetic Counseling:** Genetic counseling refers to a service that assists individuals identify, test for, and explain potential genetic conditions that could adversely affect themselves or their offspring (CDC, 2015b). The common reasons for genetic counseling include:

- Family history of a genetic condition
- Membership in a certain ethnic group with a higher risk of a genetic condition
- Information regarding the results of genetic testing, including blood tests, amniocentesis, or ultra sounds
- Learning about the chances of having a baby with a genetic condition if the mother is older, has had several miscarriages, has offspring with birth defects, experiences infertility, or has a medical condition

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# 2.6: Behavioral Genetics

**Behavioral Genetics** *is the scientific study of the interplay between the genetic and environmental contributions to behavior.* Often referred to as the nature/nurture debate, Gottlieb (1998, 2000, 2002) suggests an analytic framework for this debate that recognizes the interplay between the environment, behavior, and genetic expression. This bidirectional interplay suggests that the environment can affect the expression of genes just as genetic predispositions can impact a person's potentials. Additionally, environmental circumstances can trigger symptoms of a genetic disorder. For example, a person who has sickle cell anemia, a recessive gene linked disorder, can experience a sickle cell crisis under conditions of oxygen deprivation. Someone predisposed genetically for type-two diabetes can trigger the disease through poor diet and little exercise.

Research has shown how the environment and genotype interact in several ways. **Genotype- Environment Correlations** *refer to the processes by which genetic factors contribute to variations in the environment* (Plomin, DeFries, Knopik, & Niederhiser, 2013). There are three types of genotype-environment correlations:

**Passive genotype-environment correlation** *occurs when children passively inherit the genes and the environments their family provides.* Certain behavioral characteristics, such as being athletically inclined, may run in families. The children have inherited both the genes that would enable success at these activities, and given the environmental encouragement to engage in these actions. Figure 2.3 highlights this correlation by demonstrating how a family passes on water skiing skills through both genetics and environmental opportunities.



Figure 2.3

**Evocative genotype-environment correlation** *refers to how the social environment reacts to individuals based on their inherited characteristics.* For example, whether one has a more outgoing or shy temperament will affect how he or she is treated by others.

**Active genotype-environment correlation** *occurs when individuals seek out environments that support their genetic tendencies.* This is also referred to as *niche picking*. For example, children who are musically inclined seek out music instruction and opportunities that facilitate their natural musical ability.

Conversely, **Genotype-Environment Interactions** *involve genetic susceptibility to the environment.* Adoption studies provide evidence for genotype-environment interactions. For example, the Early Growth and Development Study (Leve, Neiderhiser, Scaramella, & Reiss, 2010) followed 360 adopted children and their adopted and biological parents in a longitudinal study. Results have shown that children whose biological parents exhibited psychopathology, exhibited significantly fewer behavior problems when their adoptive parents used more structured parenting than unstructured. Additionally, elevated psychopathology in adoptive parents increased the risk for the children's development of behavior problems, but only when the biological parents' psychopathology was high. Consequently, the results show how environmental effects on behavior differ based on the genotype,

especially stressful environments on genetically at-risk children.

Lastly, **Epigenetics** studies modifications in DNA that affect gene expression and are passed on when the cells divide. Environmental factors, such as nutrition, stress, and teratogens are thought to change gene expression by switching genes on and off. These gene changes can then be inherited by daughter cells. This would explain why monozygotic or identical twins may increasingly differ in gene expression with age. For example, Fraga et al. (2005) found that when examining differences in DNA, a group of monozygotic twins were indistinguishable during the early years. However, when the twins were older there were significant discrepancies in their gene expression, most likely due to different experiences. These differences included susceptibilities to disease and a range of personal characteristics.

### Box 2.2 The Human Genome Project

In 1990 the Human Genome Project (HGP), an international scientific endeavor, began the task of sequencing the 3 billion base pairs that make up the human genome. In April of 2003, more than two years ahead of schedule, scientists have given us the genetic blueprint for building a human. Since this time, using the information from the HGP, researchers have discovered the genes involved in over 1800 diseases. In 2005 the HGP amassed a large data base called HapMap that catalogs the genetic variations in 11 global populations. Data on genetic variation can improve our understanding of differential risk for disease and reactions to medical treatments, such as drugs. Pharmacogenomic researchers have already developed tests to determine whether a patient will respond favorably to certain drugs used in the treatment of breast cancer or HIV by using information from HapMap (NIH, 2015).

Future directions for the HGP include identifying the genetic markers for all 50 major forms of cancer (The Cancer Genome Atlas), continued use of the HapMap for creating more effective drugs for the treatment of disease, and examining the legal, social and ethical implications of genetic knowledge (NIH, 2015).

From the outset, the HGP made ethical issues one of their main concerns. Part of the HGP's budget supports research and holds workshops that address these concerns. Who owns this information, and how the availability of genetic information may influence healthcare and its impact on individuals, their families, and the greater community are just some of the many questions being addressed (NIH, 2015).

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# 2.7: Prenatal Development

**Learning Objectives: Prenatal Development**

- Describe the changes that occur in the three periods of prenatal development
- Describe what occurs during prenatal brain development
- Define teratogens and describe the factors that influence their effects
- List and describe the effects of several common teratogens
- Explain maternal and paternal factors that affect the developing fetus
- Explain the types of prenatal assessment
- Describe both the minor and major complications of pregnanc

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

## The Germinal Period

The germinal period (about 14 days in length) lasts from conception to implantation of the fertilized egg in the lining of the uterus (Figure 2.5). 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. It is typically fertilized in the top section of the fallopian tube and continues its journey to the uterus. As a result, a new cell is formed. *This cell, containing the combined genetic information from both parents*, is referred to as a **zygote.**

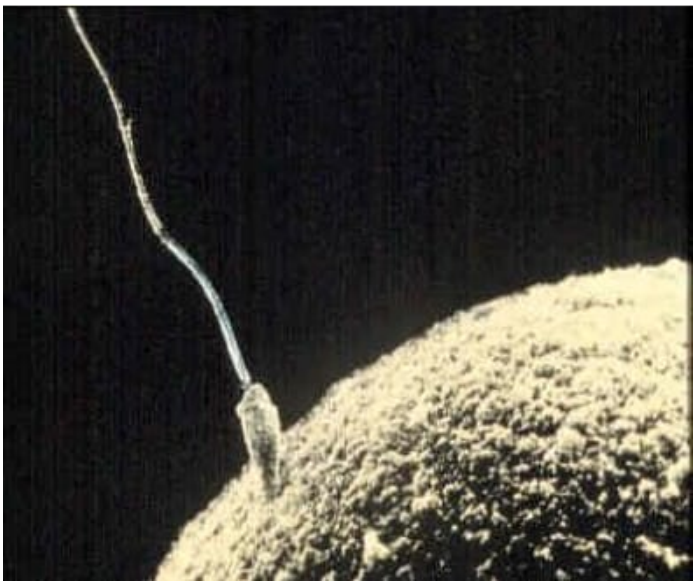


Figure 2.4: Sperm and Ovum at Conception

During this time, the organism begins cell division through mitosis. After five days of mitosis there are 100 cells, which is now called a **blastocyst**. *The blastocyst consists of both an inner and outer group of cells. The inner group of cells, or* **embryonic disk** *will become the embryo*, while *the outer group of cells,* or **trophoblast**, *becomes the support system which nourishes the developing organism*. This stage ends when the blastocyst fully implants into the uterine wall (U.S. National Library of Medicine, 2015).

Mitosis is a fragile process and fewer than one half of all zygotes survive beyond the first two weeks (Hall, 2004). Some of the reasons for this include the egg and sperm do not join properly, thus their genetic material does not combine, there is too little or

damaged genetic material, the zygote does not replicate, or the blastocyst does not implant into the uterine wall. The failure rate is higher for in vitro conceptions. Figure 2.5 illustrates the journey of the ova from its release to its fertilization, cell duplication, and implantation into the uterine lining.

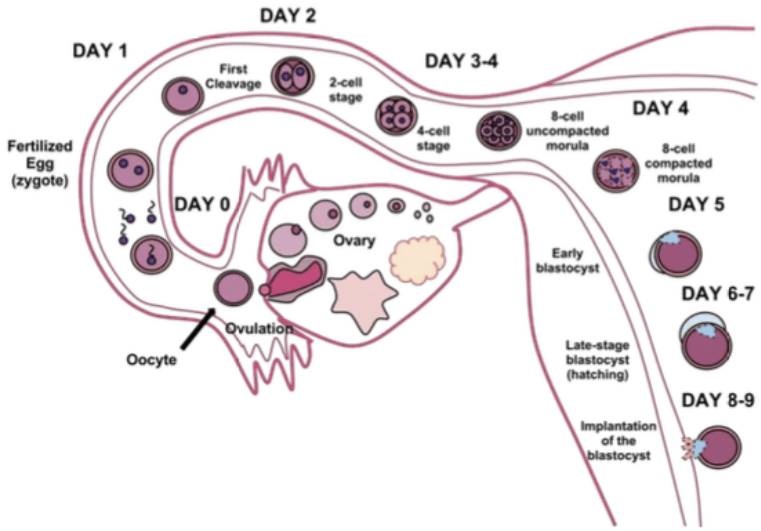



Figure 2.5: "Human Fertilization" by Ttrue12. Source.

## The Embryonic Period

Starting the third week the blastocyst has implanted in the uterine wall. *Upon implantation this multi-cellular organism* is called an **embryo**. Now blood vessels grow forming the **placenta**. *The placenta is a structure connected to the uterus that provides nourishment and oxygen from the mother to the developing embryo via the umbilical cord*. During this period, cells continue to differentiate. Growth during prenatal development occurs in two major directions: *from head to tail* called **cephalocaudal development** and *from the midline outward* referred to as **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). The head develops in the fourth week and the precursor to the heart begins to pulse. In the early stages of the embryonic period, gills and a tail are apparent. However, by the end of this stage they disappear and the organism takes on a more human appearance. About 20 percent of organisms fail during the embryonic period, usually due to gross chromosomal abnormalities. As in the case of the germinal period, often the mother does not yet know that she is pregnant. 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 embryo during this time. The embryo is approximately 1 inch in length and weighs about 4 grams at the end of eight weeks. The embryo can move and respond to touch at this time.



Figure 2.6: The Embryo. Photo by Lunar Caustic.

## 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 third month, the fetus has all its body parts including external genitalia. In the following weeks, the fetus will develop hair, nails, teeth and the excretory and digestive systems will continue to develop. The fetus is about 3 inches long and weighs about 28 grams.



Figure 2.7: Fetus. Source.

During the $4^{th}$ - $6^{th}$ months, the eyes become more sensitive to light and hearing develops. The respiratory system continues to develop, and reflexes such as sucking, swallowing and hiccupping, develop during the $5^{th}$ month. Cycles of sleep and wakefulness are present at this time as well. *The first chance of survival outside the womb, known as the* **age of viability** *is reached at about 24 weeks* (Morgan, Goldenberg, & Schulkin, 2008). Many practitioners hesitate to resuscitate before 24 weeks. The majority of the neurons in the brain have developed by 24 weeks, although they are still rudimentary, and the glial or nurse cells that support neurons continue to grow. At 24 weeks the fetus can feel pain (Royal College of Obstetricians and Gynecologists, 1997).

Between the $7^{th}$ - $9^{th}$ months, the fetus is primarily preparing for birth. It is exercising its muscles and its lungs begin to expand and contract. The fetus gains about 5 pounds and 7 inches during this last trimester of pregnancy, and during the $8^{th}$ month a

layer of fat develops under the skin. This layer of fat serves as insulation and helps the baby regulate body temperature after birth.

At around 36 weeks the fetus is almost ready for birth. It weighs about 6 pounds and is about 18.5 inches long. By week 37 all of the fetus's organ systems are developed enough that it could survive outside the mother's uterus without many of the risks associated with premature birth. The fetus continues to gain weight and grow in length until approximately 40 weeks. By then the fetus has very little room to move around and birth becomes imminent. The progression through the stages is shown in Figure 2.8.




Figure 2.8 Prenatal Development Age Milestones.

## Prenatal Brain Development

Prenatal brain development begins in the third gestational week with the differentiation of stem cells, which are capable of producing all the different cells that make up the brain (Stiles & Jernigan, 2010). *The location of these stem cells in the embryo is referred to as the* neural plate. By the end of the third week, two ridges appear along the neural plate first forming the neural groove and then the neural tube. The open region in the center of the neural tube forms the brain's ventricles and spinal canal. By the end of the embryonic period, or week eight, the neural tube has further differentiated into the forebrain, midbrain, and hindbrain.

Brain development during the fetal period involves neuron production, migration, and differentiation. From the early fetal period until midgestation, most of the 85 billion neurons have been generated and many have already migrated to their brain positions. **Neurogenesis,** or *the formation of neurons*, is largely completed after five months of gestation. One exception is in the hippocampus, which continues to develop neurons throughout life. Neurons that form the neocortex, or the layer of cells that lie on the surface of the brain, migrate to their location in an orderly way. Neural migration is mostly completed by 29 weeks. Once in position neurons begin to produce dendrites and axons that begin to form the neural networks responsible for information processing. *Regions of the brain that contain the cell bodies are referred to as the* **Gray Matter** because they look gray in appearance. *The axons that form the neural pathways make up the* **White Matter** because they are covered in myelin, a fatty substance that is white in appearance. Myelin aids in both the insulation and efficiency of neural transmission. Although cell differentiation is complete at birth, the growth of dendrites, axons, and synapses continue for years.

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# 2.8: Introduction and Prenatal Development Study Guide

## Introduction to Lifespan, Theories and Research, Beginnings (Lessons 1-3)

1. Describe the study of human development.
2. Distinguish between physical, cognitive, and psychosocial development.
3. What are the stages of the lifespan? Describe these.
4. What is meant by social class?
5. What is a cohort?
6. How might social class impact a person's life chances?
7. Compare research methods noting the advantages and disadvantages of each.
8. What is confirmation bias and sampling bias?
9. Distinguish between independent and dependent variables.
10. Explain the conditions for establishing cause and effect relationships between variables.
11. Define theory.
12. Discuss in detail Freud's theory of psychosexual development. Also explain the parts of the self, defense mechanisms, and fixation.
13. 13. Describe Erikson's psychosocial stages of development.
14. Who is the father of developmental psychology?
15. Explain classical and operant conditioning principles. Which names would you associate with each?
16. Describe social learning theory including the concept of modeling.
17. Explain Piaget's theory of cognitive development including the concepts of schema, assimilation, accommodation, cognitive equilibrium and the stages of intelligence.
18. Explain sociocultural theory of cognitive development.
19. Explain the ecological-systems approach to development.
20. What is the difference between genes and chromosomes? How do gametes differ from other normal human cells?
21. What determines the sex of the child?
22. Define polygenic and multifactorial.
23. Distinguish between dizygotic and monozygotic twins.
24. What is the difference between genetic and chromosomal abnormalities? List and describe some more common chromosomal abnormalities.
25. What happens during conception? Distinguish between the zygotic (germinal), embryonic, and fetal periods of development. Give details.
26. What is the age of viability? When is it?
27. Discuss some of the problems facing newborns. What is the APGAR?
28. Discuss some of the complications of pregnancy as well as a normal delivery.
29. Characterize approaches to childbirth and a normal birth process.
30. What are teratogens? Give examples.

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# 2.9: Teratogens

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 many 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 environmental factors that can contribute to birth defects,* and include some maternal diseases, pollutants, drugs and alcohol.

**Factors influencing prenatal risks:** There are several considerations in determining the type and amount of damage that might result from exposure to a particular teratogen (Berger, 2005). These include:

- **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.
- **The number of teratogens**: Fetuses exposed to multiple teratogens typically have more problems than those exposed to only one.
- **Genetics:** Genetic make-up also plays a role on the impact a particular teratogen might have on the child. This is suggested by fraternal twins exposed to the same prenatal environment, but they 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.

Figure 2.9 illustrates the timing of teratogen exposure and the types of structural defects that can occur during the prenatal period.

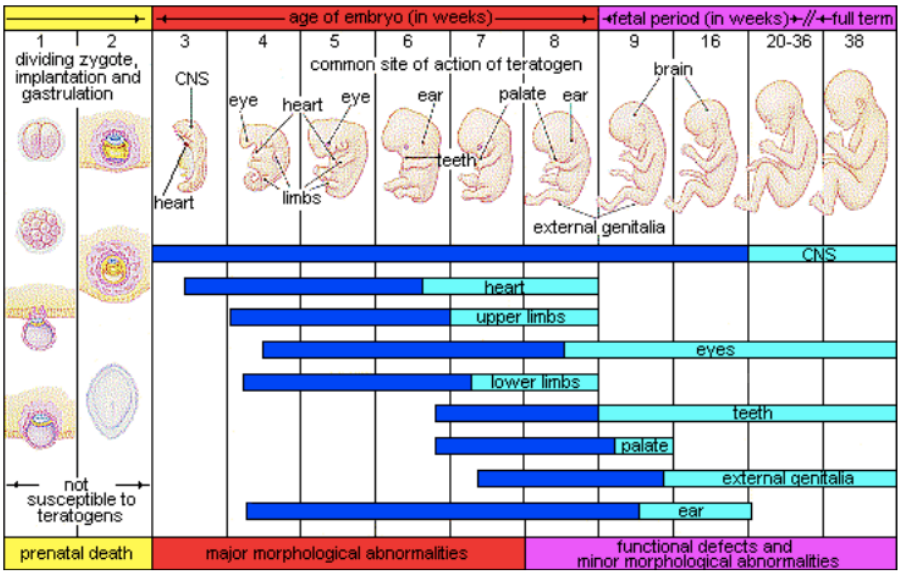
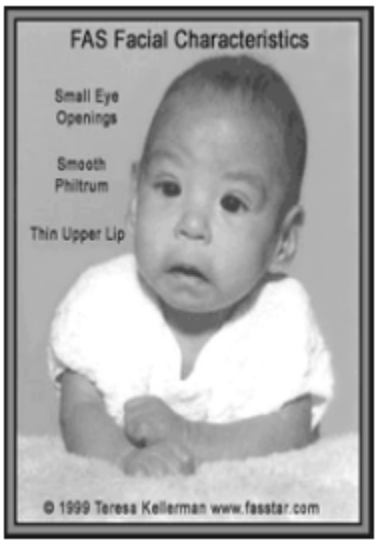



Figure 2.9 Critical Periods of Prenatal Development.

**Alcohol:** 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 (CDC, 2005). Alcohol use during pregnancy is the leading preventable cause of intellectual disabilities in children in the United States (Maier & West, 2001). 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 drinks on a single occasion) or 7 or more drinks during a single week place a child at risk.

In extreme cases, alcohol consumption during pregnancy can lead to fetal death, but also can result **in Fetal Alcohol Spectrum Disorders (FASD),** *which is an umbrella term for the range of effects that can occur due to alcohol consumption during pregnancy* (March of Dimes, 2016a). The most severe form of FASD is Fetal Alcohol Syndrome (FAS). Children with FAS share certain physical features such as flattened noses, small eye holes, and small heads (see Figure 2.10). Cognitively, these children have poor judgment, poor impulse control, higher rates of ADHD, learning issues, and lower IQ scores. These developmental problems and delays persist into adulthood (Streissguth, Barr, Kogan, & Bookstein, 1996) and can include criminal behavior, psychiatric problems, and unemployment (CDC, 2016a). Based on animal studies, it has been hypothesized that a mother's alcohol consumption during pregnancy may predispose her child to like alcohol (Youngentob, Molina, Spear, & Youngentob, 2007).




**Fetal Alcohol Spectrum Disorder Facial Features**

| Facial Feature | Potential Effect of Fetal Alcohol |
|---|---|
| Head size | Below-average head circumference |
| Eyes | Smaller than average eye opening, skin folds at corners of eyes |
| Nose | Low nasal bridge, short nose |
| Midface | Smaller than average midface size |
| Lip and philtrum | Thin upper lip, indistinct philtrum |

Source

Figure 2.10: Fetal Alcohol Spectrum Disorders. Source.

**Tobacco:** Another widely used teratogen is tobacco. According to Tong et al. (2013) in conjunction with the Centers for Disease Control and Prevention, data from 27 sites in 2010 representing 52% of live births, showed that among women with recent live births:

- About 23% reported smoking in the 3 months prior to pregnancy.
- Almost 11% reported smoking during pregnancy.
- More than half (54.3%) reported that they quit smoking by the last 3 months of pregnancy.
- Almost 16% reported smoking after delivery.

When comparing the ages of women who smoked:

- Women <20, 13.6% smoked during pregnancy
- Women 20–24,17.6% smoked during pregnancy
- Women 25–34, 8.8% smoked during pregnancy
- Women ≥35, 5.7% smoked during pregnancy

The findings among racial and ethnic groups indicated that smoking during pregnancy was highest among American Indians/ Alaska Natives (26.0%) and lowest among Asians/Pacific Islanders (2.1%).

When a pregnant woman smokes the fetus is exposed to dangerous chemicals including nicotine, carbon monoxide and tar, which lessen the amount of oxygen available to the fetus. Oxygen is important for overall growth and development. Tobacco use during pregnancy has been associated with low birth weight, **ecotopic pregnancy** (*fertilized egg implants itself outside of the uterus*), **placenta previa** (*placenta lies low in the uterus and covers all or part of the cervix*), **placenta abruption** (*placenta separates prematurely from the uterine wall*), preterm delivery, stillbirth, fetal growth restriction, sudden infant death syndrome (SIDS), birth defects, learning disabilities, and early puberty in girls (Center for Disease Control, 2015d). A woman being exposed to second-hand smoke during pregnancy has also been linked to low-birth weight infants.

**Prescription/Over-the-counter Drugs:** About 70% of pregnant women take at least one prescription drug (March of Dimes, 2016e). A woman should not be taking any prescription drug during pregnancy unless it was prescribed by a health care provider

who knows she is pregnant. Some prescription drugs can cause birth defects, problems in overall health, and development of the fetus. Over-the-counter drugs are also a concern during the prenatal period because they may cause certain health problems. For example, the pain reliever ibuprofen can cause serious blood flow problems to the fetus during the last three months.



*Figure 2.11.*

**Illicit Drugs:** Common illicit drugs include cocaine, ecstasy and other club drugs, heroin, marijuana, and prescription drugs that are abused. 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 and have other unhealthy behaviors. These include smoking, drinking alcohol, not eating healthy meals, and being more likely to get a sexually transmitted disease. 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 problems in brain development (March of Dimes, 2016c). *If a baby's mother used an addictive drug during pregnancy that baby can get addicted to the drug before birth and go through drug withdrawal after birth*, also known as **Neonatal Abstinence Syndrome** (March of Dimes, 2015d). Other complications of illicit drug use include premature birth, smaller than normal head size, birth defects, heart defects, and infections. Additionally, babies born to mothers who use drugs may have problems later in life, including learning and behavior difficulties, slower than normal growth, and die from Sudden Infant Death Syndrome. Children of substance abusing parents are also considered at high risk for a range of biological, developmental, academic, and behavioral problems, including developing substance abuse problems of their own (Conners, et al., 2003).

### Box 2.3: Should Women Who Use Drugs During Pregnancy Be Arrested and Jailed?

Women who use drugs or alcohol during pregnancy can cause serious lifelong harm to their child. Some people have advocated mandatory screenings for women who are pregnant and have a history of drug abuse, and if the women continue using, to arrest, prosecute, and incarcerate them (Figdor & Kaeser, 1998). This policy was tried in Charleston, South Carolina 20 years ago. The policy was called the Interagency Policy on Management of Substance Abuse During Pregnancy and had disastrous results.

The Interagency Policy applied to patients attending the obstetrics clinic at MUSC, which primarily serves patients who are indigent or on Medicaid. It did not apply to private obstetrical patients. The policy required patient education about the harmful effects of substance abuse during pregnancy. A statement also warned patients that protection of unborn and newborn children from the harms of illegal drug abuse could involve the Charleston police, the Solicitor of the Ninth Judicial Court, and the Protective Services Division of the Department of Social Services (DSS). (Jos, Marshall, & Perlmutter, 1995, pp. 120–121)

This policy seemed to deter women from seeking prenatal care, deterred them from seeking other social services, and was applied solely to low-income women, resulting in lawsuits. The program was canceled after 5 years, during which 42 women were arrested. A federal agency later determined that the program involved human experimentation without the approval and oversight of an institutional review board (IRB).

In July 2014, Tennessee enacted a law that allows women who illegally use a narcotic drug while pregnant to be prosecuted for assault if her infant is harmed or addicted to the drug (National Public Radio, 2015). According to the National Public Radio report, a baby is born dependent on a drug every 30 minutes in Tennessee, which is a rate three times higher than

> the national average. However, since the law took effect the number of babies born having drug withdrawal symptoms has not diminished. Critics contend that the criminal justice system should not be involved in what is considered a healthcare problem. What do you think? Is the issue of mothers using illicit drugs more of a legal or medical concern?

**Pollutants**: There are more than 83,000 chemicals used in the United States with little information on the effects of them during pregnancy (March of Dimes, 2016b). An environmental pollutant of significant concern is lead poisoning, which is connected with low birth weight and slowed neurological development. The chemicals in certain pesticides are also potentially damaging and may lead to birth defects, learning problems, low birth weight, miscarriage, and premature birth (March of Dimes, 2014). Prenatal exposure to bisphenol A (BPA), a chemical commonly used in plastics and food and beverage containers, may disrupt the action of certain genes contributing to certain birth defects (March of Dimes, 2016b). Radiation is another environmental hazard. If a mother is exposed to radiation, it can get into the bloodstream and pass through the umbilical cord to the baby. Radiation can also build up in body areas close to the uterus, such as the bladder. Exposure to radiation can slow the baby's growth, cause birth defects, affect brain development, cause cancer, and result in a miscarriage. Mercury, a heavy metal, can cause brain damage and affect the baby's hearing and vision. This is why women are cautioned about the amount and type of fish they consume during pregnancy.



Figure 2.12.

**Toxoplasmosis:** The tiny parasite, *Toxoplasma gondii,* causes an infection called **Toxoplasmosis**. According to the March of Dimes (2012d), *Toxoplasma gondii* infects more than 60 million people in the United States. A healthy immune system can keep the parasite at bay producing no symptoms, so most people do not know they are infected. As routine prenatal screening frequently does not test for the presence of this parasite, pregnant women may want to talk to their health-care provider about being tested. Toxoplasmosis can cause premature birth, stillbirth, and can result in birth defects to the eyes and brain. While most babies born with this infection show no symptoms, ten percent may experience eye infections, enlarged liver and spleen, jaundice, and pneumonia. To avoid being infected, women should avoid eating undercooked or raw meat and unwashed fruits and vegetables, touching cooking utensils that touched raw meat or unwashed fruits and vegetables, and touching cat feces, soil or sand. If women think they may have been infected during pregnancy, they should have their baby tested.

**Sexually Transmitted Diseases:** 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 to their unborn child. Additionally, the earlier the treatment begins, the better the health outcomes for mother and baby (CDC, 2016d). Sexually transmitted diseases (STDs) can cause premature birth, premature rupture of the amniotic sac, an ectopic pregnancy, birth defects, miscarriage, and still births (March of Dimes, 2013). Most babies become infected with STDS while passing through the birth canal during delivery, but some STDs can cross the placenta and infect the developing fetus.

**Human Immunodeficiency Virus (HIV)**: One of the most potentially devastating teratogens is HIV. HIV and Acquired Immune Deficiency Syndrome (AIDS) are leading causes of illness and death in the United States (Health Resources and Services Administration, 2015). One of the main ways children under age 13 become infected with HIV is via mother-to-child transmission of the virus prenatally, during labor, or by breastfeeding (CDC, 2016c). There are some measures that can be taken to lower the chance the child will contract the disease. HIV positive mothers who take antiviral medications during their pregnancy greatly reduce the chance of passing the virus to the fetus. The risk of transmission is less than 2 percent; in contrast, it is 25 percent if the mother does not take antiretroviral drugs (CDC, 2016b). However, the long-term risks of prenatal exposure to the medication are not known. It is recommended that women with HIV deliver the child by c-section, and that after birth they avoid breast feeding.

**German measles (or rubella)**: Rubella, also called German measles, is an infection that causes mild flu-like symptoms and a rash on the skin. However, only have of children infected have these symptoms, while others have no symptoms (March of Dimes,

2012a). Rubella has been associated with a number of birth defects. 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 11$^{th}$ week of prenatal development and can also cause brain damage. Women in the United States are much less likely to be afflicted with rubella, because most women received childhood vaccinations that protect her from the disease.

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# 2.10: Maternal Factors

**Mothers over 35:** Most women over 35 who become pregnant are in good health and have healthy pregnancies. However, according to the March of Dimes (2016d), women over age 35 are more likely to have an increased risk of:

- Fertility problems
- High blood pressure
- Diabetes
- Miscarriages
- Placenta Previa
- Cesarean section
- Premature birth
- Stillbirth
- A baby with a genetic disorder or other birth defects

Because a woman is born with all her eggs, environmental teratogens can affect the quality of the eggs as women get older. Also, a woman's reproductive system ages which can adversely affect the pregnancy. Some women over 35 choose special prenatal screening tests, such as a maternal blood screening, to determine if there are any health risks for the baby.



Figure 2.13. Source.

Although there are medical concerns associated with having a child later in life, there are also many positive consequences to being a more mature parent. Older parents are more confident, less stressed, and typically married providing family stability. Their children perform better on math and reading tests, and they are less prone to injuries or emotional troubles (Albert, 2013). Women who choose to wait are often well educated and lead healthy lives. According to Gregory (2007), older women are more stable, demonstrate a stronger family focus, possess greater self-confidence, and have more money.

Having a child later in one's career equals overall higher wages. In fact, for every year a woman delays motherhood, she makes 9% more in lifetime earnings. Lastly, women who delay having children actually live longer. Sun et al. (2015) found that women who had their last child after the age of 33 doubled their chances of living to age 95 or older than women who had their last child before their 30th birthday. A woman's natural ability to have a child at a later age indicates that her reproductive system is aging slowly, and consequently so is the rest of her body.

**Teenage Pregnancy:** A teenage mother is at a greater risk for having pregnancy complications including anemia, and high blood pressure. These risks are even greater for those under age 15. Infants born to teenage mothers have a higher risk for being premature and having low birthweight or other serious health problems. Premature and low birthweight babies may have organs that are not fully developed which can result in breathing problems, bleeding in the brain, vision loss, and serious intestinal problems. Very low birthweight babies (less than 3 1/3 pounds) are more than 100 times as likely to die, and moderately low birthweight babies (between 3 1/3 and 5 1/2 pounds) are more than 5 times as likely to die in their first year, than normal weight babies (March of Dimes, 2012c). Again, the risk is highest for babies of mothers under age 15. Reasons for these health issues include that teenagers are the least likely of all age groups to get early and regular prenatal care. Additionally, they may

engage in negative behaviors including eating unhealthy food, smoking, drinking alcohol, and taking drugs. Additional concerns for teenagers are repeat births. About 25% of teen mothers under age 18 have a second baby within 2 years after the first baby's birth.

**Gestational Diabetes:** Seven percent of pregnant women develop **gestational diabetes** (March of Dimes, 2015b). *Diabetes is a condition where the body has too much glucose in the bloodstream*. Most pregnant women have their glucose level tested at 24 to 28 weeks of pregnancy. Gestational diabetes usually goes away after the mother gives birth, but it might indicate a risk for developing diabetes later in life. If untreated, gestational diabetes can cause premature birth, stillbirth, the baby having breathing problems at birth, jaundice, or low blood sugar. Babies born to mothers with gestational diabetes can also be considerably heavier (more than 9 pounds) making the labor and birth process more difficult. For expectant mothers, untreated gestational diabetes can cause preeclampsia (high blood pressure and signs that the liver and kidneys may not be working properly) discussed later in the chapter. Risk factors for gestational diabetes include age (being over age 25), being overweight or gaining too much weight during pregnancy, family history of diabetes, having had gestational diabetes with a prior pregnancy, and race and ethnicity (African-American, Native American, Hispanic, Asian, or Pacific Islander have a higher risk). Eating healthy and maintaining a healthy weight during pregnancy can reduce the chance of gestational diabetes. Women who already have diabetes and become pregnant need to attend all their prenatal care visits, and follow the same advice as those for women with gestational diabetes as the risk of preeclampsia, premature birth, birth defects, and stillbirth are the same.

**High Blood Pressure (Hypertension): Hypertension** *is a condition in which the pressure against the wall of the arteries becomes too high*. There are two types of high blood pressure during pregnancy, gestational and chronic. Gestational hypertension only occurs during pregnancy and goes away after birth. Chronic high blood pressure refers to women who already had hypertension before the pregnancy or to those who developed it during pregnancy and it did not go away after birth. According to the March of Dimes (2015c) about 8 in every 100 pregnant women have high blood pressure. High blood pressure during pregnancy can cause premature birth and low birth weight (under five and a half pounds), placental abruption, and mothers can develop preeclampsia.

**Rh Disease:** Rh is a protein found in the blood. Most people are Rh positive, meaning they have this protein. Some people are Rh negative, meaning this protein is absent. Mothers who are Rh negative are at risk of having a baby with *a form of anemia* called **Rh disease** (March of Dimes, 2009). A father who is Rh-positive and mother who is Rh-negative can conceive a baby who is Rh-positive. Some of the fetus's blood cells may get into the mother's bloodstream and her immune system is unable to recognize the Rh factor. The immune system starts to produce antibodies to fight off what it thinks is a foreign invader. Once her body produces immunity, the antibodies can cross the placenta and start to destroy the red blood cells of the developing fetus. As this process takes time, often the first Rh positive baby is not harmed, but as the mother's body will continue to produce antibodies to the Rh factor across her lifetime, subsequent pregnancies can pose greater risk for an Rh positive baby. In the newborn, Rh disease can lead to jaundice, anemia, heart failure, brain damage and death.

**Weight Gain during Pregnancy:** According to March of Dimes (2016f) during pregnancy most women need only an additional 300 calories per day to aid in the growth of the fetus. Gaining too little or too much weight during pregnancy can be harmful. Women who gain too little may have a baby who is low-birth weight, while those who gain too much are likely to have a premature or large baby. There is also a greater risk for the mother developing preeclampsia and diabetes, which can cause further problems during the pregnancy. Table 2.4 shows the healthy weight gain during pregnancy. Putting on the weight slowly is best. Mothers who are concerned about their weight gain should talk to their health care provider.

*Table 2.4 Weight Gain during Pregnancy. Source.*

| If you were a healthy weight before pregnancy | If you were underweight before pregnancy | If you were overweight before pregnancy | If you were obese before pregnancy |
|---|---|---|---|
| • Gain 25 - 35 lbs<br>• 1-4.5 lbs in the first trimester and 1 lb per week in the second and third trimesters | • Gain 28-40 lbs<br>• 1-4.5 lbs in the first trimester and a little more than 1 lb per week thereafter | • Gain 12-25 lbs<br>• 1-4.5 lbs in the first trimester and a little more than 1/2 lb per week in the second and third trimesters | • 11-20 lbs<br>• 1-4.5 lbs in the first trimester and less than 1/2 lb per week in the second and third trimesters |

*Mothers of twins need to gain more in each category.*

**Stress:** Feeling stressed is common during pregnancy, but high levels of stress can cause complications including having a premature baby or a low-birthweight baby. Babies born early or too small are at an increased risk for health problems. Stress-

related hormones may cause these complications by affecting a woman's immune systems resulting in an infection and premature birth. Additionally, some women deal with stress by smoking, drinking alcohol, or taking drugs, which can lead to problems in the pregnancy. High levels of stress in pregnancy have also been correlated with problems in the baby's brain development and immune system functioning, as well as childhood problems such as trouble paying attention and being afraid (March of Dimes, 2012b).

**Depression:** Depression is a significant medical condition in which feelings of sadness, worthlessness, guilt, and fatigue interfere with one's daily functioning. Depression can occur before, during, or after pregnancy, and 1 in 7 women is treated for depression sometime between the year before pregnancy and year after pregnancy (March of Dimes, 2015a). Women who have experienced depression previously are more likely to have depression during pregnancy. Consequences of depression include the baby being born premature, having a low birthweight, being more irritable, less active, less attentive, and having fewer facial expressions. About 13% of pregnant women take an antidepressant during pregnancy. It is important that women taking antidepressants during pregnancy discuss the medication with a health care provider as some medications can cause harm to the developing organism. In fact, birth defects happen about 2 to 3 times more often in women who take certain Selective Serotonin Reuptake Inhibitors (SSRIs). Depression is not the same as the Baby Blues. The baby Blues are feelings of sadness that occur 3 to 5 days after having a baby, and typically disappear usually within 10 days of the birth. New mothers may have trouble sleeping, be moody, and feel let-down from the birthing experience. According to the Diagnostic and Statistical Manual of Mental Disorders-5th edition (DSM-V), (American Psychiatric Association, 2013), peripartum onset of depression, also known as Postpartum Depression, is a type of depression that occurs during pregnancy or in the 4 weeks following pregnancy. Approximately 1 out of 8 women experience postpartum depression. Changing hormone levels are thought to be a factor in its occurrence, however, risk factors include having depression previously, a family history of depression, being younger than 20, experiencing stress, and substance use.

Peripartum-onset mood disorders, both depression and mania, can present with or without psychotic features. Hallucinations and delusions are associated with postpartum psychotic episodes, and have included command hallucinations to kill the infant or delusions that the infant is possessed. Psychotic features occur in approximately 1 in 500 to 1 in 1,000 deliveries, and the risk is higher for women with prior postpartum mood episodes (American Psychiatric Association, 2013).

**Paternal Impact:** The age of fathers at the time of conception is also an important factor in health risks for children. According to Nippoldt (2015) offspring of men over 40 face an increased risk of miscarriages, autism, birth defects, achondroplasia (bone growth disorder) and schizophrenia. These increased health risks are thought to be due to accumulated chromosomal aberrations and mutations during the maturation of sperm cells in older men (Bray, Gunnell, & Smith, 2006). However, like older women, the overall risks are small.




Figure 2.14: Hazardous Occupations. Source.

In addition, men are more likely than women to work in occupations where hazardous chemicals, many of which have teratogenic effects or may cause genetic mutations, are used (Cordier, 2008). These may include petrochemicals, lead, and pesticides that can cause abnormal sperm and lead to miscarriages or diseases. Men are also more likely to be a source of second hand smoke for their developing offspring. As noted earlier, smoking by either the mother or around the mother can hinder prenatal development.

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# 2.11: 2.9 Prenatal Assessment

A number of assessments are suggested to women as part of their routine prenatal care to find conditions that may increase the risk of complications for the mother and fetus (Eisenberg, Murkoff, & Hathaway, 1996). These can include blood and urine analyses and screening and diagnostic tests for birth defects.

**Ultrasound** is one of the main screening tests done in combination with blood tests. The ultrasound *is a test in which sound waves are used to examine the fetus*. There are two general types. *Transvaginal ultrasounds* are used early pregnancy, while *transabdominal ultrasounds* are more common and used after 10 weeks of pregnancy (typically, 16 to 20 weeks). Ultrasounds are used to check the fetus for defects or problems. It can also find out the age of the fetus, location of the placenta, fetal position, movement, breathing and heart rate, amount of amniotic fluid in the uterus, and number of fetuses. Most women have at least one ultra sound during pregnancy, but if problems are noted, additional ultrasounds may be recommended.



Figure 2.15: Preparing for an Ultrasound.

When diagnosis of a birth defect is necessary, ultrasounds help guide the more invasive diagnostic tests of amniocentesis and chorionic villus sampling. **Amniocentesis** *is a procedure in which a needle is used to withdraw a small amount of amniotic fluid and cells from the sac surrounding the fetus and later tested.* **Chorionic Villus Sampling** *is a procedure in which a small sample of cells is taken from the placenta and tested.* Both amniocentesis and chorionic villus sampling have a risk of miscarriage, and consequently they are not done routinely.

## Box 2.4: Infertility and Reproductive Technology

**Infertility:** Infertility affects about 10 to 15 percent of couples in the United States (Mayo Clinic, 2015). Male factors create infertility in about a third of the cases. For men, the most common cause is a lack of sperm production or low sperm production. Female factors cause infertility in another third of cases. For women, one of the most common causes of infertility is the failure to ovulate. Another cause of infertility in women is **Pelvic Inflammatory Disease** (**PID**), *which is an infection of a woman's reproductive organs* (Carroll, 2007). It is a complication often caused by some STDs, such as chlamydia and gonorrhea. Other infections that are not sexually transmitted can also cause PID. Based on a nationally representative sample from 2006-2010, 5.0% of U.S. women have reported being treated for PID in their lifetime, and 1 out of 8 women with a history of PID experience difficulties getting pregnant (CDC, 2014). Both male and female factors contribute to the remainder of cases of infertility.

**Fertility treatment:** The majority of infertility cases are treated using fertility drugs to increase ovulation or with surgical procedures to repair the reproductive organs or remove scar tissue from the reproductive tract. ***In vitro* fertilization (IVF)** is used when a woman has blocked or deformed fallopian tubes or sometimes when a man has a very low sperm count. *This procedure involves removing eggs from the female and fertilizing the eggs outside the woman's body*. The fertilized egg is then reinserted in the woman's uterus. The average costs of IVF are between $12,000-$17,000 (U. S. National Library of Medicine, 2014). The success rate varies depending on the age of the mother and type of egg implanted, such as whether the egg was recently removed from the woman, used after being frozen, or donated from another woman. According to a 2006 CDC report on assisted reproductive technologies that led to a healthy baby, the percentages were as follows:

- 40.9% in women aged 25
- 39.5% in women aged 30
- 33.4% in women aged 35
- 15.4% in women aged 40

Higher success rates, but less common procedures include **gamete intra-fallopian tube transfer** (GIFT) *which involves implanting both sperm and ova into the fallopian tube and fertilization is allowed to occur naturally* (Carroll, 2007). **Zygote intra-fallopian tube transfer (ZIFT)** is *another procedure in which sperm and ova are fertilized outside of the woman's body and the fertilized egg or zygote is then implanted in the fallopian tube*. This allows the zygote to travel down the fallopian tube and embed in the lining of the uterus naturally. This procedure also has a higher success rate than IVF.

Insurance coverage for infertility is required in fifteen states, but the amount and type of coverage available varies greatly (American Society of Reproductive Medicine, 2015). The majority of couples seeking treatment for infertility pay much of the cost. Consequently, infertility treatment is much more accessible to couples with higher incomes. However, grants and funding sources are available for lower income couples seeking infertility treatment as well.

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# 2.12: Complications of Pregnancy

**Minor complications:** There are a number of common side effects of pregnancy. Not everyone experiences all of these, nor to the same degree. And although they are considered "minor" this is not to say that these problems are not potentially very uncomfortable. These side effects include nausea (particularly during the first 3-4 months of pregnancy as a result of higher levels of estrogen in the system), heartburn, gas, hemorrhoids, backache, leg cramps, insomnia, constipation, shortness of breath or varicose veins (as a result of carrying a heavy load on the abdomen).

**Major Complications:** The following are some serious complications of pregnancy which can pose health risks to mother and child and that often require hospitalization.

**Ectopic Pregnancy** *occurs when the zygote becomes attached to the fallopian tube before reaching the uterus*. About 1 in 50 pregnancies in the United States are tubal pregnancies and this number has been increasing because of the higher rates of pelvic inflammatory disease and Chlamydia (Carroll, 2007). Abdominal pain, vaginal bleeding, nausea and fainting are symptoms of ectopic pregnancy.

**Preeclampsia, also known as Toxemia**, *is characterized by a sharp rise in blood pressure, a leakage of protein into the urine as a result of kidney problems, and swelling of the hands, feet, and face during the third trimester of pregnancy*. Preeclampsia is the most common complication of pregnancy. It is estimated to affect 5% to 10% of all pregnancies globally and accounts for 40% to 60% of maternal deaths in developing countries (National Institute of Child Health and Human Development, 2013). Rates are lower in the United States and preeclampsia affects about 3% to 5% of pregnant women. Preeclampsia occurs most frequently in first pregnancies, and it is more common in women who are obese, have diabetes, or are carrying twins. *When preeclampsia causes seizures, the condition is known as* **eclampsia**, which is the second leading cause of maternal death in the United States. Preeclampsia is also a leading cause of fetal complications, which include low birth weight, premature birth, and stillbirth. Treatment is typically bed rest and sometimes medication. If this treatment is ineffective, labor may be induced.

**Maternal Mortality:** Approximately 1000 women die in childbirth around the world each day (World Health Organization, 2010). Rates are highest in Subsaharan Africa and South Asia, although there has been a substantial decrease in these rates. The campaign to make childbirth safe for everyone has led to the development of clinics accessible to those living in more isolated areas and training more midwives to assist in childbirth.

**Spontaneous abortion** is experienced in an estimated 20-40 percent of undiagnosed pregnancies and in another 10 percent of diagnosed pregnancies. Usually the body aborts due to chromosomal abnormalities, and this typically happens before the $12^{th}$ week of pregnancy. Cramping and bleeding result and normal periods return after several months. Some women are more likely to have repeated miscarriages due to chromosomal, amniotic, or hormonal problems, but miscarriage can also be a result of defective sperm (Carrell et. al., 2003).

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# 2.13: Birth

**Learning Objectives: Birth**

- Describe how expectant parents prepare for childbirth
- Describe the stages of vaginal delivery
- Explain why a Caesarean or induced birth is necessary
- Describe the two common procedures to assess the condition of the newborn
- Describe problems newborns experience before, during, and after birth

## Preparation for Childbirth

Prepared childbirth refers to being not only in good physical condition to help provide a healthy environment for the baby to develop, but also helping individuals to prepare to accept their new roles as parents. Additionally, parents can receive information and training that will assist them for delivery and life with the baby. The more future parents can learn about childbirth and the newborn, the better prepared they will be for the adjustment they must make to a new life.

One of the most common methods for preparing for childbirth is **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 in 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 (Eisenberg, Murkoff, & Hathaway, 1996).

**Choosing Where to Have the Baby and Who Will Deliver:** The vast majority of births occur in a hospital setting. However, one percent of women choose to deliver at home (Martin, Hamilton, Osterman, Curtin, & Mathews, 2015). Women who are at low risk for birth complications can successfully deliver at home. More than half (67%) of home deliveries are by certified nurse midwifes. Midwives are trained and licensed to assist in delivery and are far less expensive than the cost of a hospital delivery. However, because of the potential for a complication during the birth process, most medical professionals recommend that delivery take place in a hospital. Despite the concerns, 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, Menacker, & Declercq, 2010). In addition to home births, one-third of out-of- hospital births occur in freestanding clinics, birthing centers, in physician's offices, or other locations.

**Stages of Birth for Vaginal Delivery**

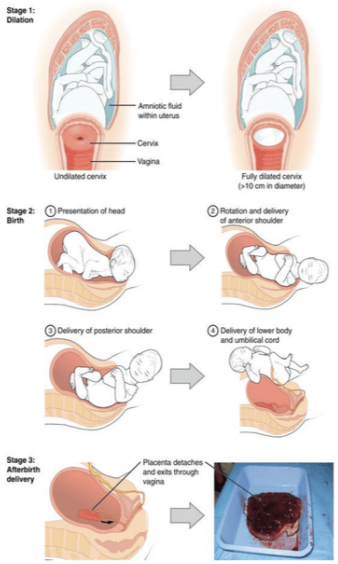



Figure 2.16: Stages of Birth for a Vaginal Delivery. Source.

**The First Stage** of labor begins with uterine contractions that may initially last about 30 seconds and be spaced 15 to 20 minutes apart. These increase in duration and frequency to more than a minute in length and about 3 to 4 minutes apart. Typically, doctors advise that they be called when contractions are coming about every 5 minutes. Some women experience *false labor or* **Braxton-Hicks Contractions**, especially with the first child. These may come and go. They tend to diminish when the mother begins walking around. Real labor pains tend to increase with walking. Labor may also be signaled by a bloody discharge being expelled from the cervix. In one out of 8 pregnancies, the amniotic sac or water in which the fetus is suspended may break before labor begins. In such cases, the physician may induce labor with the use of medication if it does not begin on its own in order to reduce the risk of infection. Normally this sac does not rupture until the later stages of labor.

The first stage of labor is typically the longest. During this stage the cervix or opening to the uterus dilates to 10 centimeters or just under 4 inches (See Figure 2.16). This may take around 12-16 hours for first children or about 6-9 hours for women who have previously given birth. Labor may also begin with a discharge of blood or amniotic fluid.

**The Second Stage** involves the passage of the baby through the birth canal. This stage takes about 10-40 minutes. Contractions usually come about every 2-3 minutes. The mother pushes and relaxes as directed by the medical staff. Normally the head is delivered first. The baby is then rotated so that one shoulder can come through and then the other shoulder. The rest of the baby quickly passes through. At this stage, an **episiotomy** *or incision made in the tissue between the vaginal opening and anus,* may be performed to avoid tearing the tissue of the back of the vaginal opening (Mayo Clinic, 2016). The baby's mouth and nose are suctioned out. The umbilical cord is clamped and cut.

**The Third Stage** is relatively painless. During this stage, the placenta or afterbirth is delivered. This is typically within 20 minutes after delivery. If an episiotomy was performed it is stitched up during this stage.

More than 50% of women giving birth at hospitals use an epidural anesthesia during delivery (American Pregnancy Association, 2015). An **epidural block** *is a regional analgesic that can be used during labor and alleviates most pain in the lower body without slowing labor.* The epidural block can be used throughout labor and has little to no effect on the baby. Medication is injected into a small space outside the spinal cord in the lower back. It takes 10 to 20 minutes for the medication to take effect. An epidural block with stronger medications, such as anesthetics, can be used shortly before a C-section or if a vaginal birth requires the use of forceps or vacuum extraction. A **Cesarean Section (C-section)** *is surgery to deliver the baby by being removed through the mother's abdomen.* In the United States, about one in three women have their babies delivered this way (Martin et al., 2015). Most C-sections are done when problems occur during delivery unexpectedly. These can include:

- Health problems in the mother
- Signs of distress in the baby
- Not enough room for the baby to go through the vagina
- The position of the baby, such as a breech presentation where the head is not in the downward position.

C-sections are also more common among women carrying more than one baby. Although the surgery is relatively safe for mother and baby, it is considered major surgery and carries health risks. Additionally, it also takes longer to recover from a C-section than from vaginal birth. After healing, the incision may leave a weak spot in the wall of the uterus. This could cause problems with an attempted vaginal birth later. However, more than half of women who have a C-section can give vaginal birth later.

An **Induced Birth**: Sometimes a baby's arrival may need to be **Induced** *or delivered before labor begins*. Inducing labor may be recommended for a variety of reasons when there is concern for the health of the mother or baby. For example:

- The mother is approaching two weeks beyond her due date and labor has not started naturally
- The mother's water has broken, but contractions have not begun
- There is an infection in the mother's uterus
- The baby has stopped growing at the expected pace
- There is not enough amniotic fluid surrounding the baby
- The placenta peels away, either partially or completely, from the inner wall of the uterus before delivery
- The mother has a medical condition that might put her or her baby at risk, such as high blood pressure or diabetes (Mayo Clinic, 2014).

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# 2.14: Assessing the Neonate

The Apgar assessment is conducted one minute and five minutes after birth. This is a very quick way to assess the newborn's overall condition. Five measures are assessed: Heart rate, respiration, muscle tone (assessed by touching the baby's palm), reflex response (the Babinski reflex is tested), and color. A score of 0 to 2 is given on each feature examined. An Apgar of 5 or less is cause for concern. The second Apgar should indicate improvement with a higher score.

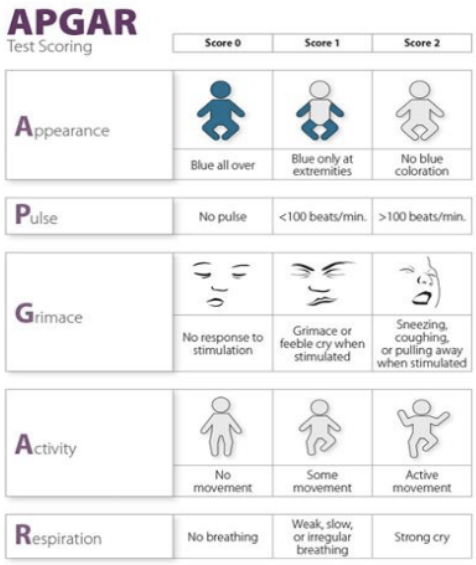



Figure 2.17 APGAR Test Scores. Source.

Another way to assess the condition of the newborn is the Neonatal Behavioral Assessment Scale (NBAS). The baby's motor development, muscle tone, and stress response are assessed. This tool has been used around the world to further assess the newborn, especially those with low Apgar scores, and to make comparisons of infants in different cultures (Brazelton & Nugent, 1995).



Figure 2.18: Newborn in the neonatal unit. Source.

## Problems of the Newborn

**Anoxia**: **Anoxia** *is a temporary lack of oxygen to the brain*. Difficulty during delivery may lead to anoxia which can result in brain

damage or in severe cases, death. Babies who suffer both low birth weight and anoxia are more likely to suffer learning disabilities later in life as well.

**Low Birth weight**: We have been discussing a number of teratogens associated with low birth weight such as alcohol, tobacco, etc. A child is considered **low birth weight** *if he or she weighs less than 5 pounds 8 ounces (2500 grams)*. About 8.2 percent of babies born in the United States are of low birth weight (Center for Disease Control, 2015a). A low birth weight baby has difficulty maintaining adequate body temperature because it lacks the fat that would otherwise provide insulation. Such a baby is also at more risk for infection, and 67 percent of these babies are also preterm which can make them more at risk for respiratory infection. Very low birth weight babies (2 pounds or less) have an increased risk of developing cerebral palsy. Many causes of low birth weight are preventable with proper prenatal care.

**Preterm**: A newborn might also have a low birth weight if it is *born at less than 37 weeks gestation*, which qualifies it as a **preterm** baby (CDC, 2015c). Early birth can be triggered by anything that disrupts the mother's system. For instance, vaginal infections can lead to premature birth because such infection causes the mother to release anti-inflammatory chemicals which, in turn, can trigger contractions. Smoking and the use of other teratogens can lead to preterm birth. A significant consequence of preterm birth includes **respiratory distress syndrome**, *which is characterized by weak and irregular breathing* (United States National Library of Medicine, 2015).

**Small-for-Date Infants:** *Infants that have birth weights that are below expectation based on their gestational age are referred to as* **small-for-date.** These infants may be full term or preterm, but still weigh less than 90 % of all babies of the same gestational age. This is a very serious situation for newborns as their growth was adversely affected. Regev et al. (2003) found that small-for-date infants died at rates more than four times higher than other infants.

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# 2.15: Introduction to Lifespan, Theories and Research, Beginnings Self-Quiz

1. Bob is the vice-president of a medium sized company in a suburb of Seattle. He has two new cars, a large home with a sauna, new clothes, and takes many trips with his family. He also carries $21,000 of debt on his credit cards and struggles to make his payments. Bob would be considered part of which social class?
   a. working class
   b. underclass
   c. working poor
   d. none of the above
2. The middle class may cope with stressors by shopping or traveling. But, according to your reading, the poor are more likely to cope with stress by eating and:
   a. arguing
   b. smoking
   c. going to night clubs
   d. shopping
3. The ecological-systems perspective of human develop emphasizes
   a. the importance of the physical environment, including pollutants, in affecting development.
   b. the relationship between the individual and the environment including social systems such as family, community and school.
   c. the comparison of social systems in cultures with various types of subsistence patterns with and emphasis on hunter-gatherers and herding societies.
   d. the extent to which a person acts according to the “pleasure principle” or the “reality principle.”
4. Sharon wants to show how third graders in the United States learn from "reading buddy" programs. She established several of these programs in area schools and firmly believes that they are successful. She constructs a survey to give to her colleagues who support the program and offers the results to the local school board to promote the growth of such programs. This example illustrates which aspect of research?
   a. The use of simple random samples.
   b. Observational studies.
   c. Confirmation bias.
   d. Secondary analysis.
5. Researcher Smith uses a variety of techniques to learn as much as possible about Mr. Jordan who had to relocate to Houston after losing everything in Hurricane Katrina. Researcher Smith is using which method of research?
   a. Experiment
   b. Survey
   c. Case study
   d. Cross-sectional study
6. According to Erikson, a three month old is in which psychosocial stage?
   a. autonomy vs. shame and doubt
   b. trust vs. mistrust
   c. integrity vs. despair
   d. caring vs. doing
7. Drives and urges are relatively quiet during this stage, according to Freud.
   a. the anal stage
   b. the latent stage
   c. the oral stage
   d. the genital stage
8. Chad feels guilty because he cheated on an exam. Which part of the self is responsible for this sense of guilt?
   a. The ego.
   b. The id.
   c. The superego.
   d. The 'looking-glass' self.
9. Learning to think by using symbols such as language is a major part of this stage.
   a. Sensorimotor.
   b. Preoperational.

c. Operational.
d. Post formal.

10. This stage is experienced in early adulthood, according to Erikson.
    a. trust vs. mistrust
    b. industry vs. inferiority
    c. intimacy vs. isolation
    d. identity vs. role confusion
11. The more prolonged the level of stress, the weaker the immune system. What is the independent variable?
    a. The duration of stress.
    b. The strength of the immune system.
    c. The level of stress.
    d. The person whose stress level is measured.
12. Sperm and ova have:
    a. 23 genes
    b. 46 chromosomes
    c. 46 pair of genes
    d. 23 chromosomes
13. Effects of ARBD (alcohol related birth defects) include:
    a. bone damage.
    b. heart damage.
    c. liver damage.
    d. all of the above.
14. An organism is least likely to survive which stage of prenatal development?
    a. The germinal stage
    b. The embryonic stage
    c. The fetal stage
    d. Failure rates are the same throughout prenatal development.
15. Which type of births are most common?
    a. Birth of dizygotic twins.
    b. Birth of monozygotic twins.
    c. Birth of dizygotic triplets.
    d. Births of monozygotic triplets.
16. A dog learns to sit in order to get a treat. This best illustrates:
    a. social learning theory
    b. operant conditioning
    c. classical conditioning
    d. trial and error learning
17. A dog is shocked at the time a bell rings. Eventually, the dog begins to jump in fear at the sound of a bell. What is the unconditioned response?
    a. The sound of the bell.
    b. The jumping when a bell is sounded.
    c. Jumping to the shock.
    d. The administration of the shock.
18. This method of prepared childbirth encourages mothers to have a coach to help guide them through the birth process.
    a. The Dick-Read method.
    b. The Lamaze method.
    c. The Leboyer method.
    d. The Chambers method.
19. This theorist emphasized the potential a child has to learn if given guidance.
    a. Freud
    b. Piaget
    c. Vygotsky
    d. Pavlov
20. The cohort effect is most noticable with which level of analysis?
    a. microsystem analysis
    b. macrosystem analysis
    c. exosystem analysis
    d. chronosystem analysis

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# 2.16: "Life's Greatest Miracle"



Click on the link below to view a sequel to one of the most popular NOVA videos of all time, “Miracle of Life.” The program tracks human development from embryo to newborn using the extraordinary microimagery of Swedish photographer Lennart Nilsson.

- Life’s Greatest Miracle

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# 2.R: Heredity, Prenatal Development, and Birth (References)


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# 3: INFANCY


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# 3.1: Introduction to Infancy

**Learning Objectives**

- Summarize overall physical growth during infancy.
- Describe the growth of the brain during infancy.
- Contrast development of the senses in newborns.
- Compare gross and fine motor skills and give examples of each.
- Explain the merits of breastfeeding.
- Discuss nutritional concerns of marasmus and kwashiorkor.
- List and describe the six substages of sensorimotor intelligence.
- Describe stages of language development during infancy.
- Define babbling, holophrasic speech, and overregularization.
- Contrast styles of attachment.
- Discuss the importance of temperament and goodness of fit.
- Describe self-awareness, stranger wariness, and separation anxiety.
- Use Erikson's theory to characterize psychosocial development during infancy.

## Introduction

Welcome to the story of development from infancy through toddlerhood; from birth until about two years of age. Researchers have given this part of the life span more attention than any other period, perhaps because changes during this time are so dramatic and so noticeable and perhaps because we have assumed that what happens during these years provides a foundation for one's life to come. However, it has been argued that the significance of development during these years has been overstated (Bruer, 1999). Nevertheless, this is a period of life that contemporary educators, healthcare providers, and parents have focused on most heavily. We will examine growth and nutrition during infancy, cognitive development during the first 2 years, and then turn our attention toward attachments formed in infancy.

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# 3.2: Physical Development

## Overall Physical Growth

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.

### Body Proportions

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 (think about how much of your length would be head if the proportions were still the same!). By age 25 it comprises about 20 percent 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.

## The Brain in the First Two Years

Some of the most dramatic physical change that occurs 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!

## Fine Motor Skills

Fine motor skills are more exact movements of the hands and fingers and include the ability to reach and grasp an object. Newborns cannot grasp objects voluntarily but do wave their arms toward objects of interest. At about 4 months of age, the infant is able to reach for an object, first with both arms and within a few weeks, with only one arm. Grasping an object involves the use of the fingers and palm, but no thumbs. Stop reading for a moment and try to grasp an object using these fingers and the palm. How does that feel? How much control do you have over the object? If it is a pen or pencil, are you able to write with it? Can you draw a picture? The answer is probably not. Use of the thumb comes at about 9 months of age when the infant is able to grasp an object using the forefinger and thumb. This ability greatly enhances the ability to control and manipulate an object and infants take great delight in this newfound ability. They may spend hours picking up small objects from the floor and placing them in containers. By 9 months, an infant can also watch a moving object, reach for it as it approaches and grab it. This is quite a complicated set of actions if we remember how difficult this would have been just a few months earlier.

# 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 further 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 eye 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 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 discrimination 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.

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# 3.3: Infant Sleep

A newborn typically sleeps approximately 16.5 hours per 24-hour period. This is usually polyphasic sleep in that the infant is accumulating the 16.5 hours over several sleep periods throughout the day (Salkind, 2005). The infant is averaging 15 hours per 24-hour period by one month, and 14 hours by 6 months. By the time children turn two, they are averaging closer to 10 hours per 24 hours. Additionally, the average newborn will spend close to 50% of the sleep time in the Rapid Eye Movement (REM) phase, which decreases to 25% to 30% in childhood.



Figure 3.4.

**Sudden Unexpected Infant Deaths (SUID):** Each year in the United States, there are about 3,500 Sudden Unexpected Infant Deaths (SUID). These deaths occur among infants less than one year-old and have no immediately obvious cause (CDC, 2015). The three commonly reported types of SUID are:

- ***Sudden Infant Death Syndrome* (SIDS): SIDS** *is identified when the death of a healthy infant occurs suddenly and unexpectedly, and medical and forensic investigation findings (including an autopsy) are inconclusive*. SIDS is the leading cause of death in infants 1 to 12 months old, and approximately 1,500 infants died of SIDS in 2013 (CDC, 2015). Because SIDS is diagnosed when no other cause of death can be determined, possible causes of SIDS are regularly researched. One leading hypothesis suggests that infants who die from SIDS have abnormalities in the area of the brainstem responsible for regulating breathing (Weekes-Shackelford & Shackelford, 2005).
- **Unknown Cause**: The sudden death of an infant less than one year of age that cannot be explained because a thorough investigation was not conducted and cause of death could not be determined.
- **Accidental Suffocation and Strangulation in Bed**: Reasons for accidental suffocation include: Suffocation by soft bedding, another person rolling on top of or against the infant while sleeping, an infant being wedged between two objects such as a mattress and wall, and strangulation such as when an infant's head and neck become caught between crib railings. The percentages of infants who died based on each of the three types are listed in Figure 3.5.

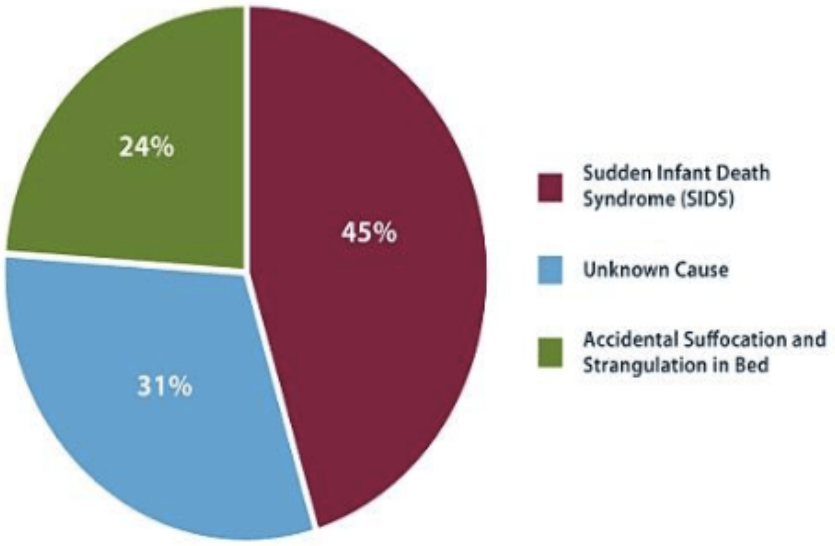



Figure 3.5 Breakdown of Sudden Unexpected Infant Death by Cause, 2013. Source: CDC/NCHS, National Vital Statistics System, Compressed Mortality File.

As can be seen in the below graph (Figure 3.6), the combined SUID death rate declined considerably following the release of the American Academy of Pediatrics safe sleep recommendations in 1992, which advocated that infants be placed for sleep on their backs (nonprone position). These recommendations were followed by a major Back to Sleep Campaign in 1994. However, accidental suffocation and strangulation in bed mortality rates remained unchanged until the late 1990s. In 1998 death rates from accidental suffocation and strangulation in bed actually started to increase, and they reached the highest rate at 20.8 deaths per 100,000 live births in 2013.

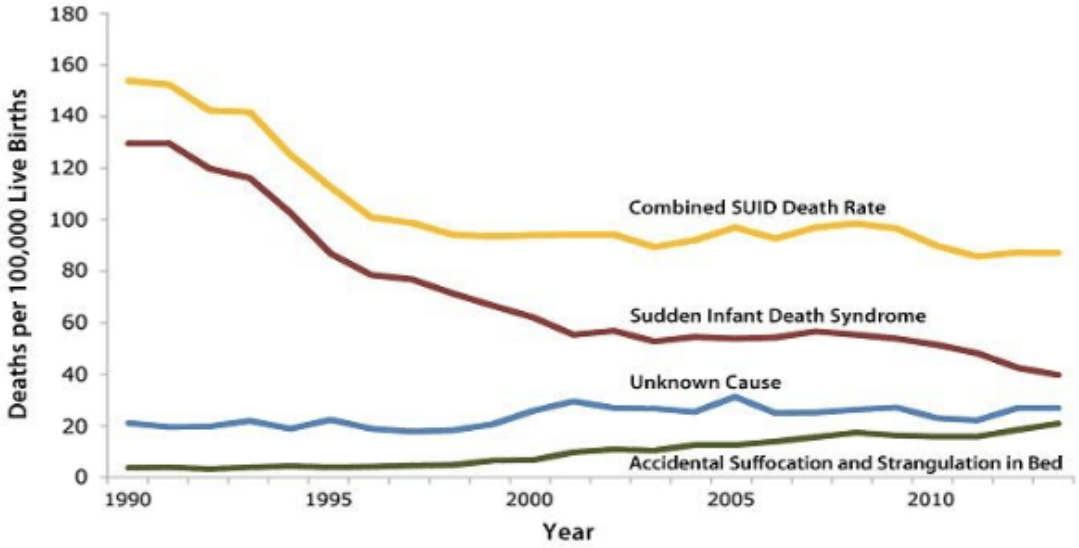



Figure 3.6 Sudden Unexpected Infant Death by Cause, 1990-2013. Source: CDC/NCHS, National Vital Statistics System, Compressed Mortality File.

## Should infants be sharing the bed with parents?

Colvin, Collie-Akers, Schunn and Moon (2014) analyzed a total of 8207 deaths from 24 states during 2004–2012 that were contained in the National Center for the Review and Prevention of Child Deaths Case Reporting System, a database of death reports from state child death review teams. The results indicated that younger victims (0-3 months) were more likely to die by bed-sharing and sleeping in an adult bed/on a person. A higher percentage of older victims (4 months to 364 days)

rolled into objects in the sleep environment and changed position from side/back to prone. Carpenter et al. (2013) compared infants who died of SIDS with a matched control and found that infants younger than three months old who slept in bed with a parent were five times more likely to die of SIDS compared to babies who slept separately from the parents, but were still in the same room. They concluded that bed sharing, even when the parents do not smoke or take alcohol or drugs, increases the risk of SIDS. However, when combined with parental smoking and maternal alcohol consumption and/or drug use, risks associated with bed sharing greatly increased.



Figure 3.7. Source.

The two studies discussed above were based on American statistics. What about the rest of the world? Co-sleeping occurs in many cultures, primarily because of a more collectivist perspective that encourages a close parent-child bond and interdependent relationship (Morelli, Rogoff, Oppenheim, & Goldsmith, 1992). In countries where co-sleeping is common, however, parents and infants typically sleep on floor mats and other hard surfaces which minimize the suffocation that can occur with bedding and mattresses (Nelson, Schiefenhoevel, & Haimerl, 2000).

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# 3.4: From Reflexes to Voluntary Movements

Newborns are equipped with a number of **reflexes** (Table 3.1) *which are involuntary movements in response to stimulation*. Some of the more common reflexes, such as the sucking reflex and rooting reflex, are important to feeding. The grasping and stepping reflexes are eventually replaced by more voluntary behaviors. Within the first few months of life these reflexes disappear, while other reflexes, such as the eye-blink, swallowing, sneezing, gagging, and withdrawal reflex stay with us as they continue to serve important functions. Reflexes offer pediatricians insight into the maturation and health of the nervous system. Reflexes that persist longer than they should can impede normal development (Berne, 2006). In preterm infants and those with neurological impairments, some of these reflexes may be absent at birth. Once present, they may persist longer than in a neurologically healthy infant (El-Dib, Massaro, Glass & Aly, 2012).

*Table 3.1 Some Common Infant Reflexes*

| Reflex | Description | Image |
|---|---|---|
| Sucking | Suck on anything that touches the lips. *Image source.* |  |
| Rooting | Turning the head when the cheek is touched. *Image source.* |  |
| Grasp | Fingers automatically grip anything that touches the palm of the hand. *Image source.* |  |
| Babinski | The toes will fan out and curl when the sole of the foot is stroked from heel to toe. |  |
| Moro | A sudden noise or loss of support to the head and neck will cause infants to spread out their arms and legs, then quickly contract the limbs inward. *Image source.* |  |
| Tonic Neck | When lying on the back with the head to one side, infants will extend the arm and leg on that side while flexing the limbs on the opposite side (looks like a fencer pose). *Image source.* |  |

| Reflex | Description | Image |
|---|---|---|
| Stepping | Legs move in stepping-like motion when feet touch a smooth surface. *Image source.* |  |

## Motor Development

Motor development occurs in an orderly sequence as infants move from reflexive reactions (e.g., sucking and rooting) to more advanced motor functioning. As mentioned during the prenatal section, development occurs according to the **Cephalocaudal** *(from head to tail)* and **Proximodistal** *(from the midline outward)* principles. For instance, babies first learn to hold their heads up, then to sit with assistance, then to sit unassisted, followed later by crawling, pulling up, cruising, and then walking. As motor skills develop, there are certain developmental milestones that young children should achieve. For each milestone there is an average age, as well as a range of ages in which the milestone should be reached. An example of a developmental milestone is a baby holding up its head. Babies on average are able to hold up their head at 6 weeks old, and 90% of babies achieve this between 3 weeks and 4 months old. If a baby is not holding up his head by 4 months old, he is showing a delay. On average, most babies sit alone at 7 months old. Sitting involves both coordination and muscle strength, and 90% of babies achieve this milestone between 5 and 9 months old. If the child is displaying delays on several milestones, that is reason for concern, and the parent or caregiver should discuss this with the child's pediatrician. Some developmental delays can be identified and addressed through early intervention.

**Motor Skills** *refer to our ability to move our bodies and manipulate objects*. **Fine motor skills** *focus on the muscles in our fingers, toes, and eyes, and enable coordination of small actions* (e.g., grasping a toy, writing with a pencil, and using a spoon). Newborns cannot grasp objects voluntarily but do wave their arms toward objects of interest. At about 4 months of age, the infant is able to reach for an object, first with both arms and within a few weeks, with only one arm. At this age *grasping an object involves the use of the fingers and palm, but no thumbs. This is known as the* **Palmer Grasp**. *The use of the thumb comes at about 9 months of age when the infant is able to grasp an object using the forefinger and thumb. Now the infant uses a* **Pincer Grasp**, and this ability greatly enhances the ability to control and manipulate an object and infants take great delight in this newfound ability. They may spend hours picking up small objects from the floor and placing them in containers. By 9 months, an infant can also watch a moving object, reach for it as it approaches, and grab it.



Figure 3.7. Source.

**Gross motor skills** *focus on large muscle groups that control our head, torso, arms and legs and involve larger movements* (e.g., balancing, running, and jumping). These skills begin to develop first. Examples include moving to bring the chin up when lying on the stomach, moving the chest up, and rocking back and forth on hands and knees. 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 device that frees the hips. This may be easier than reaching for an object with the hands, which requires much more practice (Berk, 2007). 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.

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# 3.5: Nutrition

Breast milk is considered the ideal diet for newborns. 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, and 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 breast feed 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 who breastfeed in the United States stop breast feeding 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 and the Canadian health recommendation is for breastfeeding to continue until 2 years of age. 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 breast feeding 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 breast feeding. Many of these mothers do not understand the benefits of breast feeding and have to be encouraged and supported in order to promote this practice. Breast feeding 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. Find out more at the

WHO's 10 facts on breastfeeding. 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 breast fed 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.



*Kwashiorkor (Photo Courtesy Centers for Disease Control and Prevention)*

## 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. For more information, go to www.prolacta.com to see a current development in the story of breast milk.

## 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.

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# 3.6: Cognitive Development

## Piaget and Sensorimotor Intelligence

Remember our discussion of sensorimotor development during the first two years of life. 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. 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.

**Stage One:** 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!

**Stage Two:** 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.

**Stage Three:** 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.

**Stage Four:** 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 become 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. Here is an example of a lack of object permanence.

**Was Piaget correct?** Infants seem to be able to recognize that objects have permanence at much younger ages (even as young as 3.5 months of age).

Dr. Rene Baillargeon explains in the following clip:

**Stage Five:** 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.

**Stage Six:** 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 intelligence that we will discuss in the next lesson. Part of this stage involves learning to use language.

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# 3.7: Piaget and the Sensorimotor Stage

**Learning Objectives: Cognitive Development in Infancy and Toddlerhood**

- Compare the Piagetian concepts of schema, assimilation, and accommodation
- List and describe the six substages of sensorimotor intelligence
- Describe the characteristics of infant memory
- Describe components and developmental progression of language
- Identify and compare the theories of language

## Schema, Assimilation and Accommodation

Piaget believed that we are continuously trying to maintain cognitive equilibrium, or a balance, in what we see and what we know (Piaget, 1954). 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. All this new information needs to be organized, and *a framework for organizing information is referred to as a* **Schema.** Children develop schemata through the processes of assimilation and accommodation.

When faced with something new, a child may demonstrate **Assimilation,** *which is fitting the new information into an existing schema,* such as calling all animals with four legs "doggies" because he or she knows the word doggie. Instead of assimilating the information, the child may demonstrate **Accommodation**, *which is expanding the framework of knowledge to accommodate the new situation* and thus learning a new word to more accurately name the animal. For example, recognizing that a horse is different than a zebra means the child has accommodated, and now the child has both a zebra schema and a horse schema. Even as adults we continue to try and "make sense" of new situations by determining whether they fit into our old way of thinking (assimilation) or whether we need to modify our thoughts (accommodation).

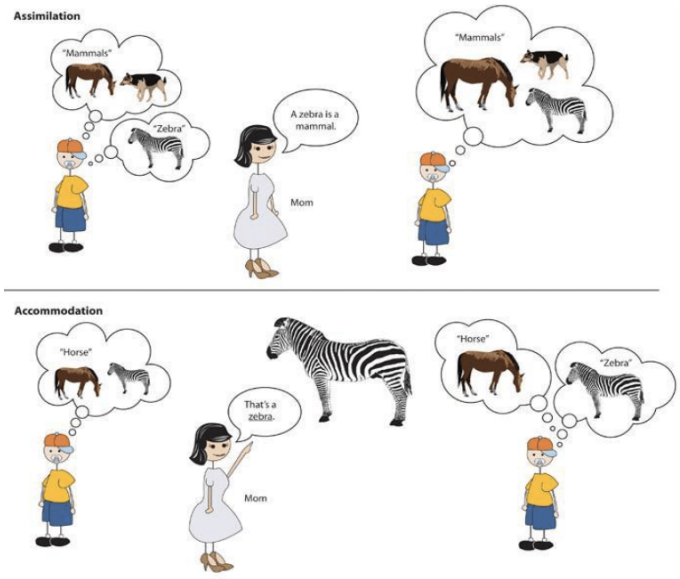



Figure 3.13: assimilation and accommodation. Source.

According to the Piagetian perspective, infants learn about the world primarily through their senses and motor abilities (Harris, 2005). These basic motor and sensory abilities provide the foundation for the cognitive skills that will emerge during the subsequent stages of cognitive development. *The first stage of cognitive development is referred to as the* **Sensorimotor Period** and it occurs through six substages. Table 3.2 identifies the ages typically associated with each substage.

*Table 3.2 Infant Ages for the Six Substages of the Sensorimotor Period*

| Substage 1 | Reflexes (0-1 month) |
|---|---|
| Substage 2 | Primary Circular Reactions (1-4 months) |
| Substage 3 | Secondary Circular Reactions (4-8 months) |
| Substage 4 | Coordination of Secondary Circular Reactions (8-12 months) |
| Substage 5 | Tertiary Circular Reactions (12-18 months) |
| Substage 6 | Beginning of Representational Thought (18-24 months) |

**Substage 1: Reflexes**. Newborns learn about their world through the use of their reflexes, such as when sucking, reaching, and grasping. Eventually the use of these reflexes becomes more deliberate and purposeful.

**Substage 2: Primary Circular Reactions**. During these next 3 months, the infant begins to actively involve his or her own body in some form of repeated activity. 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. The behavior is identified as circular and primary because it centers on the infant's own body.

**Substage 3: Secondary Circular Reactions**. The infant begins to interact with objects in the environment. At first the infant interacts with objects (e.g., a crib mobile) accidentally, but then these contacts with the objects are deliberate and become a repeated activity. 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, for example, the infant is able to bang two lids together from the cupboard when seated on the kitchen floor.



Figure 3.14. Source.

**Substage 4: Coordination of Secondary Circular Reactions**. The infant combines these basic reflexes and uses planning and coordination to achieve a specific goal. 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 become capable of having a thought and carrying out a planned, goal-directed activity. For example, an infant sees a toy car under the kitchen table and then crawls, reaches, and grabs the toy. The infant is coordinating both internal and external activities to achieve a planned goal.

**Substage 5: Tertiary Circular Reactions**. The toddler is considered a “little scientist” and begins exploring the world in a trial-and-error manner, using both motor skills and planning abilities. For example, the child might throw her ball down the stairs to see what happens. The toddler’s active engagement in experimentation helps them learn about their world.

**Substage 6: Beginning of Representational Thought**. The sensorimotor period ends with the appearance of symbolic or representational thought. The toddler now has a basic understanding that objects can be used as symbols. Additionally, the child is able to solve problems using mental strategies, to remember something heard days before and repeat it, and to engage in pretend play. This initial movement from a “hands-on” approach to knowing about the world to the more mental world of substage six marks the transition to preoperational thought.



Figure 3.15. Source.

## Development of Object Permanence

A critical milestone during the sensorimotor period is the development of object permanence. **Object permanence** *is the understanding that even if something is out of sight, it still exists* (Bogartz, Shinskey, & Schilling, 2000). According to Piaget, young infants do not remember an object after it has been removed from sight. Piaget studied infants' reactions when a toy was first shown to an infant and then hidden under a blanket. Infants who had already developed object permanence would reach for the hidden toy, indicating that they knew it still existed, whereas infants who had not developed object permanence would appear confused. Piaget emphasizes this construct because it was an objective way for children to demonstrate that they can mentally represent their world. Children have typically acquired this milestone by 8 months. Once toddlers have mastered **object permanence,** they enjoy games like hide and seek, and they realize that when someone leaves the room they will come back. Toddlers also point to pictures in books and look in appropriate places when you ask them to find objects.

In Piaget's view, around the same time children develop object permanence, they also begin to exhibit **Stranger Anxiety**, *which is a fear of unfamiliar people* (Crain, 2005). Babies may demonstrate this by crying and turning away from a stranger, by clinging to a caregiver, or by attempting to reach their arms toward familiar faces such as parents. Stranger anxiety results when a child is unable to assimilate the stranger into an existing schema; therefore, she can't predict what her experience with that stranger will be like, which results in a fear response.

**Critique of Piaget**: Piaget thought that children's ability to understand objects, such as learning that a rattle makes a noise when shaken, was a cognitive skill that develops slowly as a child matures and interacts with the environment. Today, developmental psychologists think Piaget was incorrect. Researchers have found that even very young children understand objects and how they work long before they have experience with those objects (Baillargeon, 1987; Baillargeon, Li, Gertner, & Wu, 2011). For example, Piaget believed that infants did not fully master object permanence until substage 5 of the sensorimotor period (Thomas, 1979). However, infants seem to be able to recognize that objects have permanence at much younger ages. Diamond (1985) found that infants show earlier knowledge if the waiting period is shorter. At age 6 months, they retrieved the hidden object if their wait for retrieving the object is no longer than 2 seconds, and at 7 months if the wait is no longer than 4 seconds.

Even earlier, children as young as 3 months old demonstrated knowledge of the properties of objects that they had only viewed and did not have prior experience with them. In one study, 3-month-old infants were shown a truck rolling down a track and behind a screen. The box, which appeared solid but was actually hollow, was placed next to the track. The truck rolled past the box as would be expected. Then the box was placed on the track to block the path of the truck. When the truck was rolled down the track this time, it continued unimpeded. The infants spent significantly more time looking at this impossible event (Figure 3.16). Baillargeon (1987) concluded that they knew solid objects cannot pass through each other. Baillargeon's findings suggest that very young children have an understanding of objects and how they work, which Piaget (1954) would have said is beyond their cognitive abilities due to their limited experiences in the world.

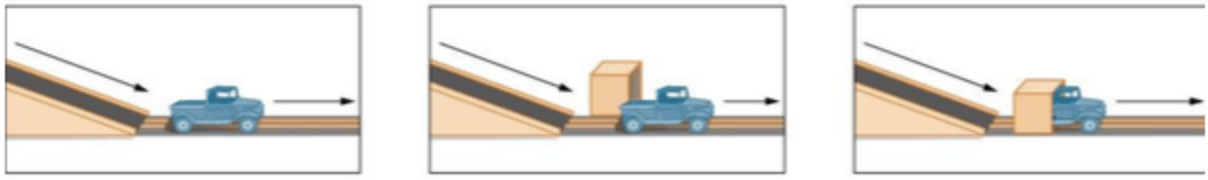



Figure 3.16 In Baillargeon's (1987) study,infants observed a truck (a) roll down an unobstructed track, (b) roll down an unobstructed track with an obstruction (box) beside it, and (c) roll down and pass through what appeared to be an obstruction.

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# 3.8: Infant Memory

Memory requires a certain degree of brain maturation, so it should not be surprising that infant memory is rather fleeting and fragile. As a result, older children and adults experience **infantile amnesia**, *the inability to recall memories from the first few years of life*. Several hypotheses have been proposed for this amnesia. From the biological perspective, it has been suggested that infantile amnesia is due to the immaturity of the infant brain, especially those areas that are crucial to the formation of autobiographical memory, such as the hippocampus. From the cognitive perspective, it has been suggested that the lack of linguistic skills of babies and toddlers limit their ability to mentally represent events; thereby, reducing their ability to encode memory. Moreover, even if infants do form such early memories, older children and adults may not be able to access them because they may be employing very different, more linguistically based, retrieval cues than infants used when forming the memory. Finally, social theorists argue that episodic memories of personal experiences may hinge on an understanding of "self", something that is clearly lacking in infants and young toddlers.

However, in a series of clever studies Carolyn Rovee-Collier and her colleagues have demonstrated that infants can remember events from their life, even if these memories are short- lived. Three-month-old infants were taught that they could make a mobile hung over their crib shake by kicking their legs. The infants were placed in their crib, on their backs. A ribbon was tied to one foot and the other end to a mobile. At first infants made random movements, but then came to realize that by kicking they could make the mobile shake. After two 9 minute sessions with the mobile, the mobile was removed. One week later the mobile was reintroduced to one group of infants and most of the babies immediately started kicking their legs, indicating that they remembered their prior experience with the mobile. A second group of infants was shown the mobile two weeks later and the babies made only random movements. The memory had faded (Rovee-Collier, 1987; Giles & Rovee-Collier, 2011). Rovee-Collier and Hayne (1987) found that 3-month-olds could remember the mobile after two weeks if they were shown the mobile and watched it move, even though they were not tied to it. This reminder helped most infants to remember the connection between their kicking and the movement of the mobile. Like many researchers of infant memory, Rovee-Collier (1990) found infant memory to be very context dependent. In other words, the sessions with the mobile and the later retrieval sessions had to be conducted under very similar circumstances or else the babies would not remember their prior experiences with the mobile. For instance, if the first mobile had had yellow blocks with blue letters, but at the later retrieval session the blocks were blue with yellow letters, the babies would not kick.

Infants older than 6 months of age can retain information for longer periods of time; they also need less reminding to retrieve information in memory. Studies of **Deferred Imitation**, that is, *the imitation of actions after a time delay*, can occur as early as six-months of age (Campanella & Rovee-Collier, 2005), but only if infants are allowed to practice the behavior they were shown. By 12 months of age, infants no longer need to practice the behavior in order to retain the memory for four weeks (Klein & Meltzoff, 1999).

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# 3.9: Language Development

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.



*Baby boy at 8 months.*

**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."

**Underextension:** 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 underextension. More often, however, a child may think that a label applies to all objects that are similar to the original object. In overextension all animals become "doggies", for example.

**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 amout 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!

## 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 or 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 through by following the behavior with words of praise or treats or any thing that increases the likelihood that the behavior will be repeated.

**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).

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# 3.10: Language

Our vast intelligence also allows us to have **Language**, *a system of communication that uses symbols in a regular way to create meaning*. Language gives us the ability to communicate our intelligence to others by talking, reading, and writing. Although other species have at least some ability to communicate, none of them have language. There are many components of language that will now be reviewed.

## Components of Language



Figure 3.17

**Phoneme:** A **phoneme** is *the smallest unit of sound that makes a meaningful difference in a language*. The word "bit" has three phonemes. In spoken languages, phonemes are produced by the positions and movements of the vocal tract, including our lips, teeth, tongue, vocal cords, and throat, whereas in sign languages phonemes are defined by the shapes and movement of the hands.

There are hundreds of unique phonemes that can be made by human speakers, but most languages only use a small subset of the possibilities. English contains about 45 phonemes, whereas other languages have as few as 15 and others more than 60. The Hawaiian language contains less phonemes as it includes only 5 vowels (a, e, i, o, and u) and 7 consonants (h, k, l, m, n, p, and w).

Infants are born able to detect all phonemes, but they lose their ability to do so as they get older; by 10 months of age a child's ability to recognize phonemes becomes very similar to that of the adult speakers of the native language. Phonemes that were initially differentiated come to be treated as equivalent (Werker & Tees, 2002).

**Morpheme:** Whereas phonemes are the smallest units of sound in language, a **morpheme** is *a string of one or more phonemes that makes up the smallest units of meaning in a language*. Some morphemes are prefixes and suffixes used to modify other words. For example, the syllable "re-" as in "rewrite" or "repay" means "to do again," and the suffix "-est" as in "happiest" or "coolest" means "to the maximum."

**Semantics: Semantics** refers to *the set of rules we use to obtain meaning from morphemes*. For example, adding "ed" to the end of a verb makes it past tense.

**Syntax: Syntax** is *the set of rules of a language by which we construct sentences*. Each language has a different syntax. The syntax of the English language requires that each sentence have a noun and a verb, each of which may be modified by adjectives and adverbs. Some syntaxes make use of the order in which words appear. For example, in English "The man bites the dog" is different from "The dog bites the man."

**Pragmatics:** The social side of language is expressed through **pragmatics**, or *how we communicate effectively and appropriately with others*. Examples of pragmatics include turn- taking, staying on topic, volume and tone of voice, and appropriate eye contact.

Lastly, words do not possess fixed meanings but change their interpretation as a function of the context in which they are spoken. We use **contextual information**, *the information surrounding language*, to help us interpret it. Examples of contextual information

include our knowledge and nonverbal expressions such as facial expressions, postures, and gestures. Misunderstandings can easily arise if people are not attentive to contextual information or if some of it is missing, such as it may be in newspaper headlines or in text messages.

## Language Developmental Progression

An important aspect of cognitive development is language acquisition. The order in which children learn language structures is consistent across children and cultures (Hatch, 1983). Starting before birth, babies begin to develop language and communication skills. At birth, babies recognize their mother's voice and can discriminate between the language(s) spoken by their mothers and foreign languages, and they show preferences for faces that are moving in synchrony with audible language (Blossom & Morgan, 2006; Pickens et al., 1994; Spelke & Cortelyou, 1981).



Figure 3.18. Source.

**Do newborns communicate?** Of course they do. They do not, however, communicate with the use of oral 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:** In terms of producing spoken language, babies begin to coo almost immediately. **Cooing** *is a one-syllable combination of a consonant and a vowel sound* (e.g., coo or ba). Interestingly, babies replicate sounds from their own languages. A baby whose parents speak French will coo in a different tone than a baby whose parents speak Spanish or Urdu. These gurgling, musical vocalizations 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.

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 grows more accustomed to a particular language**.**

At about 7 months, infants begin **Babbling**, engaging in *intentional vocalizations that lack specific meaning and comprise a consonant-vowel repeated sequence, such as ma-ma-ma, da-da-da*. Children babble as practice in creating specific sounds, and by the time they are 1 year old, the babbling uses primarily the sounds of the language that they are learning (de Boysson- Bardies, Sagart, & Durand, 1984). These vocalizations have a conversational tone that sounds meaningful even though it isn't. Babbling also helps children understand the social, communicative function of language. Children who are exposed to sign language babble in sign by making hand movements that represent real language (Petitto & Marentette, 1991).

**Gesturing:** Children communicate information through gesturing long before they speak, and there is some evidence that gesture usage predicts subsequent language development (Iverson & Goldin-Meadow, 2005). 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, which is referred to as* **receptive language**. 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 contribute to it. One of the first words that children understand is their own name, usually by about 6 months, followed by commonly used words like "bottle," "mama," and "doggie" by 10 to 12 months (Mandel, Jusczyk, & Pisoni, 1995). Infants shake their head "no" around 6–9 months, and they respond to verbal requests

to do things like “wave bye-bye” or “blow a kiss” around 9–12 months. Children also use contextual information, particularly the cues that parents provide, to help them learn language. Children learn that people are usually referring to things that they are looking at when they are speaking (Baldwin, 1993), and that that the speaker’s emotional expressions are related to the content of their speech.

**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. 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” to which the parent explains means, “I want some milk when I go with Daddy.”

**Language Errors:** The early utterances of children contain many errors, for instance, confusing /b/ and /d/, or /c/ and /z/. The words children create are often simplified, in part because they are not yet able to make the more complex sounds of the real language (Dobrich & Scarborough, 1992). Children may say “keekee” for kitty, “nana” for banana, and “vesketti” for spaghetti because it is easier. Often these early words are accompanied by gestures that may also be easier to produce than the words themselves. Children’s pronunciations become increasingly accurate between 1 and 3 years, but some problems may persist until school age.

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,* which is referred to as **Underextension.** Only the family’s Irish Setter is a “doggie”, for example. More often, however, a child may think that *a label applies to all objects that are similar to the original object,* which is called **Overextension.** For example, all animals become “doggies”.

**First words and cultural influences:** First words if the child is using English tend to be nouns. The child labels objects such as cup, ball, or other items that they regularly interact with. 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 relationships 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.

**Two word sentences and telegraphic (text message) speech:** By the time they become toddlers, children have a vocabulary of about 50-200 words and begin putting those words together in telegraphic speech, 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. **Telegraphic Speech/Text Message Speech** *occurs when unnecessary words are not used*. “Give baby ball” is used rather than “Give the baby the ball.”

**Infant-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 **Infant-directed Speech.** *It involves exaggerating the vowel and consonant sounds, using a high-pitched voice, and delivering the phrase with great facial expression* (Clark, 2009). Why is this done? Infants are frequently more attuned to the tone of voice of the person speaking than to the content of the words themselves, and are aware of the target of speech. Werker, Pegg, and McLeod (1994) found that infants listened longer to a woman who was speaking to a baby than to a woman who was speaking to another adult. It may be in order to clearly articulate the sounds of a word so that the child can hear the sounds involved. It may also 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 tune with one another.

## Theories of Language Development

Psychological theories of language learning differ in terms of the importance they place on nature and nurture. Remember that we are a product of both nature and nurture. Researchers now believe that language acquisition is partially inborn and partially learned through our interactions with our linguistic environment (Gleitman & Newport, 1995; Stork & Widdowson, 1974).

**Learning Theory:** Perhaps the most straightforward explanation of language development is that it occurs through the principles of learning, including association and reinforcement (Skinner, 1953). Additionally, Bandura (1977) described the importance of observation and imitation of others in learning language. There must be at least some truth to the idea that language is learned through environmental interactions or nurture. Children learn the language that they hear spoken around them rather than some

other language. Also supporting this idea is the gradual improvement of language skills with time. It seems that children modify their language through imitation and reinforcement, such as parental praise and being understood. For example, when a two-year-old child asks for juice, he might say, “me juice,” to which his mother might respond by giving him a cup of apple juice.

However, language cannot be entirely learned. For one, children learn words too fast for them to be learned through reinforcement. Between the ages of 18 months and 5 years, children learn up to 10 new words every day (Anglin, 1993). More importantly, language is more *generative* than it is imitative**.** Language is not a predefined set of ideas and sentences that we choose when we need them, but rather a system of rules and procedures that allows us to create an infinite number of statements, thoughts, and ideas, including those that have never previously occurred. When a child says that she “swimmed” in the pool, for instance, she is showing generativity. No adult speaker of English would ever say “swimmed,” yet it is easily generated from the normal system of producing language.

Other evidence that refutes the idea that all language is learned through experience comes from the observation that children may learn languages better than they ever hear them. Deaf children whose parents do not speak ASL very well nevertheless are able to learn it perfectly on their own, and may even make up their own language if they need to (Goldin-Meadow & Mylander, 1998). A group of deaf children in a school in Nicaragua, whose teachers could not sign, invented a way to communicate through made-up signs (Senghas, Senghas, & Pyers, 2005). The development of this new Nicaraguan Sign Language has continued and changed as new generations of students have come to the school and started using the language. Although the original system was not a real language, it is becoming closer and closer every year, showing the development of a new language in modern times.



Figure 3.19: Three theorists who provide explanations for language development. From left: B.F. Skinner, Source. Albert Bandura. Source. Noam Chomsky. Source.

**Chomsky and Nativism**: The linguist Noam Chomsky is a believer in the nature approach to language, arguing that human brains contain a **Language Acquisition Device** that includes a *universal grammar* that underlies all human language (Chomsky, 1965, 1972). According to this approach, each of the many languages spoken around the world (there are between 6,000 and 8,000) is an individual example of the same underlying set of procedures that are hardwired into human brains. Chomsky’s account proposes that children are born with a knowledge of general rules of syntax that determine how sentences are constructed. Language develops as long as the infant is exposed to it. No teaching, training, or reinforcement is required for language to develop as proposed by Skinner.

Chomsky differentiates between the **deep structure** of an idea; that is, *how the idea is represented in the fundamental universal grammar that is common to all languages*, and the **surface structure** of the idea or *how it is expressed in any one language*. Once we hear or express a thought in surface structure, we generally forget exactly how it happened. At the end of a lecture, you will remember a lot of the deep structure (i.e., the ideas expressed by the instructor), but you cannot reproduce the surface structure (the exact words that the instructor used to communicate the ideas).

Although there is general agreement among psychologists that babies are genetically programmed to learn language, there is still debate about Chomsky’s idea that there is a universal grammar that can account for all language learning. Evans and Levinson (2009) surveyed the world’s languages and found that none of the presumed underlying features of the language acquisition device were entirely universal. In their search they found languages that did not have noun or verb phrases, that did not have tenses (e.g., past, present, future), and even some that did not have nouns or verbs at all, even though a basic assumption of a universal grammar is that all languages should share these features.

**Critical Periods:** Anyone who has tried to master a second language as an adult knows the difficulty of language learning. Yet

children learn languages easily and naturally. Children who are not exposed to language early in their lives will likely never learn one. Case studies, including Victor the “Wild Child,” who was abandoned as a baby in France and not discovered until he was 12, and Genie, a child whose parents kept her locked in a closet from 18 months until 13 years of age, are (fortunately) two of the only known examples of these deprived children. Both of these children made some progress in socialization after they were rescued, but neither of them ever developed language (Rymer, 1993). This is also why it is important to determine quickly if a child is deaf, and to communicate in sign language immediately. Deaf children who are not exposed to sign language during their early years will likely never learn it (Mayberry, Lock, & Kazmi, 2002). The concept of critical periods highlights the importance of both nature and nurture for language development.




Figure 3.20: Victor of Aveyon. Source.

**Social pragmatics:** Another view emphasizes the very social nature of human language. Language from this view is not only a cognitive skill, but also a social one. Language is a tool humans use to communicate, connect to, influence, and inform others. Most of all, language comes out of a need to cooperate. The social nature of language has been demonstrated by a number of studies that have shown that children use several pre-linguistic skills (such as pointing and other gestures) to communicate not only their own needs, but what others may need. So a child watching her mother search for an object may point to the object to help her mother find it.

Eighteen-month to 30-month-olds have been shown to make linguistic repairs when it is clear that another person does not understand them (Grosse, Behne, Carpenter & Tomasello, 2010). Grosse et al. (2010) found that even when the child was given the desired object, if there had been any misunderstanding along the way (such as a delay in being handed the object, or the experimenter calling the object by the wrong name), children would make linguistic repairs. This would suggest that children are using language not only as a means of achieving some material goal, but to make themselves understood in the mind of another person.

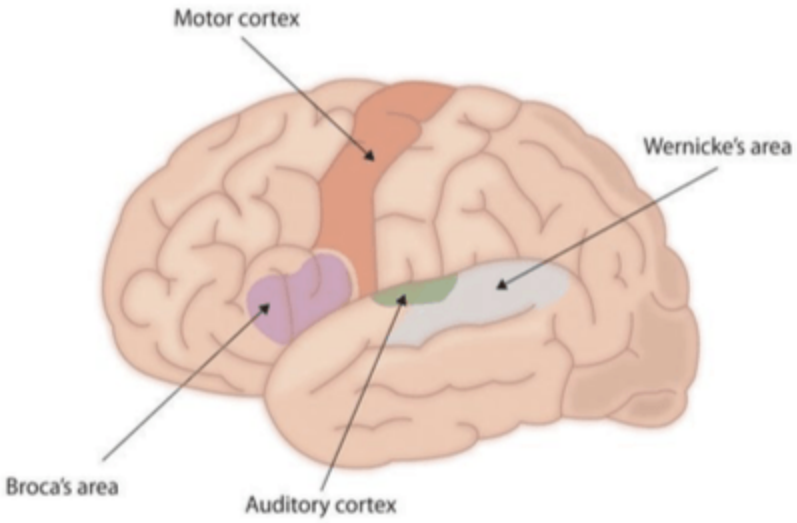



Figure 3.21 Drawing of Brain Showing Broca's and Wernicke's Areas. For most people, the left hemisphere is specialized for language. Broca's area, near the motor cortex, is involved in language production, whereas Wernicke's area, near the auditory cortex, is specialized for language comprehension. Source.

**Brain Areas for Language**: For the 90% of people who are right-handed, language is stored and controlled by the left cerebral cortex, although for some left-handers this pattern is reversed.Thesedifferencescan easily be seen in the results of neuroimaging studies that show that listening to and producing language creates greater activity in the left hemisphere than in the right. **Broca's area**, *an area in front of the left hemisphere near the motor cortex, is responsible for language production* (Figure 3.21). This area was first localized in the 1860s by the French physician Paul Broca, who studied patients with lesions to various parts of the brain. **Wernicke's area**, *an area of the brain next to the auditory cortex, is responsible for language comprehension.*

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# 3.11: Psychosocial Development and Attachment

## Emotional Development



At birth, infants exhibit two emotional responses: attraction and withdrawal. They show attraction to pleasant situations that bring comfort, stimulation, and pleasure. And they withdraw from unpleasant stimulation such as bitter flavors or physical discomfort. At around two months, infants exhibit social engagement in the form of social smiling as they respond with smiles to those who engage their positive attention. Pleasure is expressed as laughter at 3 to 5 months of age, and displeasure becomes more specific fear, sadness, or anger between ages 6 and 8 months. This fear is often associated with the presence of strangers or the departure of significant others known respectively as stranger wariness and separation anxiety which appear sometime between 6 and 15 months. And there is some indication that infants may experience jealousy as young as 6 months of age (Hart & Carrington, 2002).

During the second year of life, children begin to recognize themselves as they gain a sense of self as object. This is illustrated in the 15 month old child's ability to recognize one's own reflection in a mirror. (The classic mirror test or rouge test involves showing a toddler a mirror after having secretly rubbed red coloring on the child's nose. Children who are younger than 15 months of age may try to wipe the color from the mirror. But a 15 month old child may wipe the color from his or her own nose.) Once a child has achieved self-awareness, the child is moving toward understanding social emotions such as guilt, shame or embarrassment as well as sympathy or empathy. These will require an understanding of the mental state of others that is acquired at around age 3 to 5 and will be explored in our next lesson (Berk, 2007).

## Forming Attachments

**The significance of early attachments:** An attachment is desire for physical closeness with someone. The formation of attachments in infancy has been the subject of considerable research as attachments have been viewed as foundations for future relationships, as the basis for confidence and curiosity as toddlers, and as important influences on self-concept.

**Measuring attachment styles:** The classic model for studying styles of attachment involves having a caregiver and child come into a strange room filled with toys and observing the child's reactions. A securely attached child will play with the toys and bring one to the caregiver to show and describe from time to time. The child is content and secure as he or she explores the situation. An insecurely-resistant child will cling to the caregiver and refuse to go and play. An insecure-avoidant attachment style is indicated by a child who is neither curious nor clingy; rather the child sits and waits until time to go.

Attachment styles vary in the amount of security and closeness felt in the relationship and they can change with new experience. The type of attachment fostered in parenting styles varies by culture as well. For example, German parents value independence and Japanese mothers are typically by their children's sides. As a result, the rate of insecure-avoidant attachments is higher in Germany and insecure-resistant attachments are higher in Japan. These differences reflect cultural variation rather than true insecurity, however (van Ijzendoorn and Sagi, 1999). Keep in mind that methods for measuring attachment styles have been based on a model that reflects middle-class, U. S. values and interpretation. Newer methods for assessment attachment styles involve using a Q-sort technique in which a large number of behaviors are recorded on cards and the observer sorts the cards in a way

that reflects the type of behavior that occurs within the situation.

As we explore styles of attachment below, consider how these are evidenced also in adult relationships.

## Types of Attachments

**Secure:** A secure attachment is one in which the child feels confident that needs will be met in a timely and consistent way. In North America, this interaction may include emotional connection in addition to adequate care. However, even in cultures where mothers do not talk, cuddle, and play with their infants, secure attachments can develop (LeVine et. al., 1994). Secure attachments can form provided the child has consistent contact and care from one or more caregivers. Consistency of contacts may be jeopardized if the infant is cared for in a day care with a high turn-over of caregivers or if institutionalized and given little more than basic physical care. And while infants who, perhaps because of being in orphanages with inadequate care, have not had the opportunity to attach in infancy can form initial secure attachments several years later, they may have more emotional problems of depression, anger, or be overly friendly as they make adjustments (O'Connor et. als., 2003).

**Insecure Resistant:** This attachment style is marked by insecurity and a resistance to engaging in activities or play away from the caregiver. It is as if the child fears that the caregiver will abandon them and clings accordingly. (Keep in mind that clingy behavior can also just be part of a child natural disposition or temperament and does not necessarily reflect some kind of parental neglect.) The child may cry if separated from the caregiver and also cry upon their return. They seek constant reassurance that never seems to satisfy their doubt. This type of insecure attachment might be a result of not having needs met in a consistent or timely way. Consequently the infant is never sure that the world is a trustworthy place or that he or she can rely on others without some anxiety. A caregiver who is unavailable, perhaps because of marital tension, substance abuse, or preoccupation with work, may send a message to the infant he or she cannot rely on having needs met. A caregiver that attends to a child's frustration can help teach them to be calm and to relax. But an infant who receives only sporadic attention when experiencing discomfort may not learn how to calm down.

**Insecure-Avoidant:** This too is an attachment style marked by insecurity. But this style is also characterized by a tendency to avoid contact with the caregiver and with others. This child may have learned that needs typically go unmet and learns that the caregiver does not provide care and cannot be relied upon for comfort, even sporadically. An insecure-avoidant child learns to be more independent and disengaged. Such a child might sit passively in a room filled with toys until it is time to go.

**Disorganized:** This represents the most insecure style of attachment and occurs when the child is given mixed, confused, and inappropriate responses from the caregiver. For example, a mother who suffers from schizophrenia may laugh when a child is hurting or cry when a child exhibits joy. The child does not learn how to interpret emotions or to connect with the unpredictable caregiver.

How common are the attachment styles among children in the United States? It is estimated that about 65 percent of children in the United States are securely attached. Twenty percent exhibit avoidant styles and 10 to 15 percent are resistant. Another 5 to 10 percent may be characterized as disorganized. How would this compare with adults in the United States? (We will look at this in our lesson on early adulthood.)

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# 3.12: Forming Attachments

**Attachment** *is the close bond with a caregiver from which the infant derives a sense of security*. The formation of attachments in infancy has been the subject of considerable research as attachments have been viewed as foundations for future relationships. Additionally, attachments form the basis for confidence and curiosity as toddlers, and as important influences on self- concept.



Figure 3.25: Mutually enjoyable interactions promote infant bonding. Credit: Peter Shanks.

**Freud's Psychoanalytic Theory:** According to Freud (1938) infants are oral creatures who obtain pleasure from sucking and mouthing objects. Freud believed the infant will become attached to a person or object that provides this pleasure. Consequently, infants were believed to become attached to their mother because she was the one who satisfied their oral needs and provided pleasure. Freud further believed that the infants will become attached to their mothers "if the mother is relaxed and generous in her feeding practices, thereby allowing the child a lot of oral pleasure," (Shaffer, 1985, p. 435). Was Freud correct in his explanation for why infants became attached?

**Harlow's Research:** In one classic study showing if nursing was the most important factor to attachment, Wisconsin University psychologists Harry and Margaret Harlow investigated the responses of young monkeys. The infants were separated from their biological mothers, and two surrogate mothers were introduced to their cages. One, the wire mother, consisted of a round wooden head, a mesh of cold metal wires, and a bottle of milk from which the baby monkey could drink. The second mother was a foam-rubber form wrapped in a heated terry-cloth blanket. The infant monkeys went to the wire mother for food, but they overwhelmingly preferred and spent significantly more time with the warm terry-cloth mother.The warm terry-cloth mother provided no food but did provide comfort (Harlow, 1958). *The infant's need for physical closeness and touching is referred to as* **contact comfort**. Contact comfort is believed to be the foundation for attachment. The Harlows' studies confirmed that babies have social as well as physical needs. Both monkeys and human babies need a secure base that allows them to feel safe. From this base, they can gain the confidence they need to venture out and explore their worlds.

**Bowlby's Theory:** Building on the work of Harlow and others, John Bowlby developed the concept of attachment theory. He defined attachment as the affectional bond or tie that an infant forms with the mother (Bowlby, 1969). An infant must form this bond with a primary caregiver in order to have normal social and emotional development. In addition, Bowlby proposed that this attachment bond is very powerful and continues throughout life. He used the concept of secure base to define a healthy attachment between parent and child (Bowlby, 1982). A **secure base** *is a parental presence that gives the child a sense of safety as the child explores the surroundings.*

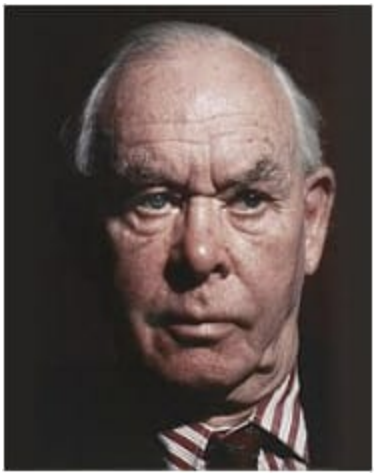


Figure 3.26: John Bowlby. Source.

Bowlby said that two things are needed for a healthy attachment: The caregiver must be responsive to the child's physical, social, and emotional needs; and the caregiver and child must engage in mutually enjoyable interactions (Bowlby, 1969). Additionally, Bowlby observed that infants would go to extraordinary lengths to prevent separation from their parents, such as crying, refusing to be comforted, and waiting for the caregiver to return. He observed that these same expressions were common to many other mammals, and consequently argued that these negative responses to separation serve an evolutionary function. Because mammalian infants cannot feed or protect themselves, they are dependent upon the care and protection of adults for survival. Thus, those infants who were able to maintain proximity to an attachment figure were more likely to survive and reproduce.

## Erikson: Trust vs. Mistrust

As previously discussed in chapter 1, Erikson formulated an eight stage theory of psychosocial development. Erikson was in agreement on the importance of a secure base, arguing that the most important goal of infancy was the development of a basic sense of trust in one's caregivers. Consequently, the first stage, trust vs. mistrust, highlights the importance of attachment. Erikson maintained that the first year to year and a half of life involves the establishment of a sense of trust (Erikson, 1982). Infants are dependent and must rely on others to meet their basic physical needs as well as their needs for stimulation and comfort. A caregiver who consistently meets these needs instills a sense of trust or the belief that the world is a trustworthy place. The caregiver should not worry about overly indulging a child's need for comfort, contact or stimulation.

**Problems establishing trust**: Erikson (1982) believed that mistrust could contaminate all aspects of one's life and deprive the individual of love and fellowship with others. Consider the implications for establishing trust if a caregiver is unavailable or is upset and ill-prepared to care for a child. Or if a child is born prematurely, is unwanted, or has physical problems that make him or her less desirable to a parent. Under these circumstances, we cannot assume that the parent is going to provide the child with a feeling of trust.

## Mary Ainsworth and the Strange Situation Technique

Developmental psychologist Mary Ainsworth, a student of John Bowlby, continued studying the development of attachment in infants. Ainsworth and her colleagues created a laboratory test that measured an infant's attachment to his or her parent. The test is called **The Strange Situation Technique** because it is *conducted in a context that is unfamiliar to the child and therefore likely to heighten the child's need for his or her parent* (Ainsworth, 1979).

During the procedure, that lasts about 20 minutes, the parent and the infant are first left alone, while the infant explores the room full of toys. Then a strange adult enters the room and talks for a minute to the parent, after which the parent leaves the room. The stranger stays with the infant for a few minutes, and then the parent again enters and the stranger leaves the room. During the entire session, a video camera records the child's behaviors, which are later coded by trained coders. The investigators were especially interested in how the child responded to the caregiver leaving and returning to the room, referred to as the "reunion." On the basis of their behaviors, the children are categorized into one of four groups where each group reflects a different kind of attachment relationship with the caregiver. One style is secure and the other three styles are referred to as insecure.

- A child with a **secure attachment style** usually explores freely while the caregiver is present and may engage with the

stranger. The child will typically play with the toys and bring one to the caregiver to show and describe from time to time. The child may be upset when the caregiver departs, but is also happy to see the caregiver return.

- A child with an **ambivalent** (sometimes called resistant) **attachment style** is wary about the situation in general, particularly the stranger, and stays close or even clings to the caregiver rather than exploring the toys. When the caregiver leaves, the child is extremely distressed and is ambivalent when the caregiver returns. The child may rush to the caregiver, but then fails to be comforted when picked up. The child may still be angry and even resist attempts to be soothed.
- A child with an **avoidant attachment style** will avoid or ignore the mother, showing little emotion when the mother departs or returns. The child may run away from the mother when she approaches. The child will not explore very much, regardless of who is there, and the stranger will not be treated much differently from the mother.
- A child with a **disorganized/disoriented attachment style** seems to have an inconsistent way of coping with the stress of the strange situation. The child may cry during the separation, but avoid the mother when she returns, or the child may approach the mother but then freeze or fall to the floor.

How common are the attachment styles among children in the United States? It is estimated that about 65 percent of children in the United States are securely attached. Twenty percent exhibit avoidant styles and 10 to 15 percent are ambivalent. Another 5 to 10 percent may be characterized as disorganized.



Figure 3.27. Source.

Some cultural differences in attachment styles have been found (Rothbaum, Weisz, Pott, Miyake, & Morelli, 2000). For example, German parents value independence and Japanese mothers are typically by their children's sides. As a result, the rate of insecure-avoidant attachments is higher in Germany and insecure-resistant attachments are higher in Japan. These differences reflect cultural variation rather than true insecurity, however (van Ijzendoorn and Sagi, 1999).

Keep in mind that methods for measuring attachment styles have been based on a model that reflects middle-class, U. S. values and interpretation. Newer methods for assessment attachment styles involve using a **Q-sort technique** *in which a large number of behaviors are recorded on cards and the observer sorts the cards in a way that reflects the type of behavior that occurs within the situation* (Waters, 1987). There are 90 items in the third version of the Q-sort technique, and examples of the behaviors assessed include:

- When child returns to mother after playing, the child is sometimes fussy for no clear reason.
- When the child is upset or injured, the child will accept comforting from adults other than mother.
- Child often hugs or cuddles against mother, without her asking or inviting the child to do so
- When the child is upset by mother's leaving, the child continues to cry or even gets angry after she is gone.

At least two researchers observe the child and parent in the home for 1.5-2 hours per visit. Usually two visits are sufficient to gather adequate information. The parent is asked if the behaviors observed are typical for the child. This information is used to test the validity of the Strange Situation classifications across age, cultures, and with clinical populations.

**Caregiver Interactions and the Formation of Attachment:** Most developmental psychologists argue that a child becomes **securely attached** when there is consistent contact from one or more caregivers who meet the physical and emotional needs of the child in a responsive and appropriate manner. However, even in cultures where mothers do not talk, cuddle, and play with their infants, secure attachments can develop (LeVine et. al., 1994).

The **insecure ambivalent style** occurs when the parent is insensitive and responds inconsistently to the child's needs. Consequently, the infant is never sure that the world is a trustworthy place or that he or she can rely on others without some anxiety. A caregiver who is unavailable, perhaps because of marital tension, substance abuse, or preoccupation with work, may

send a message to the infant he or she cannot rely on having needs met. An infant who receives only sporadic attention when experiencing discomfort may not learn how to calm down. The child may cry if separated from the caregiver and also cry upon their return. They seek constant reassurance that never seems to satisfy their doubt. Keep in mind that clingy behavior can also just be part of a child's natural disposition or temperament and does not necessarily reflect some kind of parental neglect. Additionally, a caregiver that attends to a child's frustration can help teach them to be calm and to relax.

The **insecure avoidant style** is marked by insecurity, but this style is also characterized by a tendency to avoid contact with the caregiver and with others. This child may have learned that needs typically go unmet and learns that the caregiver does not provide care and cannot be relied upon for comfort, even sporadically. An insecure avoidant child learns to be more independent and disengaged.

The **insecure disorganized/disoriented style** represents the most insecure style of attachment and occurs when the child is given mixed, confused, and inappropriate responses from the caregiver. For example, a mother who suffers from schizophrenia may laugh when a child is hurting or cry when a child exhibits joy. The child does not learn how to interpret emotions or to connect with the unpredictable caregiver. This type of attachment is also often seen in children who have been abused. Research has shown that abuse disrupts a child's ability to regulate their emotions (Main & Solomon, 1990).



Figure 3.28. Source.

**Caregiver Consistency:** Having a consistent caregiver may be jeopardized if the infant is cared for in a day care setting with a high turn-over of staff or if institutionalized and given little more than basic physical care. Infants who, perhaps because of being in orphanages with inadequate care, have not had the opportunity to attach in infancy may still form initial secure attachments several years later. However, they may have more emotional problems of depression, anger, or be overly friendly as they interact with others (O'Connor et. al., 2003).

**Social Deprivation:** Severe deprivation of parental attachment can lead to serious problems. According to studies of children who have not been given warm, nurturing care, they may show developmental delays, failure to thrive, and attachment disorders (Bowlby, 1982). **Non-organic failure to thrive** is the *diagnosis for an infant who does not grow, develop, or gain weight on schedule*. In addition, postpartum depression can cause even a well-intentioned mother to neglect her infant.

**Reactive Attachment Disorder:** Children who experience social neglect or deprivation, repeatedly change primary caregivers that limit opportunities to form stable attachments, or are reared in unusual settings (such as institutions) that limit opportunities to form stable attachments can certainly have difficulty forming attachments. According to the Diagnostic and Statistical

Manual of Mental Disorders, 5th edition (American Psychiatric Association, 2013), *those children experiencing neglectful situations and also displaying markedly disturbed and developmentally inappropriate attachment behavior, such as being inhibited and withdrawn, minimal social and emotional responsiveness to others, and limited positive affect, may be diagnosed with* **Reactive Attachment Disorder.** This disorder often occurs with developmental delays, especially in cognitive and language areas. Fortunately, the majority of severely neglected children do not develop Reactive Attachment Disorder, which occurs in less than 10% of such children. The quality of the caregiving environment after serious neglect affects the development of this disorder.

**Resiliency:** *Being able to overcome challenges and successfully adapt* is **Resiliency.** Even young children can exhibit strong resiliency to harsh circumstances. Resiliency can be attributed to certain personality factors, such as an easy-going temperament. Some children are warm, friendly, and responsive, whereas others tend to be more irritable, less manageable, and difficult to console, and these differences play a role in attachment (Gillath, Shaver, Baek, & Chun, 2008; Seifer, Schiller, Sameroff, Resnick,

& Riordan, 1996). It seems safe to say that attachment, like most other developmental processes, is affected by an interplay of genetic and socialization influences.

Receiving support from others also leads to resiliency. A positive and strong support group can help a parent and child build a strong foundation by offering assistance and positive attitudes toward the newborn and parent. In a direct test of this idea, Dutch researcher van den Boom (1994) randomly assigned some babies' mothers to a training session in which they learned to better respond to their children's needs. The research found that these mothers' babies were more likely to show a secure attachment style in comparison to the mothers in a control group that did not receive training.

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# 3.13: 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 temperment. 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.

Temperament doesn't change dramatically as we grow up, but we may learn how to work around and manage our temperamental qualities. Temperament may be one of the things about us that stays the same throughout development.

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# 3.14: Psychosocial Development

## Erikson's Stages for Infants and Toddlers

**Trust vs. mistrust**: Erikson maintained that the first year to year and a half of life involves the establishment of a sense of trust. Infants are dependent and must rely on others to meet their basic physical needs as well as their needs for stimulation and comfort. A caregiver who consistently meets these needs instills a sense of trust or the belief that the world is a trustworthy place. The caregiver should not worry about overly indulging a child's need for comfort, contact or stimulation. This view is in sharp contrast with the Freudian view that a parent who overly indulges the infant by allowing them to suck too long or be picked up too frequently will be spoiled or become fixated at the oral stage of development.

**Problems establishing trust:** Consider the implications for establishing trust if a caregiver is unavailable or is upset and ill-prepared to care for a child. Or if a child is born prematurely, is unwanted, or has physical problems that make him or her less desirable to a parent. Unwanted pregnancies can be experienced by busy, upper-middle class professional couples as well as young, unmarried mothers, or couples in the midst of relational strains. Under these circumstances, we cannot assume that the parent is going to provide the child with a feeling of trust. However, keep in mind that children can also exhibit strong resiliency to harsh circumstances. Resiliency can be attributed to certain personality factors, such as an easy-going temperament and receiving support from others. So a positive and strong support group can help a parent and child build a strong foundation by offering assistance and positive attitudes toward the newborn and parent.



**Autonomy vs. shame and doubt:** As the child begins to walk and talk, an interest in independence or autonomy replaces a concern for trust. The toddler tests the limits of what can be touched, said, and explored. Erikson believed that toddlers should be allowed to explore their environment as freely as safety allows and in so doing will develop a sense of independence that will later grow to self-esteem, initiative, and overall confidence. If a caregiver is overly anxious about the toddler's actions for fear that the child will get hurt or violate other's expectation, the caregiver can give the child the message that he or she should be ashamed of their behavior and instill a sense of doubt in their own abilities. Parenting advice based on these ideas would be to keep your toddler safe, but let him or her learn by doing. A sense of pride seems to rely on doing rather than being told how capable one is as well (Berger, 2005).

## Conclusion

We have explored the dramatic story of the first two years of life. Rapid physical growth, neurological development, language acquisition, the movement from hands on to mental learning, an expanding emotional repertoire, and the initial conceptions of self and others make this period of life very exciting. These abilities are shaped into more sophisticated mental processes, self-concepts, and social relationships during the years of early childhood.

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# 3.15: Erikson - Autonomy vs. Shame and Doubt

As the child begins to walk and talk, an interest in independence or autonomy replaces a concern for trust. The toddler tests the limits of what can be touched, said, and explored. Erikson (1982) believed that toddlers should be allowed to explore their environment as freely as safety allows and in so doing will develop a sense of independence that will later grow to self-esteem, initiative, and overall confidence. If a caregiver is overly anxious about the toddler's actions for fear that the child will get hurt or violate other's expectation, the caregiver can give the child the message that he or she should be ashamed of their behavior and instill a sense of doubt in their own abilities. Parenting advice based on these ideas would be to keep your toddler safe, but let him or her learn by doing.

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# 3.16: Measuring Infant Development

The Bayley Scales of Infant and Toddler Development, Third Edition (Bayley-III) comprehensively assess children within the age range of 1 to 42 months (Pearson Education, 2016). Children are evaluated in five key developmental domains, including cognition, language, social-emotional, motor, and adaptive behavior. By identifying developmental delays in the very young, the Bayley Scales can highlight which early intervention techniques might be most beneficial. Detailed information is even able to be obtained from non-verbal children.

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# 3.17: Infancy Lecture

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## Lecture Transcript

Now we will look closely at the first two years of development known as infancy. Infants and toddlers, or children beginning to learn to walk, are the subject of this lesson.

First, let's explore the dramatic physical growth that occurs in this time period. The average newborn weighs about 7.5 pounds. Most infants range between 6 and 9 pounds at birth. After a few days of moderate weight loss due to the expulsion of waste and getting used to feeding, the infant starts growing rapidly and usually doubles in weight by 4 months. The birth weight is tripled by 12 months so a 7 pound baby now weighs approximately 21 pounds. Most newborns are 19 to 21 inches in length or on average about 20 inches at birth. The typical two year old is 32 to 36 inches in height. There is dramatic change in the body proportions during the first two years. A newborn's head is about 25 percent of its entire length. By adulthood, however, the head is proportionately smaller.

While we may notice changes on the outside of the body, incredible growth is taking place within the brain. The brain is 25 percent its adult weight at birth, but by age 2 it has grown to 75 percent of its adult weight. Much of this growth takes place in the dendrites or the branch-like extensions coming from the neuron. These are the point of entry for chemical messages that are picked up from the surrounding neurons through the synapse. This growth reaches a peak at age 2 and then connections that are not used are pruned away to increase the efficiency of the remaining connections. In this way, experience begins to shape our hard wiring.

Myelin is a fatty substance that coats and insulates the axon of neurons. It speeds up the rate of transmission of the neural impulse and improves functioning. Myelination, or this insulating process, is also occurring in infancy and continues at a less rapid pace into adolescence. Not all parts of the cortex mature at the same rate. The prefrontal cortex located behind the forehead is the last to mature. It is not fully developed for years to come. (We'll look at how it goes through a second period of growth in adolescence.)

Motor development refers to movement. When we are born, we are equipped with a number of automatic responses to stimuli known as reflexes. These include a sucking reflex, the rooting reflex which involves an infant turning the head toward anything that touches the cheek, and a palmar grasp, strongly clasping the hand around anything touching the palm.

After a few days or weeks, reflexive actions begin to be replaced with voluntary movements or motor skills. These skills are not mastered in infancy, however. Motor skill development continues throughout childhood. Gross motor skills are large movements of the body that require large muscles such as those located in the back, legs, and arms.

Fine motor skills are smaller, more precise movements of the hand and fingers. These take longer to acquire as they involve being able to coordinate the hand and eye and being able to manipulate the hands to grab and move small objects.

The newborn's senses are not equally developed at birth. Vision is the least developed sense at birth. Newborn vision would be considered 'legally blind' if found in an adult. Newborns can only focus on objects between 8 and 16 inches away. And they have trouble scanning objects and tracking moving objects visually. Practice and the development of neural connections and myelin will help. The ability to focus both eyes on an object, or use binocular vision, begins at around 14 weeks. Newborns see contrast but do not distinguish between similar hues until they grow a few months older. Hearing, however, is well developed at birth.

Breast milk is considered the ideal diet for newborns. The calories and nutrition provided are perfectly suited for infants. There are numerous other advantages of breastfeeding. These include providing immunity and decreasing the risk of infection in the newborn child. And breastfeeding is free. Most mothers are able to breastfeed, but should be avoided by mothers with HIV or untreated tuberculosis, mothers who are using illicit drugs, and those who are undergoing radiation or chemotherapy treatments. Wet nursing, or the use of wet-nurses (lactating women other than the mother) to feed infants has been a practice found throughout history. Does it exist today? Sometimes breast milk is recommended even if unavailable from the mother. In these cases, human breast milk is still recommended and is available for use in neonatal care units and other locations where breast milk is needed. Mothers can donate their breast milk for such use. Find out more at prolacta.com.

There are two major concerns of malnutrition found in developing countries. One is infantile marasmus which is overall starvation causes by a lack of caloric intake. Toddlers may suffer from a protein deficiency called kwashiorkor. In the United States, giving children too much milk as toddlers can spoil the appetite for other foods and lead to iron deficiencies seen in early childhood. This is referred to as milk-anemia.

Now we explore cognitive development by focusing on language acquisition and changes in the ability to think and reason. Piaget's stage for infancy is sensorimotor intelligence. Remember that the infant uses senses and motor skills to explore the world.

There are six stages of sensorimotor intelligence.

During these first two sub stages, the infant if focused primarily on their own body. The **first stage** is found in the first month of life. This is a time when reflexive action is used to react to the world. The newborn has few mental concepts or schemes outside of sucking, chewing, rooting and other automatic movements. If any object is placed near the mouth, the infant may turn and begin to suck on it. The infant may cry or grimace if that object is sour or otherwise brings discomfort.

**Stage two** lasts through the fourth month of development. Now the infant is making first adaptations to the environment. A sour object may now be recognized as something to avoid rather than to suck on. A new schema is built through this process of accommodation.

**Stage Three**, repeating actions, lasts from the 4th month through the 8th month of development. Now the infant begins to repeat actions to see what effect this might bring. Shaking a rattle, repeating a syllable, or rocking back and forth are examples. The child is increasingly interacting with others in this third and fourth stage.

**Stage four** lasts from 8 to 12 months and is a time of new adaptations and anticipation. The baby begins to look forward to upcoming events such as taking a walk or a bath. This signals being able to consider the future. Piaget suggested that object permanence, or the knowledge that an object continues to exist even if it cannot be seen, is acquired at this age. Prior to about 8 months of age, the baby who is shown a toy and then blocking the toy from view will rapidly lose interest. Piaget concluded that the baby thinks it no longer exists. After this age, the baby will remove the barrier and seek the toy that is out of view. But infants at much younger ages respond to events that do not seem to be possible. An infant shown a fuzzy red square moving behind a screen and emerging as a yellow circle will look at this event for a long time recognizing that this should not have occurred. A red square that moves behind a screen should still be the same when it reappears.

**Stage Five** is the stage of experimentation. In stages five and six, the child is busy interacting with the world and making discoveries. Most of these discoveries come in the form of trial and error learning. The child learns about gravity by letting objects drop. Or the child learns that pulling on the dog's ear brings about a cry. This trial and error learning can be very messy as pots and pans and household items are pulled off the shelves and contents are spread all around!

In **stage six**, the child begins to make the transition to thinking in order to solve problems. This lasts from 18-24 months. The child now uses mental combinations rather than solely relying on trial and error to solve problems. This ability requires the child to see something and then imitate it at some later point. This is called deferred imitation. Here is an example. A child wants to get out of a room but cannot grasp the door knob. After trying to open the door, the child decides to use a technique they remember having witnessed before and knocks on the door. Aha! This brings someone to open the door.

Let's look at how communication develops in the first two years of life. Can newborns communicate? Of course. But they use cries, facial expressions, and body posture to do so. At 2 to 3 months, the baby begins making intentional vocalizations such as cooing or squealing. They laugh and they also learn the pace of speech by taking turns in communication. Deaf babies also vocalize at this age.

Gesturing is an easy way for babies to communicate. At 5 months, the baby points to objects, shows frustration, and delight by

waving the arms. Gesturing is so natural to infants that learning sign language has been seen as an effective way to enhance communication at this age.

At around 6 months, the infant begins to babble. Babbling is typically a vowel consonant combination repeated over and over like "nananana" or "gagagaga". These are the precursors to language and gradually only those sounds that are used will be retained.

Deaf babies also babble at this age with gestures that partially indicate a concept or thought. Our understanding of language seems to come before our ability to articulate. Understanding comes before speaking. Have you studied another language? Chances are you were able to understand before you could form communicative sentences in that language.

Our first spoken words seem to emerge at around 12 months of age. The baby may use holophrasic speech which is a single word to convey an entire thought. "Ju" may mean "I'd like some more juice." or "Where's my milk?" The meaning has to be interpreted by the listener and this can be very difficult if you've not been around that particular baby. Once a label is learned, the baby may underextend or overextend the use of that label. For example, "Mama" may only refer to the child's mother or "doggie" may be used to describe all of the four legged animals in the zoo. These children typically have a vocabulary of about 50 words. English speaking children tend to have many nouns or labels for objects. Deaf babies' vocalizations may disappear by age 2.

At 18 months there is a vocabulary growth spurt. Toddlers will use more and more two word sentences that make them easier to understand. Eventually they use more 3 to 5 word sentences in a kind of speech referred to as "telegraphic speech" because it reads much like telegraph-unnecessary words are eliminated. Many people are unfamiliar with telegraphs today, but texting is similar so I call this "text message" speech. Rather than texting, "Hi there." How are you? What's been going on with you lately?" We text, "Sup!" You get the idea.

Have you ever witnessed a person talking with a baby? Their facial expressions and intonation probably changed so that they began a kind of sing song talk known as child-directed speech. It goes like this. "Dooooo yooooou like moooommmy's paretteee beeeeeeds?"
Why do people do this? It gets attention. Babies respond to this type of speech in which vowel and consonant sounds are exaggerated and pitch goes up. You may have responded too!

There are several theories of language development. The famous linguist, Noam Chomsky, suggests that our ability to learn language is inborn. We have a neurological construct in our brains known as a language acquisition device. Learning language is simply a matter of being exposed to language. Skinner suggested that language is taught through reinforcement. A child is given praise and hugs for uttering a word and this increases the likelihood that this will be repeated.

Our final angle for understanding infancy is psychosocial development. Let's examine emotions and relationships in the first two years of life.

Newborns demonstrate a number of emotional states. One of the first is attraction and withdrawal. They respond in order to get closer to people and situations or to move away. Social smiling is very engaging and begins at about 2 months of age. The infant returns a smile and a connection seems to have been made. (Infants can imitate facial expressions much earlier, but social smiling is a reaction to someone else.) Babies laugh at 3 to 5 months of age and demonstrate fear, anger, and sadness a few months later.

An interesting study in which a baby's reactions are noted when a mother pays attention to a doll and ignores the baby suggests that babies can feel jealousy as early as 6 months of age. Once infants become more cognizant of those around, stranger wariness and separation anxiety can emerge. Stranger wariness is the discomfort a baby feels when being held or surrounded by strangers. This new look is sometimes hard for them to assimilate. Separation anxiety can be expressed through cries and protests when a caregiver leaves. Not all babies experience these emotions to the same degree. But they are usually interpreted as a sign that an attachment has been formed between the baby and certain caregivers. These usually subside after a few weeks for months.

Self-awareness or self-recognition is seen at around 15 months of age. This is the understanding that the image in the mirror is you. The classic test of self-awareness involves putting a dot of rouge on a baby's nose and seeing how they react when looking in the mirror. A baby who tries to grab the nose in the mirror does not recognize the image as self. But the baby who starts to rub the dot off of their own nose has self-awareness or recognition. (Many animals do not achieve self-awareness. I have a dog that gets very upset with his image in the mirror and starts to bark. I once had a parakeet that was in love with his own image in the mirror!)

A sense of self leads to the development of social emotions such as guilt or shame and embarrassment. These emotions require the ability to see how others might view one's own actions.

An attachment is the desire to be close to someone else. Early attachments between infants and caregivers have been the subject of a good deal of research. The assumption has been that our early relationships set the stage for subsequent relationships. These relationships can influence later relationships, but they do not dictate the future.

The most common type of attachment is a **secure attachment**. This is thought to be developed if the child receives care and affection early in life. This leads to a sense of trust and curiosity in early childhood. The child feels confident and explores the world feeling safe and secure. Again, the presence of separation anxiety may signal that an attachment has formed.

One type of insecure attachment style is **insecure-resistant**. This style may result from inconsistent care which sends the message that needs can often go unmet. The child is clingy and can never receive enough attention to feel okay. The child may fear being alone and worry that the caregiver will leave even when in their presence.

The **insecure-avoidant** style of attachment is one in which the child does not seek comfort or care from others. This child is neither curious nor clingy. Rather, such a child may seem to be precociously independent. The child is uncomfortable with closeness. This is the least common style of attachment and was described after viewing the interactions between mothers with schizophrenia and their children. The disorganized style of attachment doesn't seem to make sense in a given situation. The mother may have laughed when the child was upset or grown angry when the child was happy. The child may cry or be combative with others during play. Or they may freeze or retreat in social situations. The behavior is unpredictable and emotions are inappropriate.

Attachment styles show cultural variation. This suggests that cultural expectations find their way in parenting practices and in attachment styles.

Children aren't born with personalities, but they do demonstrate differences in temperament soon after birth. Temperament refers to inborn behavioral tendencies. These are fairly consistent ways of relating to other people and situations. These aren't shaped by parenting. But they may be tendencies that are interpreted by others and later give rise to personality traits we view in ourselves. For example, a baby who is very predictable may be labeled as a "good" baby and this may view may later be internalized into the self-concept.

The New York Longitudinal Study began in the 1950s and was an effort to monitor differences in children and keep track of these differences through the years. Qualities of temperament include: Activity. How active is the baby? Rhythmicity. Does the baby follow a routine of regularity? Do they want to eat and sleep at the same times each day? Approach/Withdrawal: How does the baby respond to others? Adaptability: Can the baby easily adjust when situations change? Intensity. How intensely does the child laugh or cry or react to situations? Mood. What is the child's mood? Is it consistent or does it fluctuate? Persistence and attention span. Does the baby tend to stay on task and focus? Distractibility. Is it easy to distract the child from an activity? Sensory threshold. Does the baby react strongly to changes in food texture, light, or sound?

The dimensions of temperament have been used to derive temperament types. The easy or flexible child is adaptable and shows a consistent, pleasant mood. The difficult, active, or feisty child reacts intensely to changes in routine or has wide variation in mood.

The slow to warm up or cautious child withdraws from others and may dislike disruptions in routine. Many children are difficult to categorize. But knowing a child's temperament may be useful in dealing effectively with that child. Parenting styles that match temperament work well and are known as a goodness of fit.

Erikson's first psychosocial stage of development is trust versus mistrust. The dependent infant has to rely upon others for survival and stimulation. If the baby is given consistent, loving care, a sense of trust develops. If not, the child may feel insecure and worry that needs will go unmet. What kinds of situations might undermine the establishment of a sense of trust? Parents who are unaffectionate or resentful about the baby or who are preoccupied with discord in the relationship, who are unavailable or tense may convey this in their interaction with the child. An early stressful environment can have an impact on neurological development making the child more sensitive to stress in the future.

Establishing trust requires adequate care, sufficient oral stimulation through sucking, physical contact, and an overall message of care.

In the second year of life, children are becoming able to walk and talk and explore. Erikson suggests that their primary concern is that of independence, autonomy, or self-rule. They need to be allowed to be independent within safe limits. Performing a task and seeing the end result can give a child a sense of pride in their accomplishments. This self-evaluation is more effective than having others say "I'm so proud of you." In our next lesson, we'll focus on early childhood.

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# 3.18: Infancy PPT

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# 3.19: Conclusion

We have explored the dramatic story of the first two years of life. Rapid physical growth, neurological development, language acquisition, the movement from hands on to mental learning, an expanding emotional repertoire, and the initial conceptions of self and others make this period of life very exciting. These abilities are shaped into more sophisticated mental processes, self-concepts, and social relationships during the years of early childhood.

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# 4: EARLY CHILDHOOD


4.1: Introduction to Early Childhood

4.2: Sleep

4.3: Physical Development

4.4: Sexual Development

4.5: Gender

4.6: Motor Skill Development

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4.27: Early Childhood (References)



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# 4.1: Introduction to Early Childhood

## Learning Objectives

- Summarize overall physical growth during early childhood.
- Describe growth of structures in the brain during early childhood.
- Identify examples of gross and fine motor skill development in early childhood.
- Identify nutritional concerns for children in early childhood.
- Examine nutritional content in popular foods consumed by children in early childhood.
- Describe sexual development in early childhood.
- Define preoperational intelligence.
- Illustrate animism, egocentrism, and centration using children's games or media.
- Describe language development in early childhood.
- Illustrate scaffolding.
- Explain private speech.
- Explain theory of mind.
- Explain Erikson's stages of psychosocial development for toddlers and children in early childhood.
- Contrast models of parenting styles.
- Examine concerns about child care.
- Explain theories of self from Cooley and Mead.
- Summarize theories of gender role development.
- Examine concerns about childhood stress and development.

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# 4.2: Sleep

During early childhood, there is wide variation in the number of hours of hours of sleep recommended per day. For example, two year-olds may still need 15-16 hours per day, while a six year-old may only need 7-8 hours. The National Sleep Foundation's 2015 recommendations based on age are listed in Figure 4.6.

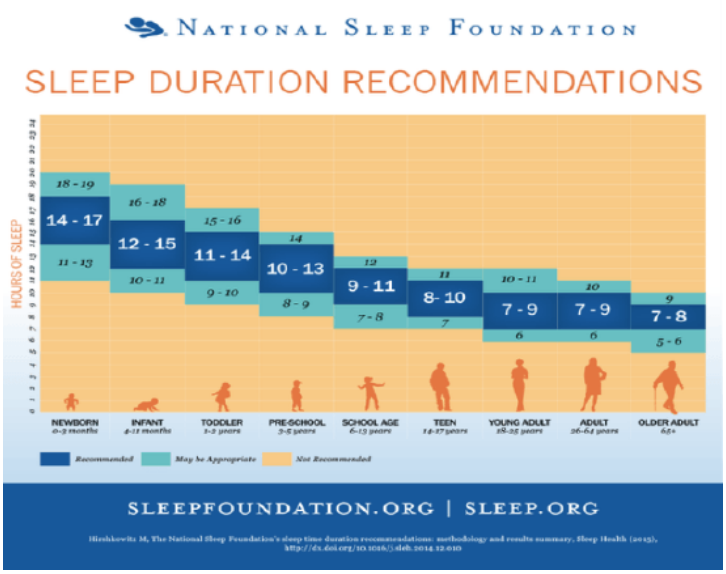



Figure 4.6

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# 4.3: Physical Development

## Growth in 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 vegetable 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!

To what extent do these tips address cultural practices? How might these tips vary by culture?

## Brain Maturation

**Brain weight:** 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 continues 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.

## 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 my daughters from ages 2 to 7 years.









**Growth in the hemispheres and corpus callosum:** Between ages 3 and 6, the left hemisphere of the brain grows dramatically. This side of the brain or hemisphere is typically involved in language skills. The right hemisphere continues to grow throughout early childhood and is involved in tasks that require spatial skills such as recognizing shapes and patterns. The corpus callosum 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. (I once saw a 5 year old hopping on one foot, rubbing his stomach and patting his head all at the same time. I asked him what he was doing and he replied, "My teacher said this would help my corpus callosum!" Apparently, his kindergarten teacher had explained the process!)

**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. Even the booth at a restaurant affords the opportunity to slide around in the seat or disappear underneath and imagine being a sea creature in a cave! Of course, this can be frustrating to a caregiver, but it's the business of early childhood. 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 (have you ever heard of the song "itsy, bitsy, spider"?). Mastering the fine art of cutting one's own fingernails or tying shoes will take a lot of practice and maturation. Motor skills continue to develop in middle childhood-but for preschoolers, play that deliberately involves these skills is emphasized.

Go ahead. Sing along and practice your fine motor skills.

## Sexual Development in Early Childhood

Historically, children have been thought of as innocent or incapable of sexual arousal (Aries, 1962). Yet, the physical dimension of sexual arousal is present from birth. But to associate the elements of seduction, power, love, or lust that is part of the adult meanings of sexuality would be inappropriate. Sexuality begins in childhood as a response to physical states and sensation and cannot be interpreted as similar to that of adults in any way (Carroll, 2007).

**Infancy:** Boys and girls are capable of erections and vaginal lubrication even before birth (Martinson, 1981). Arousal can signal overall physical contentment and stimulation that accompanies feeding or warmth. And infants begin to explore their bodies and touch their genitals as soon as they have the sufficient motor skills. This stimulation is for comfort or to relieve tension rather than to reach orgasm (Carroll, 2007).

**Early Childhood:** Self-stimulation is common in early childhood for both boys and girls. Curiosity about the body and about others' bodies is a natural part of early childhood as well. Consider this example. A mother is asked by her young daughter: "So it's okay to see a boy's privates as long as it's the boy's mother or a doctor?" The mother hesitates a bit and then responds, "Yes. I think that's alright." "Hmmm," the girl begins, "When I grow up, I want to be a doctor!" Hopefully, this subject is approached in a way that teaches children to be safe and know what is appropriate without frightening them or causing shame.

As children grow, they are more likely to show their genitals to siblings or peers, and to take off their clothes and touch each other (Okami et al., 1997). Masturbation is common for both boys and girls. Boys are often shown by other boys how to masturbate. But girls tend to find out accidentally. And boys masturbate more often and touch themselves more openly than do girls (Schwartz, 1999).

Hopefully, parents respond to this without undue alarm and without making the child feel guilty about their bodies. Instead, messages about what is going on and the appropriate time and place for such activities help the child learn what is appropriate.

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# 4.4: Sexual Development

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# 4.5: Gender

Another important dimension of the self is the sense of self as male or female. Preschool aged children become increasingly interested in finding out the differences between boys and girls both physically and in terms of what activities are acceptable for each. While two year olds can identify some differences and learn whether they are boys or girls, preschoolers become more interested in what it means to be male or female. This *self-identification based on a continuum from male to female* is known as **Gender Identity**. The development of gender and gender identity appears to be due to an interaction among biological, social and representational influences (Ruble, Martin, & Berenbaum, 2006).

**Gender Roles,** *or the expectations associated with being male or female*, are learned in one's culture throughout childhood and into adulthood. Learning theorists suggest that gender role socialization is a result of the ways in which parents, teachers, friends, schools, religious institutions, media and others send messages about what is acceptable or desirable behavior as males or females. This socialization begins early-in fact, it may even begin the moment a parent learns that a child is on the way. Knowing the sex of the child can conjure up images of the child's behavior, appearance, and potential on the part of a parent, and this stereotyping continues to guide perception through life. Consider parents of newborns, shown a 7 pound, 20 inch baby, wrapped in blue (a color designating males) describe the child as tough, strong, and angry when crying. Shown the same infant in pink (a color used in the United States for baby girls), these parents are likely to describe the baby as pretty, delicate, and frustrated when crying (Maccoby & Jacklin, 1987). Female infants are held more, talked to more frequently and given direct eye contact, while male infants play is often mediated through a toy or activity. In addition to being recipients of these cultural expectations, we are individuals who also modify these roles (Kimmel, 2008).

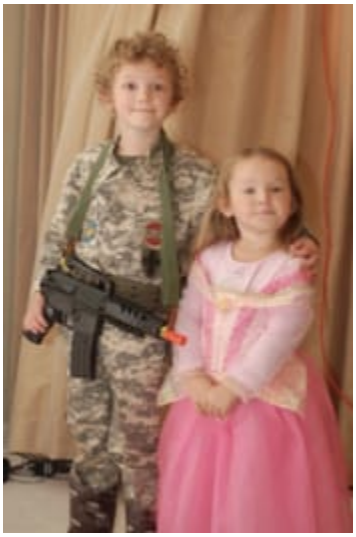


Figure 4.21: Gender roles. Source.

Sons are given tasks that take them outside the house and that have to be performed only on occasion, while girls are more likely to be given chores inside the home such as cleaning or cooking that is performed daily. Sons are encouraged to think for themselves when they encounter problems and daughters are more likely to be given assistance, even when they are working on an answer. This impatience is reflected in teachers waiting less time when asking a

female student for an answer than when asking for a reply from a male student (Sadker & Sadker, 1994). Girls are given the message from teachers that they must try harder and endure in order to succeed while boys' successes are attributed to their intelligence. Of course, the stereotypes of advisors can also influence which kinds of courses or vocational choices girls and boys are encouraged to make.

Based on what young children learn about gender from parents, peers, and those who they observe in society, *children develop their own conceptions of the attributes associated with maleness or femaleness* which is referred to as **Gender Schemas**. Friends discuss what is acceptable for boys and girls and popularity may be based on modeling what is considered ideal behavior or looks for the sexes. Girls tend to tell one another secrets to validate others as best friends while boys compete for position by emphasizing their knowledge, strength or accomplishments. This focus on accomplishments can even give rise to exaggerating accomplishments in boys, but girls are discouraged from showing off and may learn to minimize their accomplishments as a

result.

**Gender Dysphoria**: A growing body of research is now focused on **Gender Dysphoria**, or *the distress accompanying a mismatch between one's gender identity and biological sex* (American Psychiatric Association, 2013). Although prevalence rates are low, at approximately 0.3 percent of the United States population (Russo, 2016), children who later identified as transgender, often stated that they were the opposite gender as soon as they began talking. Comments such as stating they prefer the toys, clothing and anatomy of the opposite sex, while rejecting the toys, clothing, and anatomy of their assigned sex are criteria for a diagnosis of Gender Dysphoria in children. Certainly many young children do not conform to the gender roles modeled by the culture and even push back against assigned roles. However, they do not experience discomfort regarding their gender identity and would not be identified with Gender Dysphoria. A more comprehensive description of Gender Dysphoria, including current treatments, will be discussed in the chapter on adolescence.

**How much does gender matter?** In the United States, gender differences are found in social interactions, media messages, and in school experiences. Even into college and professional school, females are less vocal in the classrooms and much more at risk for sexual harassment from teachers, coaches, classmates, and professors. The stereotypes that males should be strong, forceful, active, dominant, and rational and that females should be pretty, subordinate, unintelligent, emotional, and gabby are portrayed in children's toys, books, commercials, video games, movies, television shows and music. In adulthood, these differences are reflected in income gaps between men and women. Women working full-time earn only about 74 percent the income of men. Additionally, women experience higher rates of rape, domestic violence, and eating disorders, while higher rates of violent death occur for men in young adulthood.

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# 4.6: Motor Skill Development

Early childhood is the time period when most children acquire the basic skills for locomotion, such as running, jumping, and skipping, and object control skills, such as throwing, catching, and kicking (Clark, 1994). Children continue to improve their gross motor skills as they run and jump. Fine motor skills are also being refined in activities, such as pouring water into a container, drawing, coloring, and buttoning coats and using scissors. Table 4.1 highlights some of the changes in motor skills during early childhood between 2 and 5 years of age. The development of greater coordination of muscles groups and finer precision can be seen during this time period. Thus, average 2-year-olds may be able to run with slightly better coordination than they managed as a toddler, yet they would have difficulty peddling a tricycle, something the typical 3-year-old can do. We see similar changes in fine motor skills with 4-year-olds who no longer struggle to put on their clothes, something they may have had problems with two years earlier. Motor skills continue to develop into middle childhood, but for those in early childhood, play that deliberately involves these skills is emphasized.

*Table 4.1: Changes in Gross and Fine Motor Skills in Early Childhood*

| | Gross Motor Skills | Fine Motor Skills |
|---|---|---|
| Age 2 | • Can kick a ball without losing balance<br>• Can pick up objects while standing, without losing balance (*This often occurs by 15 months. It is a cause for concern if not seen by 2 years.*)<br>• Can run with better coordination (*May still have a wide stance.*) | • Able to turn a door knob<br>• Can look through a book, turning one page at a time<br>• Can build a tower of 6 to 7 cubes<br>• Able to put on simple clothes without help. (*The child is often better at removing clothes than putting them on.*) |
| Age 3 | • Can briefly balance and hop on one foot<br>• May walk up stairs with alternating feet (without holding the rail)<br>• Can pedal a tricycle | • Can build a block tower of more than nine cubes<br>• Can easily place small objects in a small opening<br>• Can copy a circle<br>• Drawing a person with 3 parts<br>• Feeds self easily |
| Age 4 | • Shows improved balance<br>• Hops on 1 foot without losing balance<br>• Throws a ball overhand with coordination | • Can cut out a picture using scissors<br>• Drawing a square<br>• Managing a spoon and fork neatly while eating<br>• Putting on clothes properly |
| Age 5 | • Has better coordination (getting the arms, legs, and body to work together)<br>• Skips, jumps, and hops with good balance<br>• Stays balanced while standing on one foot with eyes closed | • Shows more skill with simple tools and writing utensils<br>• Can copy a triangle<br>• Can use a knife to spread soft foods |

*Source: NIH: US National Library of Medicine.*

**Children's Art:** Children's art highlights many developmental changes. Rhoda Kellogg (1969) noted that children's drawings underwent several transformations. Starting with about 20 different types of scribbles at age 2, children move on to experimenting with the placement of scribbles on the page. By age 3 they are using the basic structure of scribbles to create shapes and are beginning to combine these shapes to create more complex images. By 4 or 5 children are creating images that are more recognizable representations of the world. These changes are a function of improvement in motor skills, perceptual development,

and cognitive understanding of the world (Cote & Golbeck, 2007).

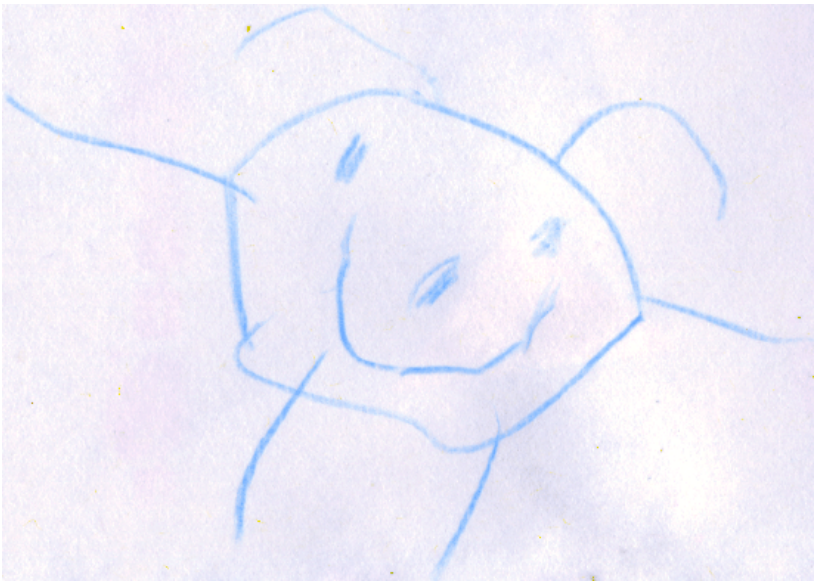


Figure 4.4. Source.

The drawing of tadpoles (see Figure: 4.4) is a pervasive feature of young children's drawings of self and others. Tadpoles emerge in children's drawing at about the age of 3 and have been observed in the drawings of young children around the world (Gernhardt, Rubeling & Keller, 2015). Despite the universality of tadpoles in children's drawings, there are cultural variations in the size, number of facial features, and emotional expressions displayed. Gernhardt et al. (2015) found that children from Western contexts (i.e., urban areas of Germany and Sweden) and urban educated non-Western contexts (i.e., urban areas of Turkey, Costa Rica and Estonia) drew larger images, with more facial detail and more positive emotional expressions, while those from non-Western rural contexts (i.e., rural areas of Cameroon and India) depicted themselves as smaller, with less facial details and a more neutral emotional expression. The authors suggest that cultural norms of non-Western traditionally rural cultures, which emphasize the social group rather than the individual, may be one of the factors for the difference in the size of the figure. The tadpole figures of children from Western cultures often took up most of the page. Coming from cultures that emphasize the individual, this should not be surprising.

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# 4.7: Cognitive Development

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.

## Preoperational Intelligence

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. Watch this segment in which the actor Robin Williams sings a song to teach children the difference between what is alive and what is not alive. (Interesting, the puppets in the background sing and dance the phrase "it's not alive". This might be a bit confusing to the viewers!). 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).

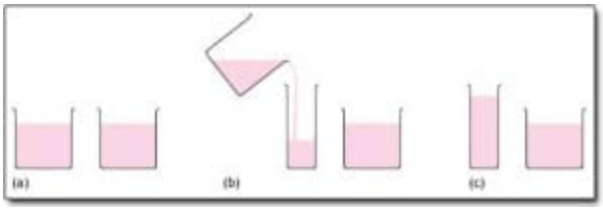
YouTube Video

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View this YouTube Video online

**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 buttons, the child is likely to respond that there are more black buttons. As the child's vocabulary improves and more schemes are

developed, the ability to classify objects improves.



*Conservation of Liquid. Does pouring liquid in a tall, narrow container make it have more?*

**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!" Watch the following examples of conversation errors of quantity and volume:

## Theory of Mind

Imagine showing a child of three a bandaid box and asking the child what is in the box. Chances are, the child will reply, "bandaids." 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, they may respond, "crayons". If you ask what a friend would have thought was in the box, the response would still be "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. This video describes a research in which theory of mind is linked to popularity.

# Language Development

**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:** Remember Vygotsky and the Zone of Proximal Development? Children can be assisted 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).

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# 4.8: Brain Maturation

**Brain weight:** The brain is about 75 percent its adult weight by three years of age. By age 6, it is at 95 percent its adult weight (Lenroot & Giedd, 2006). 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, strategize, and control attention and emotion, makes it increasingly possible to inhibit emotional outbursts and understand how to play games. Understanding the game, thinking ahead, and coordinating movement improve with practice and myelination.

**Growth in the Hemispheres and Corpus Callosum:** Between ages 3 and 6, the left hemisphere of the brain grows dramatically. This side of the brain or hemisphere is typically involved in language skills. The right hemisphere continues to grow throughout early childhood and is involved in tasks that require spatial skills, such as recognizing shapes and patterns. The **Corpus Callosum,** *a dense band of fibers that connects the two hemispheres of the brain,* contains approximately 200 million nerve fibers that connect the hemispheres (Kolb & Whishaw, 2011). The corpus callosum is illustrated in Figure 4.2.

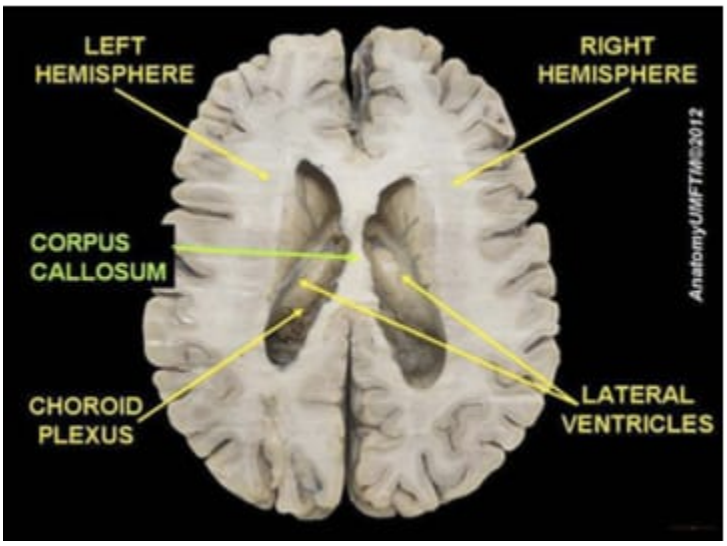



Figure 4.2: Corpus Callosum. Source.

The corpus callosum is located a couple of inches below the longitudinal fissure, which runs the length of the brain and separates the two cerebral hemispheres (Garrett, 2015). Because the two hemispheres carry out different functions, they communicate with each other and integrate their activities through the corpus callosum. Additionally, because incoming information is directed toward one hemisphere, such as visual information from the left eye being directed to the right hemisphere, the corpus callosum shares this information with the other hemisphere.

The corpus callosum undergoes a growth spurt between ages 3 and 6, and this results in improved coordination between right and left hemisphere tasks. For example, in comparison to other individuals, children younger than 6 demonstrate difficulty coordinating an Etch A Sketch toy because their corpus callosum is not developed enough to integrate the movements of both hands (Kalat, 2016).

**Neuroplasticity:** The control of some specific bodily functions, such as movement, vision, and hearing, is performed in specified areas of the cortex, and if these areas are damaged, the individual will likely lose the ability to perform the corresponding function. For instance, if an infant suffers damage to facial recognition areas in the temporal lobe, it is likely that he or she will never be able to recognize faces (Farah, Rabinowitz, Quinn, & Liu, 2000). On the other hand, the brain is not divided up in an entirely rigid way. The brain's neurons have a remarkable capacity to reorganize and extend themselves to carry out particular functions in response to the needs of the organism, and to repair damage. As a result, the brain constantly creates new neural communication routes and rewires existing ones. **Neuroplasticity** refers to *the brain's ability to change its structure and function in response to experience or damage*. Neuroplasticity enables us to learn and remember new things and adjust to new experiences. Our brains are the most "plastic" when we are young children, as it is during this time that we learn the most about our environment. On the other hand, neuroplasticity continues to be observed even in adults (Kolb & Fantie, 1989).

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# 4.9: 4.9 Vygotsky's Sociocultural Theory of Cognitive Development

Lev Vygotsky (1896-1934) was a Russian psychologist who argued that culture has a major impact on a child's cognitive development. Piaget and Gesell believed development stemmed directly from the child, and although Vygotsky acknowledged intrinsic development, he argued that it is the language, writings, and concepts arising from the culture that elicit the highest level of cognitive thinking (Crain, 2005). He believed that the social interactions with adults and more learned peers can facilitate a child's potential for learning. Without this interpersonal instruction, he believed children's minds would not advance very far as their knowledge would be based only on their own discoveries. Let's review some of Vygotsky's key concepts.



Figure 4.11: Lev Vygotsky. Source.

**Zone of Proximal Development and Scaffolding:** Vygotsky's best known concept is the **Zone of Proximal Development (ZPD).** Vygotsky stated that children should be taught in the ZPD, *which occurs when they can almost perform a task, but not quite on their own without assistance*. With the right kind of teaching, however, they can accomplish it successfully. A good teacher identifies a child's ZPD and helps the child stretch beyond it. Then the adult (teacher) gradually withdraws support until the child can then perform the task unaided. Researchers have applied the metaphor of scaffolds (the temporary platforms on which construction workers stand) to this way of teaching. **Scaffolding** *is the temporary support that parents or teachers give a child to do a task.*

**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 see things from another's point of view.* Vygotsky, however, believed that children talk to themselves in order to solve problems or clarify thoughts. As children learn to think in words, they do so aloud 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. This inner speech is not as elaborate as the speech we use when communicating with others (Vygotsky, 1962).



Figure 4.12: Children talk to themselves to better problem solve. Source.

**Contrast with Piaget:** Piaget was highly critical of teacher-directed instruction believing that teachers who take control of the child's learning place the child into a passive role (Crain, 2005). Further, teachers may present abstract ideas without the child's true understanding, and instead they just repeat back what they heard. Piaget believed children must be given opportunities to discover concepts on their own. As previously stated, Vygotsky did not believe children could reach a higher cognitive level without instruction from more learned individuals. Who is correct? Both theories certainly contribute to our understanding of how children learn.

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# 4.10: Information Processing

Information processing researchers have focused on several issues in cognitive development for this age group, including improvements in attention skills, changes in the capacity and the emergence of executive functions in working memory. Additionally, in early childhood memory strategies, memory accuracy, and autobiographical memory emerge. Early childhood is seen by many researchers as a crucial time period in memory development (Posner & Rothbart, 2007).

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# 4.11: Attention

Changes in attention have been described by many as the key to changes in human memory (Nelson & Fivush, 2004; Posner & Rothbart, 2007). However, attention is not a unified function; it is comprised of sub-processes. *The ability to switch our focus between tasks or external stimuli* is called **divided attention** or **multitasking.** This is separate from *our ability to focus on a single task or stimulus, while ignoring distracting information,* called **selective attention**. Different from these is **sustained attention**, or *the ability to stay on task for long periods of time*. Moreover, we also have attention processes that influence our behavior and enable us to inhibit a habitual or dominant response, and others that enable us to distract ourselves when upset or frustrated.



Figure 4.13 These children will experience difficulty focusing on anything except playing. Source.

**Divided Attention:** Young children (age 3-4) have considerable difficulties in dividing their attention between two tasks, and often perform at levels equivalent to our closest relative, the chimpanzee, but by age five they have surpassed the chimp (Hermann, Misch, Hernandez-Lloreda & Tomasello, 2015; Hermann & Tomasello, 2015). Despite these improvements, 5-year-olds continue to perform below the level of school-age children, adolescents, and adults.

**Selective Attention:** Children's ability with selective attention tasks improve as they age. However, this ability is also greatly influenced by the child's temperament (Rothbart & Rueda, 2005), the complexity of the stimulus or task (Porporino, Shore, Iarocci & Burack, 2004), and along with whether the stimuli are visual or auditory (Guy, Rogers & Cornish, 2013). Guy et al. (2013) found that children's ability to selectively attend to visual information outpaced that of auditory stimuli. This may explain why young children are not able to hear the voice of the teacher over the cacophony of sounds in the typical preschool classroom (Jones, Moore & Amitay, 2015). Jones and his colleagues found that 4 to 7 year-olds could not filter out background noise, especially when its frequencies were close in sound to the target sound. In comparison, 8 to 11 year-old older children often performed similar to adults.

**Sustained Attention:** Most measures of sustained attention typically ask children to spend several minutes focusing on one task, while waiting for an infrequent event, while there are multiple distractors for several minutes. Berwid, Curko-Kera, Marks & Halperin (2005) asked children between the ages of 3 and 7 to push a button whenever a "target" image was displayed, but they had to refrain from pushing the button when a non-target image was shown. The younger the child, the more difficulty he or she had maintaining their attention.

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# 4.12: Memory

Based on studies of adults, people with amnesia, and neurological research on memory, researchers have proposed several "types" of memory (see Figure 4.14). **Sensory memory** (also called the *sensory register*) is *the first stage of the memory system, and it stores sensory input in its raw form for a very brief duration; essentially long enough for the brain to register and start processing the information*. Studies of auditory sensory memory have found that the sensory memory trace for the characteristics of a tone last about one second in 2 year-olds, two seconds in 3-year-olds, more than two seconds in 4-year-olds and three to five seconds in 6-year-olds (Glass, Sachse, & vob Suchodoletz, 2008). Other researchers have found that young children hold sounds for a shorter duration than do older children and adults, and that this deficit is not due to attentional differences between these age groups, but reflect differences in the performance of the sensory memory system (Gomes et al., 1999).

The second stage of the memory system is called *short-term* or **working memory**. Working memory is *the component of memory in which current conscious mental activity occurs*. Working memory often requires conscious effort and adequate use of attention to function effectively. As you read earlier, children in this age group struggle with many aspects of attention and this greatly diminishes their ability to consciously juggle several pieces of information in memory. The capacity of working memory, that is the amount of information someone can hold in consciousness, is smaller in young children than in older children and adults. The typical adult and teenager can hold a 7 digit number active in their short-term memory. The typical 5 year-old can hold only a 4 digit number active. This means that the more complex a mental task is, the less efficient a younger child will be in paying attention to, and actively processing, information in order to complete the task.

Changes in attention and the working memory system also involve changes in executive function. **Executive function (EF)** *refers to self-regulatory processes*, such as the ability to inhibit a behavior or cognitive flexibility, *that enable adaptive responses to new situations or to reach a specific goal*. Executive function skills gradually emerge during early childhood and continue to develop throughout childhood and adolescence. Like many cognitive changes, brain maturation, especially the prefrontal cortex, along with experience influence the development of executive function skills. A child, whose parents are more warm and responsive, use scaffolding when the child is trying to solve a problem, and who provide cognitively stimulating environments for the child show higher executive function skills (Fay-Stammbach, Hawes & Meredith, 2014). For instance, scaffolding was positively correlated with greater cognitive flexibility at age two and inhibitory control at age four (Bibok, Carpendale & Müller, 2009).

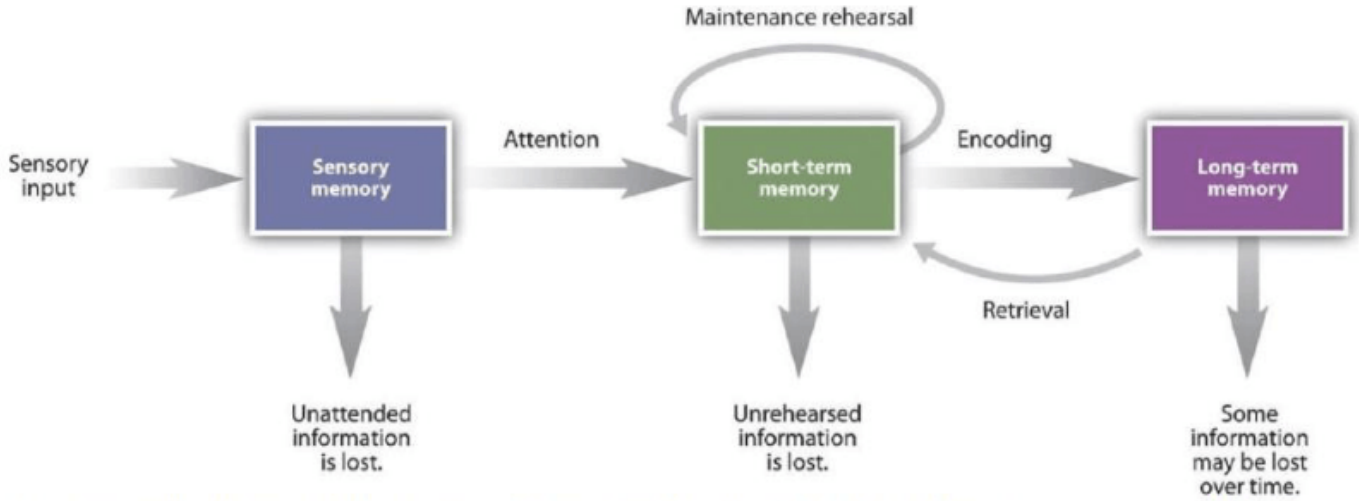



Figure 4.14. Memory can be characterized in terms of stages--the length of time that information remains available to us. Source: adapted from Atkinson, R. C., & Shiffrin, R. M. (1968). Human memory: A proposed system and its control processes. In K. Spence (Ed.) The psychology of learning and motivation *(Vol. 2). Oxford, England: Academic Press.*

Older children and adults use mental strategies to aid their memory performance. For instance, simple rote rehearsal may be used to commit information to memory. Young children often do not rehearse unless reminded to do so, and when they do rehearse, they often fail to use clustering rehearsal. In **clustering rehearsal,** *the person rehearses previous material while adding in additional information*. If a list of words is read out loud to you, you are likely to rehearse each word as you hear it along with any previous words you were given. Young children will repeat each word they hear, but often fail to repeat the prior words in the list. In Schneider, Kron-Sperl and Hunnerkopf's (2009) longitudinal study of 102 kindergarten children, the majority of children used

no strategy to remember information, a finding that was consistent with previous research. As a result, their memory performance was poor when compared to their abilities as they aged and started to use more effective memory strategies.



Figure 4.15 How long will these children remember their trip to Disneyland? Source.

The third component in memory is **long-term memory**, *which is also known as permanent memory*. A basic division of long-term memory is between declarative and non-declarative memory. **Declarative memories**, sometimes referred to as **explicit memories**, *are memories for facts or events that we can consciously recollect*. **Non-declarative memories**, sometimes referred to as **implicit memories**, *are typically automated skills that do not require conscious recollection*. Remembering that you have an exam next week would be an example of a declarative memory. In contrast, knowing how to walk so you can get to the classroom or how to hold a pencil to write would be examples of non-declarative memories. Declarative memory is further divided into semantic and episodic memory. **Semantic memories** *are memories for facts and knowledge that are not tied to a timeline*, while **episodic memories** *are tied to specific events in time*.

A component of episodic memory is **autobiographical memory,** *or our personal narrative*. As you may recall in Chapter 3 the concept of infantile amnesia was introduced. Adults rarely remember events from the first few years of life. In other words, we lack autobiographical memories from our experiences as an infant, toddler and very young preschooler. Several factors contribute to the emergence of autobiographical memory including brain maturation, improvements in language, opportunities to talk about experiences with parents and others, the development of theory of mind, and a representation of "self" (Nelson & Fivush, 2004). Two-year-olds do remember fragments of personal experiences, but these are rarely coherent accounts of past events (Nelson & Ross, 1980). Between 2 and 2 1/2 years of age children can provide more information about past experiences. However, these recollections require considerable prodding by adults (Nelson & Fivush, 2004). Over the next few years children will form more detailed autobiographical memories and engage in more reflection of the past.

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# 4.13: Neo-Piagetians

As previously discussed, Piaget's theory has been criticized on many fronts, and updates to reflect more current research have been provided by the **Neo-Piagetians**, *or those theorists who provide "new" interpretations of Piaget's theory*. Morra, Gobbo, Marini and Sheese (2008) reviewed Neo-Piagetian theories, which were first presented in the 1970s, and identified how these "new" theories combined Piagetian concepts with those found in Information Processing. Similar to Piaget's theory, Neo-Piagetian theories believe in constructivism, assume cognitive development can be separated into different stages with qualitatively different characteristics, and advocate that children's thinking becomes more complex in advanced stages. Unlike Piaget, Neo-Piagetians believe that aspects of information processing change the complexity of each stage, not logic as determined by Piaget.

Neo-Piagetians propose that working memory capacity is affected by biological maturation, and therefore restricts young children's ability to acquire complex thinking and reasoning skills. Increases in working memory performance and cognitive skills development coincide with the timing of several neurodevelopmental processes. These include myelination, axonal and synaptic pruning, changes in cerebral metabolism, and changes in brain activity (Morra et al., 2008). Myelination especially occurs in waves between birth and adolescence, and the degree of myelination in particular areas explains the increasing efficiency of certain skills. Therefore, brain maturation, which occurs in spurts, affects how and when cognitive skills develop. Additionally, all Neo-Piagetian theories support that experience and learning interact with biological maturation in shaping cognitive development.

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# 4.14: Play

Freud saw play as a means for children to release pent-up emotions and to deal with emotionally distressing situations in a more secure environment. Vygotsky and Piaget saw play as a way of children developing their intellectual abilities (Dyer & Moneta, 2006). All three theorists saw play as providing positive outcomes for children.



Figure 4.24 Which type of play are these two boys engaging in? Source.

Mildred Parten (1932) observed two to five year-old children and noted six types of play. Three types she labeled as non-social (unoccupied, solitary, and onlooker) and three types were categorized as social play (parallel, associative, and cooperative). Table 4.4 describes each type of play. Younger children engage in non-social play more than those older; by age five associative and cooperative play are the most common forms of play (Dyer & Moneta, 2006).

| Category | Description |
|---|---|
| Unoccupied Play | Children's behavior seems more random and without a specific goal. This is the least common form of play. |
| Solitary Play | Children play by themselves, do not interact with others, nor are they engaging in similar activities as the children around them. |
| Onlooker Play | Children are observing other children playing. They may comment on the activities and even make suggestions but will not directly join the play. |
| Parallel Play | Children play alongside each other, using similar toys, but do not directly act with each other. |
| Associative Play | Children will interact with each other and share toys but are not working toward a common goal. |
| Cooperative Play | Children are interacting to achieve a common goal. Children may take on different tasks to reach that goal. |

## box 4.2: imaginary companions

An intriguing occurrence in early childhood is the emergence of imaginary companions. Researchers differ in how they define what qualifies as an imaginary companion. Some studies include only invisible characters that the child refers to in conversation, or plays with for an extended period of time. Other researchers also include objects that the child personifies, such as a stuffed toy or doll, or characters the child impersonates every day. Estimates of the number of children who have imaginary companions varies greatly (from as little as 6% to as high as 65%) depending on what is included in the definition (Gleason, Sebanc, & Hartup, 2000).



Figure 4.25. Source.

Little is known about why children create imaginary companions, and more than half of all companions have no obvious trigger in the child's life (Masih, 1978). Imaginary companions are sometimes based on real people, characters from stories, or simply names the child has heard (Gleason, et. al., 2000). Imaginary companions often change over time. In their study, Gleason et al. (2000) found that 40% of the imaginary companions of the children they studied changed, such as developing superpowers, switching age, gender, or even dying, and 68% of the characteristics of the companion were acquired over time. This could reflect greater complexity in the child's "creation" over time and/or a greater willingness to talk about their imaginary playmates.

In addition, research suggests that contrary to the assumption that children with imaginary companions are compensating for poor social skills, several studies have found that these children are very sociable (Mauro, 1991; Singer & Singer, 1990; Gleason, 2002). However, studies have reported that children with imaginary companions are more likely to be first-borns or only-children (Masih, 1978; Gleason et al., 2000, Gleason, 2002). Although not all research has found a link between birth order and the incidence of imaginary playmates (Manosevitz, Prentice, & Wilson, 1973). Moreover, some studies have found little or no difference in the presence of imaginary companions and parental divorce (Gleason et al., 2000), number of people in the home, or the amount of time children are spending with real playmates (Masih, 1978; Gleason & Hohmann, 2006).

Do children treat real friends differently? The answer appears to be not really. Young children view their relationship with their imaginary companion to be as supportive and nurturing as with their real friends. Gleason has suggested that this might suggest that children form a schema of what is a friend, and use this same schema in their interactions with both types of friends (Gleason, et al., 2000; Gleason, 2002; Gleason & Hohmann, 2006).

## Children and the Media

Children view far more television today than in the 1960s; so much that they have been referred to as Generation M for Media. Almost all American families have at least one TV set, and half own three or more (Nielsen Company, 2009). For children age six and under, two-thirds watch television every day, usually for two hours (Rideout & Hamel, 2006). Even when involved in other activities, such as playing, there is often a television on nearby (Christakis, 2009; Kirkorian, Pempek, & Murphy, 2009). Research has consistently shown that too much television adversely affects children's behavior, health, and achievement (Gentile & Walsh, 2002; Robinson, Wilde, & Navracruz, 2001). Young children are less able to focus on active, hands-on play while the television is on, and background TV can negatively affect cognitive and language development as well as be linked to attention problems later in childhood (Schmidt, Pempek, & Kirkorian, 2008; Courage, Murphy, & Goulding, 2010).

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# 4.15: Children's Understanding of the World

Both Piaget and Vygotsky believed that children actively try to understand the world around them. More recently developmentalists have added to this understanding by examining how children organize information and develop their own theories about the world.



Figure 4.16. Source.

**Theory-Theory** is *the tendency of children to generate theories to explain everything they encounter*. This concept implies that humans are naturally inclined to find reasons and generate explanations for why things occur. Children frequently ask question about what they see or hear around them. When the answers provided do not satisfy their curiosity or are too complicated for them to understand, they generate their own theories. In much the same way that scientists construct and revise their theories, children do the same with their intuitions about the world as they encounter new experiences (Gopnik & Wellman, 2012). One of the theories they start to generate in early childhood centers on the mental states; both their own and those of others.

**Theory of mind** refers to *the ability to think about other people's thoughts*. This mental mind reading helps humans to understand and predict the reactions of others, thus playing a crucial role in social development. One common method for determining if a child has reached this mental milestone is the false belief task, described below.

The research began with a clever experiment by Wimmer and Perner (1983), who tested whether children can pass a false-belief test (see Figure 4.17).

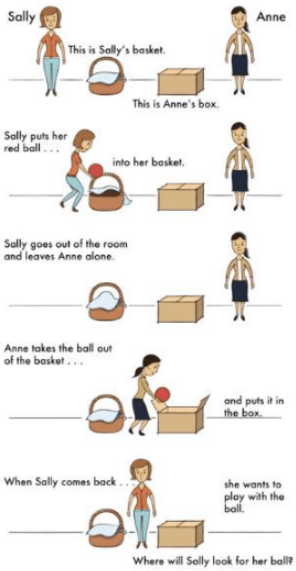



Figure 4.17. Source.

The child is shown a picture story of Sally, who puts her ball in a basket and leaves the room. While Sally is out of the room, Anne comes along and takes the ball from the basket and puts it inside a box. The child is then asked *where* Sally thinks the ball is located when she comes back to the room. Is she going to look first *in the box* or *in the basket*? The right answer is that she will look in the basket, because that's where she put it and thinks it is; but we have to infer this *false belief* against our own better knowledge that the ball is in the box. This is very difficult for children before the age of four because of the cognitive effort it takes. Three-year-olds have difficulty distinguishing between what they once thought was true and what they now know to be true. They feel confident that what they know now is what they have always known (Birch & Bloom, 2003). Even adults need to think through this task (Epley, Morewedge, & Keysar, 2004). To be successful at solving this type of task the child must separate what he or she "knows" to be true from what someone else might "think" is true. In Piagetian terms, they must give up a tendency toward egocentrism. The child must also understand that what guides people's actions and responses are what they "believe" rather than what is reality. In other words, people can mistakenly believe things that are false and will act based on this false knowledge. Consequently, prior to age four children are rarely successful at solving such a task (Wellman, Cross & Watson, 2001).

Researchers examining the development of theory of mind have been concerned by the overemphasis on the mastery of false belief as the primary measure of whether a child has attained theory of mind. Wellman and his colleagues (Wellman, Fang, Liu, Zhu & Liu, 2006) suggest that theory of mind is comprised of a number of components, each with its own developmental timeline (see Table 4.2).

**Table 4.2: Components of Theory of Mind**

| Component | Description |
|---|---|
| Diverse-desires | Understanding that two people may have different desires regarding the same object |
| Diverse-beliefs | Understanding that two people may hold different beliefs about an object |
| Knowledge access (knowledge/ignorance) | Understanding that people may or may not have access to information. |
| False belief | Understanding that someone might hold a belief based on false information. |
| Hidden emotion | Understanding that people may not always express their true emotions. |

Two-year-olds understand the diversity of desires, yet as noted earlier it is not until age four or five that children grasp false belief, and often not until middle childhood do they understand that people may hide how they really feel. In part, because children in early childhood have difficulty hiding how they really feel.

Those in early childhood in the US, Australia, and Germany develop theory of mind in the sequence outlined above. Yet, Chinese and Iranian preschoolers acquire knowledge access before diverse beliefs (Shahaeian, Peterson, Slaughter & Wellman, 2011). Shahaeian and colleagues suggested that cultural differences in child-rearing may account for this reversal. Parents in collectivistic cultures, such as China and Iran, emphasize conformity to the family and cultural values, greater respect for elders,

and the acquisition of knowledge and academic skills more than they do autonomy and social skills (Frank, Plunkett & Otten, 2010). This could reduce the degree of familial conflict of opinions expressed in the family. In contrast, individualistic cultures encourage children to think for themselves and assert their own opinion, and this could increase the risk of conflict in beliefs being expressed by family members. As a result, children in individualistic cultures would acquire insight into the question of diversity of belief earlier, while children in collectivistic cultures would acquire knowledge access earlier in the sequence. The role of conflict in aiding the development of theory of mind may account for the earlier age of onset of an understanding of false belief in children with siblings, especially older siblings (McAlister & Petersen, 2007; Perner, Ruffman & Leekman, 1994).

This awareness of the existence of theory of mind is part of social intelligence, such as recognizing 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 be empathic toward others. Moreover, this mind reading ability helps us to anticipate and predict people's actions. The awareness of the mental states of others is important for communication and social skills.

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# 4.16: Psychosocial Development

## A Look At Self-Concept, Gender Identity, And Family Life

### Self-Concept



Early childhood is a time of forming an initial sense of self. A self-concept or idea of who we are, what we are capable of doing, and how we think and feel is a social process that involves taking into consideration how others view us. It might be said, then, that in order to develop a sense of self, you must have interaction with others. Interactionist theorists, Cooley and Mead offer two interesting explanations of how a sense of self develops.

### Interactionism and Views of Self

**Cooley:** Charles Horton Cooley (1964) suggests that our self concept comes from looking at how others respond to us. This process, known as the looking-glass self involves looking at how others seem to view us and interpreting this as we make judgments about whether we are good or bad, strong or weak, beautiful or ugly, and so on. Of course, we do not always interpret their responses accurately so our self-concept is not simply a mirror reflection of the views of others. After forming an initial self-concept, we may use it as a mental filter screening out those responses that do not seem to fit our ideas of who we are. So compliments may be negated, for example. Think of times in your life when you feel self-conscious. The process of the looking-glass self is pronounced when we are preschoolers, or perhaps when we are in a new school or job or are taking on a new role in our personal lives and are trying to gauge our own performances. When we feel more sure of who we are we focus less on how we appear to others.

**Mead:** Herbert Mead (1967) offers an explanation of how we develop a social sense of self by being able to see ourselves through the eyes of others. There are two parts of the self: the "I" which is the part of the self that is spontaneous, creative, innate, and is not concerned with how others view us and the "me" or the social definition of who we are.

When we are born, we are all "I" and act without concern about how others view us. But the socialized self begins when we are able to consider how one important person views us. This initial stage is called "taking the role of the significant other". For example, a child may pull a cat's tail and be told by his mother, "No! Don't do that, that's bad" while receiving a slight slap on the hand. Later, the child may mimic the same behavior toward the self and say aloud, "No, that's bad" while patting his own hand. What has happened? The child is able to see himself through the eyes of the mother. As the child grows and is exposed to many situations and rules of culture, he begins to view the self in the eyes of many others through these cultural norms or rules. This is referred to as "taking the role of the generalized other" and results in a sense of self with many dimensions. The child comes to

have a sense of self as student, as friend, as son, and so on.

## Exaggerated Sense of Self

One of the ways to gain a clearer sense of self is to exaggerate those qualities that are to be incorporated into the self. Preschoolers often like to exaggerate their own qualities or to seek validation as the biggest or smartest or child who can jump the highest. I wonder if messages given in children's books or television shows that everyone is special are really meaningful to children who want to separate themselves from others on such qualities. This exaggeration tends to be replaced by a more realistic sense of self in middle childhood.

# Erikson: Initiative vs. Guilt

The trust and autonomy of previous stages develop into a desire to take initiative or to think of ideas and initiative action. Children may want to build a fort with the cushions from the living room couch or open a lemonade stand in the driveway or make a zoo with their stuffed animals and issue tickets to those who want to come. Or they may just want to get themselves ready for bed without any assistance. To reinforce taking initiative, caregivers should offer praise for the child's efforts and avoid being critical of messes or mistakes. Soggy washrags and toothpaste left in the sink pales in comparison to the smiling face of a five year old that emerges from the bathroom with clean teeth and pajamas!

## Gender Identity, Gender Constancy and Gender Roles

Another important dimension of the self is the sense of self as male or female. Preschool aged children become increasingly interested in finding out the differences between boys and girls both physically and in terms of what activities are acceptable for each. While 2 year olds can identify some differences and learn whether they are boys or girls, preschoolers become more interested in what it means to be male or female. This self-identification or gender identity is followed sometime later with gender constancy or the knowledge that gender does not change. Gender roles or the rights and expectations that are associated with being male or female are learned throughout childhood and into adulthood.

**Freud and the phallic stage:** Freud believed that masculinity and femininity were learned during the phallic stage or psychosexual development. During the phallic stage, the child develops an attraction to the opposite sexed parent but after recognizing that that parent is unavailable, learns to model their own behavior after the same sexed parent. The child develops his or her own sense of masculinity or femininity from this resolution. And, according to Freud, a person who does not exhibit gender appropriate behavior, such as a woman who competes with men for jobs or a man who lacks self-assurance and dominance, has not successfully completed this stage of development. Consequently, such a person continues to struggle with his or her own gender identity.

**Chodorow and mothering:** Chodorow, a neoFreudian, believed that mothering promotes gender stereotypic behavior. Mothers push their sons away too soon and direct their attention toward problem-solving and independence. As a result, sons grow up confident in their own abilities but uncomfortable with intimacy. Girls are kept dependent too long and are given unnecessary and even unwelcome assistance from their mothers. Girls learn to underestimate their abilities and lack assertiveness, but feel comfortable with intimacy.

Both of these models assume that early childhood experiences result in lifelong gender self-concepts. However, gender socialization is a process that continues throughout life. Children, teens, and adults refine and can modify their sense of self based on gender.

**Learning through reinforcement and modeling:** Learning theorists suggest that gender role socialization is a result of the ways in which parents, teachers, friends, schools, religious institutions, media and others send messages about what is acceptable or desirable behavior as males or females. This socialization begins early-in fact, it may even begin the moment a parent learns that a child is on the way. Knowing the sex of the child can conjure up images of the child's behavior, appearance, and potential on the part of a parent. And this stereotyping continues to guide perception through life. Consider parents of newborns, shown a 7 pound, 20 inch baby, wrapped in blue (a color designating males) describe the child as tough, strong, and angry when crying. Shown the same infant in pink (a color used in the United States for baby girls), these parents are likely to describe the baby as pretty, delicate, and frustrated when crying. (Maccoby & Jacklin, 1987). Female infants are held more, talked to more frequently and given direct eye contact, while male infants play is often mediated through a toy or activity.

Sons are given tasks that take them outside the house and that have to be performed only on occasion while girls are more

likely to be given chores inside the home such as cleaning or cooking that is performed daily. Sons are encouraged to think for themselves when they encounter problems and daughters are more likely to be given assistance even when they are working on an answer. This impatience is reflected in teachers waiting less time when asking a female student for an answer than when asking for a reply from a male student (Sadker and Sadker, 1994). Girls are given the message from teachers that they must try harder and endure in order to succeed while boys successes are attributed to their intelligence. Of course, the stereotypes of advisors can also influence which kinds of courses or vocational choices girls and boys are encouraged to make.

Friends discuss what is acceptable for boys and girls and popularity may be based on modeling what is considered ideal behavior or looks for the sexes. Girls tend to tell one another secrets to validate others as best friends while boys compete for position by emphasizing their knowledge, strength or accomplishments. This focus on accomplishments can even give rise to exaggerating accomplishments in boys, but girls are discouraged from showing off and may learn to minimize their accomplishments as a result.

Gender messages abound in our environment. But does this mean that each of us receives and interprets these messages in the same way? Probably not. In addition to being recipients of these cultural expectations, we are individuals who also modify these roles (Kimmel, 2008).

How much does gender matter? In the United States, gender differences are found in school experiences (even into college and professional school, girls are less vocal in the classrooms and much more at risk for sexual harassment from teachers, coaches, classmates, and professors), in social interactions and in media messages. The stereotypes that boys should be strong, forceful, active, dominant, and rational and that girls should be pretty, subordinate, unintelligent, emotional, and gabby are portrayed in children's toys, books, commercials, video games, movies, television shows and music. In adulthood, these differences are reflected in income gaps between men and women where women working full-time earn about 74 percent the income of men, in higher rates of women suffering rape and domestic violence, higher rates of eating disorders for females, and in higher rates of violent death for men in young adulthood. Each of these differences will be explored further in subsequent chapters.

**The impact in India:** Gender differences in India can be a matter of life and death as preferences for male children have been strong historically and are still held, especially in rural areas. (WHO, 2010). Male children are given preference for receiving food, breast milk, medical care and other resources. It is no longer legal to give parents information on the sex of their developing child for fear that they will abort a female fetus. Clearly, gender socialization and discrimination still impact development in a variety of ways across the globe.

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# 4.17: Language Development

**Vocabulary growth:** A child's vocabulary expands between the ages of two to six from about 200 words to over 10,000 words. This "vocabulary spurt" typically involves 10-20 new words per week and is accomplished 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, learn verbs more readily, while those speaking English tend to learn nouns more readily. However, those learning less verb-friendly languages, such as English, seem to need assistance in grammar to master the use of verbs (Imai et al., 2008).

**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, 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 add "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 two and three. They will soon learn new words such as "went" and "did" to be used in those situations.

**The Impact of Training:** Remember Vygotsky and the Zone of Proximal Development? Children can be assisted 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.

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# 4.18: Family Life

## Parenting Styles

Relationships between parents and children continue to play a significant role in children's development during early childhood. We will explore two models of parenting styles. Keep in mind that these most parents do not follow any model completely. Real people tend to fall somewhere in between these styles. And sometimes parenting styles change from one child to the next or in times when the parent has more or less time and energy for parenting. Parenting styles can also be affected by concerns the parent has in other areas of his or her life. For example, parenting styles tend to become more authoritarian when parents are tired and perhaps more authoritative when they are more energetic. Sometimes parents seem to change their parenting approach when others are around, maybe because they become more self-conscious as parents or are concerned with giving others the impression that they are a "tough" parent or an "easy-going" parent. And of course, parenting styles may reflect the type of parenting someone saw modeled while growing up.

Baumrind (1971) offers a model of parenting that includes three styles. The first, **authoritarian**, is the traditional model of parenting in which parents make the rules and children are expected to be obedient. Baumrind suggests that authoritarian parents tend to place maturity demands on their children that are unreasonably high and tend to be aloof and distant. Consequently, children reared in this way may fear rather than respect their parents and, because their parents do not allow discussion, may take out their frustrations on safer targets-perhaps as bullies toward peers.

**Permissive parenting** involves holding expectations of children that are below what could be reasonably expected from them. Children are allowed to make their own rules and determine their own activities. Parents are warm and communicative, but provide little structure for their children. Children fail to learn self-discipline and may feel somewhat insecure because they do not know the limits.

**Authoritative parenting** involves being appropriately strict, reasonable, and affectionate. Parents allow negotiation where appropriate and discipline matches the severity of the offense. A popular parenting program that is offered in many school districts is called "Love and Logic" and reflects the authoritative or democratic style of parenting just described. Uninvolved parents are disengaged from their children. They do not make demands on their children and are non-responsive. These children can suffer in school and in their relationships with their peers (Gecas & Self, 1991).

Lemasters and Defrain (1989) offer another model of parenting. This model is interesting because it looks more closely at the motivations of the parent and suggests that parenting styles are often designed to meet the psychological needs of the parent rather than the developmental needs of the child. The **martyr** is a parent who will do anything for the child; even tasks that the child should do for himself or herself. All of the good deeds performed for the child, in the name of being a "good parent", may be used later should the parent want to gain compliance from the child. If a child goes against the parent's wishes, the parent can remind the child of all of the times the parent helped the child and evoke a feeling of guilt so that the child will do what the parent wants. The child learns to be dependent and manipulative as a result. (Beware! A parent busy whipping up cookies may really be thinking "control"!)

The **pal** is like the permissive parent described in Baumrind's model above. The pal wants to be the child's friend. Perhaps the parent is lonely or perhaps the parent is trying to win a popularity contest against an ex-spouse. Pals let children do what they want and focus most on being entertaining and fun and set few limitations. Consequently, the child may have little self-discipline and may try to test limits with others.

The **police officer/drill sergeant** style of parenting is similar to the authoritarian parent described above. The parent focuses primarily making sure that the child is obedient and that the parent has full control of the child. Sometimes this can be taken to extreme by giving the child tasks that are really designed to check on their level of obedience. For example, the parent may require that the child fold the clothes and place items back in the drawer in a particular way. If not, the child might be scolded or punished for not doing things "right". This type of parent has a very difficult time allowing the child to grow and learn to make decisions independently. And the child may have a lot of resentment toward the parent that is displaced on others.

The **teacher-counselor** parent is one who pays a lot of attention to expert advice on parenting and who believes that as long as all of the steps are followed, the parent can rear a perfect child. "What's wrong with that?" you might ask. There are two major problems with this approach. First, the parent is taking all of the responsibility for the child's behavior-at least indirectly.

If the child has difficulty, the parent feels responsible and thinks that the solution lies in reading more advice and trying more diligently to follow that advice. Parents can certainly influence children, but thinking that the parent is fully responsible for the child's outcome if faulty. A parent can only do so much and can never have full control over the child. Another problem with this approach is that the child may get an unrealistic sense of the world and what can be expected from others. For example, if a teacher-counselor parent decides to help the child build self-esteem and has read that telling the child how special he or she is or how important it is to compliment the child on a job well done, the parent may convey the message that everything the child does is exceptional or extraordinary. A child may come to expect that all of his efforts warrant praise and in the real world, this is not something one can expect. Perhaps children get more of a sense of pride from assessing their own performance than from having others praise their efforts.

So what is left? Lemasters and Defrain (1989) suggest that the **athletic coach style of parenting** is best. Before you draw conclusions here, set aside any negative experiences you may have had with coaches in the past. The principles of coaching are what are important to Lemasters and Defrain. A coach helps players form strategies, supports their efforts, gives feedback on what went right and what went wrong, and stands at the sideline while the players perform. Coaches and referees make sure that the rules of the game are followed and that all players adhere to those rules. Similarly, the athletic coach as parent helps the child understand what needs to happen in certain situations whether in friendships, school, or home life, and encourages and advises the child about how to manage these situations. The parent does not intervene or do things for the child. Rather, the parent's role is to provide guidance while the child learns first hand how to handle these situations. And the rules for behavior are consistent and objective and presented in that way. So, a child who is late for dinner might hear the parent respond in this way, "Dinner was at six o'clock." Rather than, "You know good and well that we always eat at six. If you expect me to get up and make something for you now, you have got another thing coming! Just who do you think you are showing up late and looking for food? You're grounded until further notice!"

The most important thing to remember about parenting is that you can be a better, more objective parent when you are directing your actions toward the child's needs and while considering what they can reasonably be expected to do at their stage of development. Parenting is more difficult when you are tired and have psychological needs that interfere with the relationship. Some of the best advice for parents is to try not to take the child's actions personally and be as objective as possible.

The impact of class and culture cannot be ignored when examining parenting styles. The two models of parenting described above assume that authoritative and athletic coaching styles are best because they are designed to help the parent raise a child who is independent, self-reliant and responsible. These are qualities favored in "individualistic" cultures such as the United States, particularly by the middle class. African-American, Hispanic and Asian parents tend to be more authoritarian than non-Hispanic whites. However, in "collectivistic" cultures such as China or Korea, being obedient and compliant are favored behaviors. Authoritarian parenting has been used historically and reflects cultural need for children to do as they are told. In societies where family members' cooperation is necessary for survival, as in the case of raising crops, rearing children who are independent and who strive to be on their own makes no sense. But in an economy based on being mobile in order to find jobs and where one's earnings are based on education, raising a child to be independent is very important.

Working class parents are more likely than middle class parents to focus on obedience and honesty when raising their children. In a classic study on social class and parenting styles called Class and Conformity, Kohn (1977) explains that parents tend to emphasize qualities that are needed for their own survival when parenting their children. Working class parents are rewarded for being obedient, reliable, and honest in their jobs. They are not paid to be independent or to question the management; rather, they move up and are considered good employees if they show up on time, do their work as they are told, and can be counted on by their employers. Consequently, these parents reward honesty and obedience in their children. Middle class parents who work as professionals are rewarded for taking initiative, being self-directed, and assertive in their jobs. They are required to get the job done without being told exactly what to do. They are asked to be innovative and to work independently. These parents encourage their children to have those qualities as well by rewarding independence and self-reliance. Parenting styles can reflect many elements of culture.

## Child Care Concerns

About 77.3 percent of mothers of school-aged and 64.2 percent of mothers of preschool aged children in the United States work outside the home (Cohen and Bianchi, 1999; Bureau of Labor Statistics, 2010). Since more women have been entering the workplace, there has been a concern that families do not spend as much time with their children. This, however, is not true. Between 1981 and 1997, the amount of time that parents spent with children has increased overall (Sandberg and Hofferth, 2001).

Seventy-five percent of children under age 5 are in scheduled child care programs. Others are cared for by family members, friends, or are in Head Start Programs. Older children are often in after school programs, before school programs, or stay at

home alone after school once they are older. Quality childcare programs can enhance a child's social skills and can provide rich learning experiences. But long hours in poor quality care can have negative consequences for young children in particular. What determines the quality of child care? One consideration is the **teacher/child ratio**. States specify the maximum number of children that can be supervised by one teacher. In general, the younger the children, the more teachers required for a given number of children. The higher the teacher to child ratio, the more time the teacher has for involvement with the children and the less stressed the teacher may be so that the interactions can be more relaxed, stimulating and positive. The more children there are in a program, the less desirable the program as well. This is because the center may be more rigid in rules and structure to accommodate the large number of children in the facility.

The **physical environment** should be colorful, stimulating, clean, and safe. The **philosophy** of the organization and the **curriculum** available should be child-centered, positive, and stimulating. Providers should be trained in early childhood education as well. A majority of states do not require training for their child care providers. And while formal education is not required for a person to provide a warm, loving relationship to a child, knowledge of a child's development is useful for addressing their social, emotional, and cognitive needs in an effective way. By working toward improving the quality of childcare and increasing family-friendly workplace policies such as more flexible scheduling and perhaps childcare facilities at places of employment, we can accommodate families with smaller children and relieve parents of the stress sometimes associated with managing work and family life.

### Global Concerns: The Market Women of Liberia

Work and mothering go hand in hand in many parts of the world. Consider the market women of Liberia. These are women who work as street vendors and are primary providers for their families. They come together in marketplaces along with their children to sell their goods while keeping a watchful eye on their children. Recently, they have been supported by President Sirleaf whose grandmother was a market woman. President Sirleaf has worked to raise funds to improve the marketplaces and conditions for mothers and children. The hope has been to make these marketplaces more safe, to provide childcare, and social services to improve the lives of mothers and children (Nance-Nash, 2009).

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# 4.19: Parenting Styles

Relationships between parents and children continue to play a significant role in children's development during early childhood. As children mature, parent-child relationships naturally change. Preschool and grade-school children are more capable, have their own preferences, and sometimes refuse or seek to compromise with parental expectations. This can lead to greater parent-child conflict, and how conflict is managed by parents further shapes the quality of parent-child relationships.

**Baumrind** (1971) identified a model of parenting that focuses on the level of control/ expectations that parents have regarding their children and how warm/responsive they are. This model resulted in four parenting styles. In general, children develop greater competence and self-confidence when parents have high, but reasonable expectations for children's behavior, communicate well with them, are warm, loving 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*. Parents allow negotiation where appropriate, and consequently this type of parenting is considered more democratic.



Figure 4.22: Authoritative Parenting. Source.

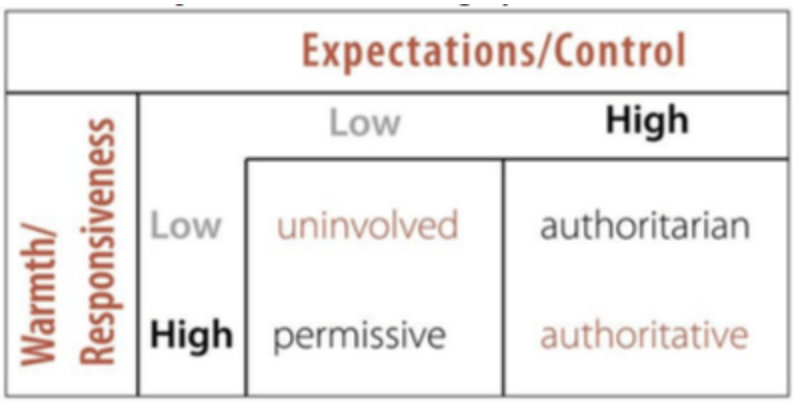
**Authoritarian**, *is the traditional model of parenting in which parents make the rules and children are expected to be obedient*. Baumrind suggests that authoritarian parents tend to place maturity demands on their children that are unreasonably high and tend to be aloof and
distant. Consequently, children reared in this way may fear rather than respect their parents and, because their parents do not allow discussion, may take out their frustrations on safer targets- perhaps as bullies toward peers.

**Permissive** *parenting involves holding expectations of children that are below what could be reasonably expected from them*. Children are allowed to make their own rules and determine their own activities. Parents are warm and communicative, but provide little structure for their children. Children fail to learn self-discipline and may feel somewhat insecure because they do not know the limits.

**Uninvolved** *parents are disengaged from their children. They do not make demands on their children and are non-responsive*. These children can suffer in school and in their relationships with their peers (Gecas & Self, 1991).

Keep in mind that most parents do not follow any model completely. Real people tend to fall somewhere in between these styles. Sometimes parenting styles change from one child to the next or in times when the parent has more or less time and energy for parenting. Parenting styles can also be affected by concerns the parent has in other areas of his or her life. For example, parenting styles tend to become more authoritarian when parents are tired and perhaps more authoritative when they are more energetic. Sometimes parents seem to change their parenting approach when others are around, maybe because they become more self-conscious as parents or are concerned with giving others the impression that they are a "tough" parent or an "easygoing" parent. Additionally, parenting styles may reflect the type of parenting someone saw modeled while growing up. See Table 4.3 for Baumrind's parenting style descriptions.

**Table 4.3: Comparison of Four Parenting Styles**




**Culture:** The impact of culture and class cannot be ignored when examining parenting styles. The model of parenting described above assumes that the authoritative style is the best because this style is designed to help the parent raise a child who is independent, self-reliant and responsible. These are qualities favored in "individualistic" cultures such as the United States, particularly by the middle class. However, in "collectivistic" cultures such as China or Korea, being obedient and compliant are favored behaviors. Authoritarian parenting has been used historically and reflects cultural need for children to do as they are told. African-American, Hispanic and Asian parents tend to be more authoritarian than non-Hispanic whites. In societies where family members' cooperation is necessary for survival, rearing children who are independent and who strive to be on their own makes no sense. But in an economy based on being mobile in order to find jobs and where one's earnings are based on education, raising a child to be independent is very important.

In a classic study on social class and parenting styles Kohn (1977) explains that parents tend to emphasize qualities that are needed for their own survival when parenting their children. Working class parents are rewarded for being obedient, reliable, and honest in their jobs. They are not paid to be independent or to question the management; rather, they move up and are considered good employees if they show up on time, do their work as they are told, and can be counted on by their employers. Consequently, these parents reward honesty and obedience in their children. Middle class parents who work as professionals are rewarded for taking initiative, being self-directed, and assertive in their jobs. They are required to get the job done without being told exactly what to do. They are asked to be innovative and to work independently. These parents encourage their children to have those qualities as well by rewarding independence and self-reliance. Parenting styles can reflect many elements of culture.

## Spanking

Spanking is often thought of as a rite of passage for children, and this method of discipline continues to be endorsed by the majority of parents (Smith, 2012). Just how effective is spanking, however, and are there any negative consequences? After reviewing the research, Smith (2012) states "many studies have shown that physical punishment, including spanking, hitting and other means of causing pain, can lead to increased aggression, antisocial behavior, physical injury and mental health problems for children" (p. 60). Gershoff, (2008) reviewed decades of research and recommended that parents and caregivers make every effort to avoid physical punishment and called for the banning of physical discipline in all U.S. schools.

In a longitudinal study that followed more than 1500 families from 20 U.S. cities, parents' reports of spanking were assessed at ages three and five (MacKenzie, Nicklas, Waldfogel, &

Brooks-Gunn, 2013). Measures of externalizing behavior and receptive vocabulary were assessed at age nine. Results indicated that those children who were spanked at least twice a week by their mothers scored 2.66 points higher on a measure of aggression and rule-breaking than those who were never spanked. Additionally, those who were spanked less, still scored 1.17 points higher than those never spanked. When fathers did the spanking, those spanked at least two times per week scored 5.7 points lower on a vocabulary test than those never spanked. This study revealed the negative cognitive effects of spanking in addition to the increase in aggressive behavior.

Internationally, physical discipline is increasingly being viewed as a violation of children's human rights. Thirty countries have banned the use of physical punishment, and the United Nations Committee on the Rights of the Child (2014) called physical punishment "legalized violence against children" and advocated that physical punishment be eliminated in all settings.

Many alternatives to spanking are advocated by child development specialists and include:

- Praising and modeling appropriate behavior
- Providing time-outs for inappropriate behavior
- Giving choices
- Helping the child identify emotions and learning to calm down
- Ignoring small annoyances
- Withdrawing privileges

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# 4.20: Preschool

Providing universal preschool has become an important lobbying point for federal, state, and local leaders throughout our country. In his 2013 State of the Union address, President Obama called upon congress to provide high quality preschool for all children. He continued to support universal preschool in his legislative agenda, and in December 2014 the President convened state and local policymakers for the White House Summit on Early Education (White House Press Secretary, 2014). However, universal preschool covering all four-year olds in the country would require significant funding. Further, how effective preschools are in preparing children for elementary school, and what constitutes high quality preschool have been debated. To set criteria for designation as a high quality preschool, the National Association for the Education of Young Children (NAEYC) identifies 10 standards (NAEYC, 2016). These include:

- Positive relationships among all children and adults are promoted.
- A curriculum that supports learning and development in social, emotional, physical, language, and cognitive areas.
- Teaching approaches that are developmentally, culturally and linguistically appropriate.
- Assessment of children's progress to provide information on learning and development.
- The health and nutrition of children are promoted, while they are protected from illness and injury.
- Teachers possess the educational qualifications, knowledge, and commitment to promote children's learning.
- Collaborative relationships with families are established and maintained.
- Relationships with agencies and institutions in the children's communities are established to support the program's goals.
- The indoor and outdoor physical environments are safe and well-maintained.
- Leadership and management personnel are well qualified, effective, and maintain licensure status with the applicable state agency.

Parents should review preschool programs using the NAEYC criteria as a guide and template for asking questions that will assist them in choosing the best program for their child. Selecting the right preschool is also difficult because there are so many types of preschools available. Zachry (2013) identified Montessori, Waldorf, Reggio Emilia, High Scope, Parent Co-Ops and Bank Street as types of preschool programs that focus on children learning through discovery. Teachers act as guides and create activities based on the child's developmental level.

**Head Start:** For children who live in poverty, Head Start has been providing preschool education since 1965 when it was begun by President Lyndon Johnson as part of his war on poverty. It currently serves nearly one million children and annually costs approximately 7.5 billion dollars (United States Department of Health and Human Services, 2015). However, concerns about the effectiveness of Head Start have been ongoing since the program began. Armor (2015) reviewed existing research on Head Start and found there were no lasting gains, and the average child in Head Start had not learned more than children who did not receive preschool education.



Figure 4.18 Four Year Old Head Start Students. Source.

A recent report dated July 2015 evaluating the effectiveness of Head Start comes from the What Works Clearinghouse. The What Works Clearinghouse identifies research that provides reliable evidence of the effectiveness of programs and practices in education, and is managed by the Institute of Education Services for the United States Department of Education. After reviewing 90 studies on the effectiveness of Head Start, only one study was deemed scientifically acceptable and this study showed disappointing results (Barshay, 2015). This study showed that 3 and 4 year-old children in Head Start received "potentially positive effects" on general reading achievement, but no noticeable effects on math achievement and social-emotional development.

Nonexperimental designs are a significant problem in determining the effectiveness of Head Start programs because a control group is needed to show group differences that would demonstrate educational benefits. Because of ethical reasons, low income children are usually provided with some type of pre-school programming in an alternative setting. Additionally, Head Start programs are different depending on the location, and these differences include the length of the day or qualification of the teachers. Lastly, testing young children is difficult and strongly dependent on their language skills and comfort level with an evaluator (Barshay, 2015).

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# 4.21: Childhood Stress and Development



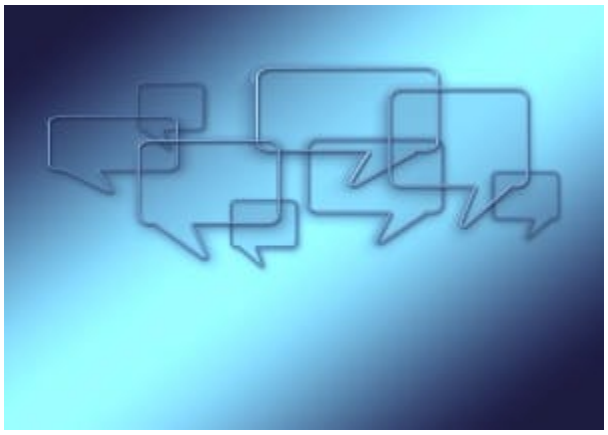
What is the impact of stress on child development? Children experience different types of stressors. Normal, everyday stress can provide an opportunity for young children to build coping skills and poses little risk to development. Even more long-lasting stressful events such as changing schools or losing a loved one can be managed fairly well. But children who experience toxic stress or who live in extremely stressful situations of abuse over long periods of time can suffer long-lasting effects. The structures in the midbrain or limbic system such as the hippocampus and amygdala can be vulnerable to prolonged stress during early childhood (Middlebrooks and Audage, 2008). High levels of the stress hormone cortisol can reduce the size of the hippocampus and effect the child's memory abilities. Stress hormones can also reduce immunity to disease. The brain exposed to long periods of severe stress can develop a low threshold making the child hypersensitive to stress in the future. However, the effects of stress can be minimized if the child has the support of caring adults.

In the next lesson, we continue to look at childhood as we examine the period between starting school and entering adolescence known as middle childhood.

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# 4.22: Labeling and Children



As you read the chapters on childhood, you may notice that the process of diagnosing and labeling children is changing. For example, you can look at the campaign to get rid of the 'R word' (retardation) by going to www.r-word.org. Read about the controversy over using diagnostic labels that either rigidly categorize and/or stigmatize children. Both labels of autism and fetal alcohol syndrome have now been replaced with "autism spectrum disorders" and "fetal alcohol spectrum disorders", respectively. Why have these changes occurred? What impact does labeling a child with a diagnosis have on that child? What are the advantages and disadvantages? Please post twice and respond twice for full credit.

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# 4.23: Autism Spectrum Disorder

A greater discussion on disorders affecting children and special educational services to assist them will occur in chapter 5. However, because characteristics of Autism Spectrum Disorder must be present in the early developmental period, as established by the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (American Psychiatric Association (APA), 2013), this disorder will be presented here. So what exactly is an Autism Spectrum Disorder?

Autism spectrum disorder is probably the most misunderstood and puzzling of the neurodevelopmental disorders. Children with this disorder show signs of significant disturbances in three main areas: (a) deficits in social interaction, (b) deficits in communication, and (c) repetitive patterns of behavior or interests. These disturbances appear early in life and cause serious impairments in functioning (APA, 2013). The child with autism spectrum disorder might exhibit deficits in social interaction by not initiating conversations with other children or turning their head away when spoken to. These children do not make eye contact with others and seem to prefer playing alone rather than with others. In a certain sense, it is almost as though these individuals live in a personal and isolated social world others are simply not privy to or able to penetrate. Communication deficits can range from a complete lack of speech, to one word responses (e.g., saying “Yes” or “No” when replying to questions or statements that require additional elaboration), to echoed speech (e.g., parroting what another person says, either immediately or several hours or even days later), to difficulty maintaining a conversation because of an inability to reciprocate others’ comments. These deficits can also include problems in using and understanding nonverbal cues (e.g., facial expressions, gestures, and postures) that facilitate normal communication.

Repetitive patterns of behavior or interests can be exhibited a number of ways. The child might engage in stereotyped, repetitive movements (rocking, head-banging, or repeatedly dropping an object and then picking it up), or she might show great distress at small changes in routine or the environment. For example, the child might throw a temper tantrum if an object is not in its proper place or if a regularly-scheduled activity is rescheduled. In some cases, the person with autism spectrum disorder might show highly restricted and fixated interests that appear to be abnormal in their intensity. For instance, the child might learn and memorize every detail about something even though doing so serves no apparent purpose. Importantly, autism spectrum disorder is not the same thing as intellectual disability, although these two conditions can occur together. The DSM-5 specifies that the symptoms of autism spectrum disorder are not caused or explained by intellectual disability.



Figure 4.19 Dr. Temple Grandin, an advocate for individuals with autism. Source.

The qualifier “spectrum” in autism spectrum disorder is used to indicate that individuals with the disorder can show a range, or spectrum, of symptoms that vary in their magnitude and severity: Some severe, others less severe. The previous edition of the DSM included a diagnosis of Asperger’s disorder, generally recognized as a less severe form of autistic disorder; individuals diagnosed with Asperger’s disorder were described as having average or high intelligence and a strong vocabulary, but exhibiting impairments in social interaction and social communication, such as talking only about their special interests (Wing, Gould, & Gillberg, 2011). However, because research has failed to demonstrate that Asperger’s disorder differs qualitatively from autistic disorder, the DSM-5 does not include it. Some individuals with autism spectrum disorder, particularly those with better language and intellectual skills, can live and work independently as adults. However, most do not because the symptoms remain sufficient to cause serious impairment in many realms of life (APA, 2013).

Currently, estimates indicate that nearly 1 in 88 children in the United States has autism spectrum disorder; the disorder is 5 times more common in boys (1 out of 54) than girls (1 out of 252) (CDC, 2012). Rates of autistic spectrum disorder have increased dramatically since the 1980s. For example, California saw an increase of 273% in reported cases from 1987 through

1998 (Byrd, 2002); between 2000 and 2008, the rate of autism diagnoses in the United States increased 78% (CDC, 2012). Although it is difficult to interpret this increase, it is possible that the rise in prevalence is the result of the broadening of the diagnosis, increased efforts to identify cases in the community, and greater awareness and acceptance of the diagnosis. In addition, mental health professionals are now more knowledgeable about autism spectrum disorder and are better equipped to make the diagnosis, even in subtle cases (Novella, 2008).

The exact causes of autism spectrum disorder remain unknown despite massive research efforts over the last two decades (Meek, Lemery-Chalfant, Jahromi, & Valiente, 2013). Autism appears to be strongly influenced by genetics, as identical twins show concordance rates of 60%– 90%, whereas concordance rates for fraternal twins and siblings are 5%–10% (Autism Genome Project Consortium, 2007). Many different genes and gene mutations have been implicated in autism (Meek et al., 2013). Among the genes involved are those important in the formation of synaptic circuits that facilitate communication between different areas of the brain (Gauthier et al., 2011). A number of environmental factors are also thought to be associated with increased risk for autism spectrum disorder, at least in part, because they contribute to new mutations. These factors include exposure to pollutants, such as plant emissions and mercury, urban versus rural residence, and vitamin D deficiency (Kinney, Barch, Chayka, Napoleon, & Munir, 2009).

There is no scientific evidence that a link exists between autism and vaccinations (Hughes, 2007). Indeed, a recent study compared the vaccination histories of 256 children with autism spectrum disorder with that of 752 control children across three time periods during their first two years of life (birth to 3 months, birth to 7 months, and birth to 2 years) (DeStefano, Price, & Weintraub, 2013). At the time of the study, the children were between 6 and 13 years old, and their prior vaccination records were obtained. Because vaccines contain immunogens (substances that fight infections), the investigators examined medical records to see how many immunogens children received to determine if those children who received more immunogens were at greater risk for developing autism spectrum disorder. The results of this study clearly demonstrated that the quantity of immunogens from vaccines received during the first two years of life were not at all related to the development of autism spectrum disorder.

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# 4.24: Childhood



Choose two of the following:

1. Explain the merits of breastfeeding. What are the pros and cons?
2. Examine nutritional content in popular foods consumed by children in early childhood. Choose two popular food products targeted toward this age group to analyze.
3. Illustrate animism, egocentrism, and centration using children's games or media. Find one example of each and explain how it reflects these concepts.
4. Prepare recommendations to avoid health risks in school-aged children. Consider what you have learned about nutrition and physical activity. Incorporate the problems you know about with respect to this age group when preparing your recommendations.

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# 4.25: Early Childhood Lecture

YouTube Video

*This interactive element is not available in this format. Visit the link or scan the QR code to access it online.*

View this YouTube Video online

## Lecture Transcript

Early childhood is sometimes referred to as the preschool years. This is a period of the life span after infancy and before the child begins formal schooling. This is typically from ages 3 to 5 or 2 to 6 years.

First, let's examine physical growth.

There is considerable difference in the body proportions of a child entering and exiting this stage. Toddlers have large heads and stomachs and short arms and legs. But 6 year old children tend to have longer, leaner bodies as their torso lengthens.

The rate of physical growth in early childhood is slower than what was found in infancy. Overall physical growth is at the rate of about 3 inches in height per year. And about 4.5 pounds of weight is gained each year. The average 6 year old in the United States is about 46 inches tall and weighs about 46 pounds. This slower growth rate translates into a smaller appetite for children between ages 2 and 6 years.

This diminished appetite means these children are vulnerable to nutritional deficiencies. This is particularly true if those small appetites are satisfied with foods poor in nutrition. Preschoolers can suffer iron deficiencies particularly if they drink too much cow's milk which interferes with the body's ability to absorb iron. Children in the United States consume too many high fat, high sugar junk foods. And while the effects of such poor nutrition might not be immediately evident, the preference for eating such intensely sugary and fatty foods is being established and can interfere with nutrition for years to come.

How can you avoid setting up eating problems in this age group? The following tips are directed toward establishing reasonable expectations about food and avoiding associating food with psychological needs.

- First, don't try to force feed your child or fight with them over food.
- Recognize that appetites vary and adjust accordingly.
- Keep mealtime pleasant and as a time for family members to unite and enjoy one another's company.
- Don't become a short order chef. Choose a reasonable menu that all can share.
- Limit choices, particularly when allowing young children to make selections. Too many options can be confusing.
- Serve balanced meals. Take the time to think about nutrition and prepare meals that are healthy.
- Don't bribe the child with food. Offering certain foods as rewards can set up a hierarchy of good and bad foods which can get in the way of eating healthy meals.

Now let's turn our attention to the brain. During early childhood, the brain continues to grow and mature. At age 2, the brain is 75% its adult weight. By age 6, it's at 95 percent its adult weight. And by 7, the brain is about 100% its adult weight. Changes in the child's ability to override emotional outbursts and to coordinate movement are seen as the cortex continues to mature. Visual pathways continue to be established and the child becomes able to reproduce what is seen on paper when drawing. The left hemisphere of the brain undergoes a growth spurt between ages 3 and 6 facilitating language skills. The right hemisphere grows throughout childhood improving spatial skills, and the recognition of shapes and patterns. Corpus callosum also grows between 3-6 years.

Gross motor skill development occupies much of the life of a young child. Running, jumping, swinging, and learning to ride a bicycle are all examples of gross motor skills. Many childhood songs combine music and words with large physical movements.

Can you think of any examples? How about “Head and Shoulders, Knees and Toes”? Remember that one?

Young children are also practicing their fine motor skills by learning to pour, using scissors, and coloring. Early childhood classrooms include a number of activities for improving fine motor skills. Many songs and children’s activities incorporate fine motor skills. Have you ever heard the song, “The Itsy Bitsy Spider”? You’ll find a video of it being performed in your lesson. Enjoy!

Sexual development begins even before birth. Erections and vaginal lubrication are present before birth. In infancy, babies stimulate their genitals when they have sufficient motor skills. Their curiosity about the genitals continues in early childhood. Hopefully, this curiosity is met with a reasonable response rather than one that evokes shame or fear.

Let’s continue our look at cognitive development.

Recall Piaget’s second stage of cognitive development: **preoperational intelligence**. Early childhood is a time of learning to use thought to solve problems and learning to know and communicate about the world through the use of symbols, primarily language. Now the child can think about what happened several days ago or image an event. Watch closely and you may see a child surprised by being able to hear a song in their head. “Wow! I can hear a song and it’s playing in my head!” Being able to think about the world in this new way doesn’t mean that the child is logical about how the world works. Preoperational thought is ‘prelogical’ or before logical. Instead, there may be a tendency to believe that everyone sees the world through the child’s eyes. I’ll give you an example. One child came up to me at around Halloween (October) and said “I know why god put skin on people.” “Oh, really? Why?” I responded. The child proudly reported, “So they wouldn’t be scary to little kids!”

Here are some other aspects of preoperational thought. Children love to play out roles at this age. This type of play, called sociodramatic play, allows them to take on a role fully and think about how to speak and act as well as what kinds of props are needed to become the part.

**Syncretism** refers to thinking that if two events occur simultaneously, one must have caused the other. A child whose mother brought a baby with her when she last left the hospital may think that a new visit to the same building will produce another child!

**Egocentrism** is one of Piaget’s early concepts that refer to how these children assume that everyone thinks the way that they do.

Try reading to a child and they may ask, “Where am I in the story?” They believe that they are at the center of activity. Or you may head a child ask whether a character in a movie or cartoon loves them? That’s an odd question, unless you’re a 3 year old.

**Animism** is the thought that objects have lifelike qualities. Be sure to watch the video clip in your lesson. It’s an attempt to help young children distinguish between living and non-living objects.

Piaget challenged children’s ability to understand how to classify objects. For example, in this image showing numerous red buttons and a single green button, you have objects that can be classified in several ways. If you ask a 3 year old, “What are there more of? Red things, green things, or buttons?” The child will probably respond, “Red things” not recognizing that all are buttons.

Piaget’s experiments on **conservation** of matter indicated that children have numerous misconceptions about matter. For example, if a container of water is poured into two differently shaped containers so that the water levels now vary, the child may think that the higher water level indicates more liquid. Or a child may think that if one line moves further to the right, it is more or if one row of pennies is widely spaced apart, it has more.

The **theory of mind** is the understanding that other people have different thoughts than one’s own. This realization replaces egocentrism and occurs between ages 3 and 5, typically; or around age 4. This knowledge of other’s mental states can aid in social relationships. It serves as our everyday mindreading. It can be absent or difficult for children with autism spectrum disorders. Such children may not be able to appreciate other’s mental states, depending on the level of severity of the disorder.

Vocabulary grows at the rate of 10 to 20 new words per day and the child has a vocabulary of approximately 10,000 words by age 6. However, children do not have a complete understanding of words. For example, a child may not understand that the expression, “time flies” simply means that time passes quickly. Children tend to learn nouns more easily than verbs, even in more verb-friendly languages such as Chinese. Rules of grammar may be misapplied. An example of such over-regularization is found in statements such as “I goed there.” Or, “I doed that!” in which adding ed to the end of the word is used to indicate past tense incorrectly.

Remember Vygotsky’s zone of proximal development? This is the potential a child may achieve through guided participation. Language, both verbal and non-verbal is the vehicle of this guidance. Do you ever talk to yourself? When and why? Chances are you talk to yourself as an adult only when you want to express an emotion or clarify your thoughts. This inner speech is not the

same as the speech you use when communicating with others; it's short and to the point. But when you were learning to use language, you may have struggled as you began to use words to communicate ideas to others. You probably spoke aloud. Then words became directed toward your own behavior. You may have talked to yourself with a sort of running commentary about your own activities and feelings as you learned to think using words. Gradually, this egocentric speech (spoken when alone) became private speech, or thinking in language. Inner speech is only spoken aloud if thoughts need to be clarified or emotion expressed.

Now we turn our attention toward psychosocial development in early childhood. We'll explore self-concept, gender identity, and family life.

A **self-concept** is one's own perception or image of self. We aren't born with a self-concept. It develops through interaction with others. Usually these others are those close to us like parents, siblings, or peers. Let's look at two theories of self-based on interaction.

Charles Horton Cooley used the metaphor of a mirror or looking-glass when describing this process. Our self-concept develops when we look at how those around us respond to us, how we look, what we say, and what we do. We then use their reactions to make self-judgments. If those around us respond favorably to us, we'll form a positive sense of self. But if those around us respond with criticism and insult, we interpret that as evidence that we are not good or acceptable. But those around us may respond to us based on more than our own performance or worth. Perhaps they don't notice what we do well or are reluctant to comment on it. As a result, we may have an inaccurate self-concept. And there may be certain periods in life in which we are more self-conscious or concerned with how others view us. Early childhood may be one of those times as children are piecing together a sense of self.

George Herbert Mead also focused on social interaction as important for developing a sense of self. He divided the self into two parts: the "I" or the spontaneous part of the self that is creative and internally motivated, and the "me" or the part of the self that takes into account what other people think. The key to living well is to find ways to give expression to the "I" with the approval of the "me". In other words, find out how to be creative and do what you care about within the guidelines of society. The I is inborn. But the me develops through social interaction and a process called "taking the role of the other." A child first comes to take the role of a significant other person, typically a parent or sibling. A child, who has been told not to do something, may be found saying "no" to himself. Gradually, the child will come to understand how the generalized other, or society at large, comes to view actions. Now a behavior is not just wrong according to a significant other person, it is wrong as a rule of society. In this way, cultural expectations become part of the judgment of self.

Early self-concepts can be quite exaggerated. A child may want to be the biggest, or be able to jump the highest, or to have the longest hair. This exaggerated sense of self is external; the child emphasizes outward expressions and responses in developing a sense of self. Older children tend to become more realistic in their sense of self as they start comparing their own behavior with that of others.

Erikson views early childhood as a time of building on autonomy and taking initiative. The child wants to think of an activity and carry it out without interference of others.

Early childhood is also a time of developing gender identification or a sense of self based on gender. You may recall Freud's theory of the phallic stage in which the child develops a sense of masculinity or femininity. Nancy Chordorow believed that mothers promote gender specific behavior in the way they interact with sons and daughters. Daughters are kept close and dependent while sons are encouraged to be independent and assertive. Cognitive theory suggests that children actively seek their gender roles through a gender schema in which they sort their world into male and female categories. They ask whether activities, objects, colors, and mannerisms are for boys or girls. Learning theorists focus on the ways in which children are reinforced for gender stereotypic behavior and how modeling and media images promote gender stereotypic behaviors. The focus is on how society imposes gender expectations on children.

How is gender taught? The training is said to begin in infancy as parents treat their sons and daughters differently. In some cultures it means cuddling and speaking to daughters, while directing sons toward outside activities. Sons are given more freedom and less supervision than daughters. And daughters may be given unnecessary assistance thus undermining their confidence. Teachers call on boys more often in the classroom and schools may direct students into certain fields of study based on gender rather than abilitFriends have a different code of behavior for girls than for boys. Girls focus on closeness in friendship whereas boys may focus more on competition.

Is gender taught or do children seek out how to behave based on their sex? Gender expectations are taught and messages are presented in the media, in the schools, among friends, and by family members. But children also vary in the extent to which they follow the roles presented. There is an interactive role between the individual and society's expectations with respect to gender. This is called "doing gender." It means that we approach these expectations and respond to them in a variety of ways, depending

on individual motives and attributes.

Think of your parents. How would you describe their style of parenting? Are they consistent? Were they alike in their approach to discipline and support? Here are two models of parenting styles. You may be able to identify your own parents to some extent in these descriptions. Of course, these models represent clear categories. Real parents often fall somewhere in between.

Diane Baumrind's model classifies parents in several ways based on the amount and direction of communication they have with their children, their level of warmth, and the level of maturity expected from the child. The **authoritarian** model is a traditional model in which the parents are in control. Children are expected to be obedient and respectful. These parents have low warmth and high maturity demands for their children. The **permissive** model is one in which parents allow children to make the rules. These parents show a good deal of warmth, but have trouble setting limits. The authoritative model is parenting that is strict within reason and that is accompanied by affection. Children have some say in making rules and the exchanges are warm. This is also known as **democratic** parenting and is the model favored by Baumrind. The parenting program called "Love and Logic" is a good example of this model. Uninvolved parents are unresponsive and non-demanding. As a consequence, their children may difficulty in social relationships, school, and other areas.

LeMaster's and DeFrain's model focuses on what parents are trying to accomplish when parenting. It offers a glimpse at the psychological motivation of the parent suggesting that a parent's psychological needs rather than the child's developmental needs are frequently being addressed when parenting. The **martyr** is the type of parent who will do anything for their child; even those things that children should and could do on their own. This is to help the parent feel in control through self-sacrifice with the expectation that the child will be indebted to them. The pal is lonely and wants a friend. The **pal** lets the child do what they want in hopes that the child will spend time with the parent and satisfy their need for companionship. The **police officer/drill sergeant** wants direct control and gives the child many obedience tests. Obedience tests are often meaningless activities with the sole purpose of showing the child who is in control. The **teacher-counselor** parent is one who probably pays too much attention to what the "experts" have to say about parenting. The teacher-counselor takes all responsibility for the child's behavior and thinks that if they just do the right things, they can have a perfect child. The **athletic coach** is the preferred model. It involves being objective and consistent in parenting and allowing the child to learn by doing.

Which model is best? It turns out that showing concern, warmth, and support is the most important ingredient. The way this care and concern is demonstrated depends on culture.

As of 2009, 64.2 percent of mothers with children under age 6 and 77.3 percent of mothers with children between the ages of 6 and 17 worked outside the home in the United States. Since the dramatic increase of women in the labor force, we've seen many studies done to evaluate the impact of childcare on child development. Most of this attention has been devoted to looking at formal preschools and day care programs and the teacher-child ratios, type of environments, and activities available. The conclusion has been that day care that is stimulating and provides adequate attention to children is beneficial and sometimes superior to the world of children staying at home. In some parts of the world, child care concerns are more about safety and healthcare. Market Women in Liberia are women who sell small items as street or market vendors. These women are providers for their families and also take care of their children. Day care is not available to them so their children accompany them to the markets. These markets are crowded and often near waste dumps. Recently, there has been a nationwide effort to improve the conditions for children in the market places and to offer social services such as nutrition and health care for the children. You can learn more in your reading. Certainly, childcare concerns are varied throughout the world.

Some amount of stress is normal in the lives of children. Normal stress includes everyday frustrations and disappointments and minor illness. These stressors can in fact be good life lessons for children and do not cause harm. But toxic stress is long-term and undermines a child's sense of safety and support. This might come from living in an abusive household or one filled with neglect. Or it might be due to the lack of safety and fear that results from living in a crime-ridden community or with war. Prolonged stress leads to the production of stress hormones such as cortisol. Normally, these hormones help the body prepare to take action and get out of harm's way. But prolonged exposure reduces our immunity to disease and leads to problems with digestion, blood pressure, and muscle tensions. In early childhood, our brains are building wiring systems in response to our environments. A child who undergoes chronic, intense stress can develop a low threshold to stress within the brain circuitry. Such a child may be nervous or hyper-vigilant. Having a caring, supportive parent or other caregiver can reduce the impact of toxic stress.

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# 4.26: Early Childhood PPT

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# 5: MIDDLE CHILDHOOD

Middle childhood is the period of life that begins when children enter school and lasts until they reach adolescence. Think for a moment about children this age that you may know. What are their lives like? What kinds of concerns do they express and with what kinds of activities are their days filled? If it were possible, would you want to return to this period of life? Why or why not? Early childhood and adolescence seem to get much more attention than middle childhood. Perhaps this is because growth patterns slow at this time, the id becomes hidden during the latent stage, according to Freud, and children spend much more time in schools, with friends, and in structured activities. It may be easy for parents to lose track of their children's development unless they stay directly involved in these worlds. I think it is important to stop and give full attention to middle childhood to stay in touch with these children and to take notice of the varied influences on their lives in a larger world.


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# 5.1: Introduction to Middle Childhood

**Learning Objectives**

- Describe physical growth during middle childhood.
- Prepare recommendations to avoid health risks in school-aged children.
- Describe recognized examples of concrete operational intelligence.
- Define conservation, reversibility, and identity in concrete operational intelligence.
- Explain information processing theory of memory.
- Characterize language development in middle childhood.
- Compare preconventional, conventional, and postconventional moral development.
- Define learning disability and describe dyslexia and attention deficit hyperactivity disorder.
- Evaluate the impact of labeling on children's self-concept and social relationships.
- Explain the rationale for identifying childhood conditions as spectrum disorders.
- Explain the controversy over the use of standardized testing in schools.
- Compare Gardner's theory of multiple intelligences and Sternberg's triarchic theory of intelligence.
- Compare aptitude and achievement tests.
- Apply the ecological systems model to explore children's experiences in schools.
- Examine social relationships in middle childhood.
- Characterized the incidence and impact of sexual abuse in middle childhood.
- Analyze the impact of family structure on children's development.
- Describe the developmental stages of stepfamilies.

## Introduction

Middle childhood is the period of life that begins when children enter school and lasts until they reach adolescence. Think for a moment about children this age that you may know. What are their lives like? What kinds of concerns do they express and with what kinds of activities are their days filled? If it were possible, would you want to return to this period of life? Why or why not? Early childhood and adolescence seem to get much more attention than middle childhood. Perhaps this is because growth patterns slow at this time, the id becomes hidden during the latent stage, according to Freud, and children spend much more time in schools, with friends, and in structured activities. It may be easy for parents to lose track of their children's development unless they stay directly involved in these worlds. I think it is important to stop and give full attention to middle childhood to stay in touch with these children and to take notice of the varied influences on their lives in a larger world.

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# 5.2: Physical Development

## 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 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 (listen to NPR's "Youth Soccer Coaches Encouraged to Ease Regimen" story from 5/24/06). 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.

## New Concerns

### 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, and 2% milk and is in compliance with Federal Nutritional Guidelines of 100% 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 make additional revenues. 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 and 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.

Of course, children eat away from school as well. Listen to NPR’s Kids Have Easy Access to Junk Food to hear a story about how advertising and fast food restaurant locations may influence children’s diets.

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# 5.3: Sports

Middle childhood seems to be a great time to introduce children to organized sports, and in fact, many parents do. Nearly 3 million children play soccer in the United States (United States Youth Soccer, 2012). This activity promises to help children build social skills, improve athletically and learn a sense of competition. However, it has been suggested that the emphasis on competition and athletic 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.



Figure 5.1. Source.

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

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

Yet, a study on children's sports in the United States (Sabo & Veliz, 2008) has found that gender, poverty, location, ethnicity, and disability can limit opportunities to engage in sports. Girls were more likely to have never participated in any type of sport (see Figure 5.2).

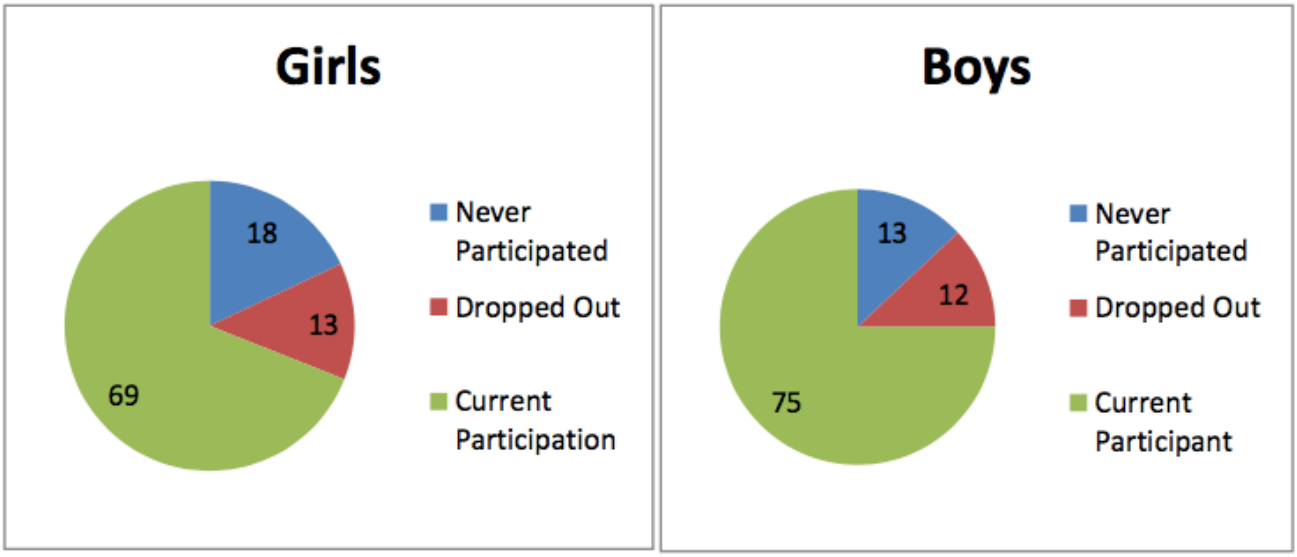



Figure 5.2: Participation in Organized and Team Sports (Percent) by Gender.

*Total girls (n=1051). Total boys (n=1081). T-test comparing gender and students who have never partcipated in sports. t=-3.038**, p=.002, df=2130*

They also found that fathers may not be providing their daughters as much support as they do their sons. While boys rated their fathers as their biggest mentor who taught them the most about sports, girls rated coaches and physical education teachers as their key mentors. Sabo and Veliz also found that children in suburban neighborhoods had a much higher participation of sports than boys and girls living in rural or urban centers. In addition, Caucasian girls and boys participated in organized sports at higher rates than minority children (see Figure 5.3).

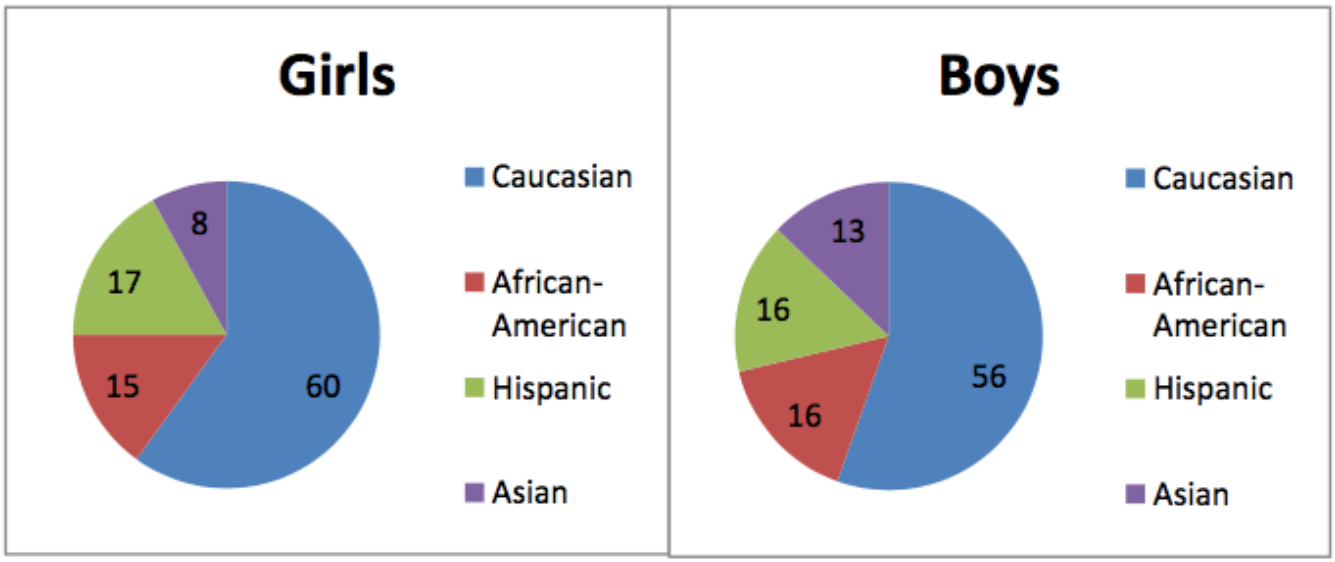



Figure 5.3: Percent of students participating in Organized Sports, by Gender, Race and Ethnicity

*Girls – Caucasian (n=425); African-American (n=106); Hispanic (n=124); Asian (n=55)*

*Boys – Caucasian (n=435); African-American (n=127); Hispanic (n=123); Asian (n=99)*

Finally, Sabo and Veliz asked children who had dropped out of organized sports why they left. For both girls and boys, the number one answer was that it was no longer any fun (see Table 5.1). According to the Sport Policy and Research Collaborative (SPARC) (2013), almost 1 in 3 children drop out of organized sports, and while there are many factors involved in the decisions to drop out, one suggestion has been the lack of training that coaches of children's sports receive may be contributing to this attrition (Barnett, Smoll & Smith, 1992). Several studies have found that when coaches receive proper training the drop-out rate is about 5% instead of the usual 30% (Fraser-Thomas, Côté, & Deakin, 2005; SPARC, 2013).

*Table 5.1 Top Reasons Dropped Out or Stopped Playing Organized/Team Sports*

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

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

**Welcome to the world of e-sports:** The recent SPARC (2016) report on the "State of Play" in the United States highlights a

disturbing trend. One in four children between the ages of 5 and 16 rate playing computer games with their friends as a form of exercise. In addition, **e-sports**, which as SPARC writes is about as much a sport as poker, *involves children watching other children play video games*. Over half of males, and about 20% of females, aged 12-19, say they are fans of e-sports.

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

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

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# 5.4: Childhood Obesity

The decreased participation in school physical education and youth sports is just one of many factors that has led to an increase in children being overweight or obese. The current measurement for determining excess weight is the **Body Mass Index (BMI)** *which expresses the relationship of height to weight*. According to the Centers for Disease Control and Prevention (CDC), *children's whose BMI is at or above the 85th percentile for their age* are considered **overweight**, while *children who are at or above the 95th percentile* are considered **obese** (Lu, 2016). In 2011-2012 approximately 8.4% of 2-5 year-olds were considered overweight or obese, and 17.7% of 6-11 year-olds were overweight or obese (CDC, 2014b).

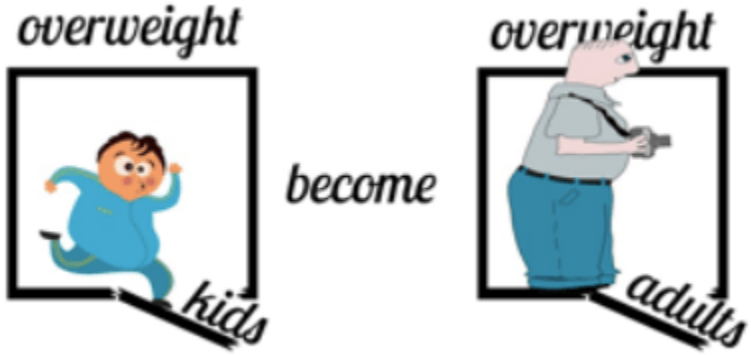



Figure 5.4: Being overweight can be a lifelong struggle. Source.

Excess weight and obesity in children is associated with a variety of medical and cognitive conditions including high blood pressure, insulin resistance, inflammation, depression, and lower academic achievement (Lu, 2016). Being overweight has also been linked to impaired brain functioning, which includes deficits in executive functioning, working memory, mental flexibility, and decision-making (Liang, Matheson, Kaye, & Boutelle, 2014). Children who ate more saturated fats performed worse on relational memory tasks, while eating a diet high in omega-3 fatty acids promoted relational memory skills (Davidson, 2014). Using animal studies Davidson et al. (2013) found that large amounts of processed sugars and saturated fat weakened the blood-brain barrier, especially in the hippocampus. This can make the brain more vulnerable to harmful substances that can impair its functioning. Another important executive functioning skill is controlling impulses and delaying gratification. Children who are overweight show less inhibitory control than normal weight children, which may make it more difficult for them to avoid unhealthy foods (Lu, 2016). Overall, being overweight as a child increases the risk for cognitive decline as one ages.

A growing concern is the *lack of recognition from parents that children are overweight or obese*. Katz (2015) referred to this as "**Oblivobesity**". Black et al. (2015) found that parents in the United Kingdom (UK) only recognized their children as obese when they were above the 99.7$^{th}$ percentile while the official cut-off for obesity is at the 85th percentile. Oude Luttikhuis, Stolk, and Sauer (2010) surveyed 439 parents and found that 75% of parents of overweight children said the child had a normal weight and 50% of parents of obese children said the child had a normal weight. For these parents, overweight was considered normal and obesity was considered normal or a little heavy. Doolen, Alpert, and Miller (2009) reported on several studies from the United Kingdom, Australia, Italy, and the United States, and in all locations parents were more likely to misperceive their children's weight. Black, Park, and Gregson (2015) concluded that as the average weight of children rises, what parents consider normal also rises. Needless to say, if parents cannot identify if their children are overweight they will not be able to intervene and assist their children with proper weight management.

An added concern is that the children themselves are not accurately identifying if they are overweight. In a United States sample of 8-15 year-olds, more than 80% of overweight boys and 70% of overweight girls misperceived their weight as normal (Sarafrazi, Hughes, & Borrud, 2014). Also noted was that as the socioeconomic status of the children rose, the frequency of these misconceptions decreased. It appeared that families with more resources were more conscious of what defines a healthy weight.

Children who are overweight tend to be rejected, ridiculed, teased and bullied by others (Stopbullying.gov, 2016). 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 they have an increased risk of heart disease and stroke in adulthood (Lu, 2016). It is 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.



Figure 5.5. Source.

Behavioral interventions, including training children to overcome impulsive behavior, are being researched to help overweight children (Lu, 2016). Practicing inhibition has been shown to strengthen the ability to resist unhealthy foods. Parents can help their overweight children the best when they are warm and supportive without using shame or guilt. Parents can also act like the child's frontal lobe until it is developed by helping them make correct food choices and praising their efforts (Liang, et al., 2014). Research also shows that exercise, especially aerobic exercise, can help improve cognitive functioning in overweight children (Lu, 2016). Parents should take caution against emphasizing diet alone to avoid the development of any obsession about dieting that can lead to eating disorders. Instead, increasing a child's activity level is most helpful.

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# 5.5: Cognitive Development

Recall from our last lesson on early childhood are in the **preoperational** stage, according to Piaget, and during this stage children are learning to think symbolically about the world.

## Concrete Operational Thought



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. (We will see that this way of thinking tends to change during adolescence being replaced with deductive reasoning.)

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.

**Classification:** As children's experiences and vocabularies grow, they build schema and are able to classify objects in many different ways. Look at the word below and write a list of the ways in which it could be classified:

BALL

(Compare your list with the one at the end of the lesson.)

**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. (If you have access to children's school papers, look for examples of these.)

**Reciprocity:** Remember the example in our last lesson 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. Operational or logical thought about the abstract world comes later.

## 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:

1) **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.

2) **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.

3) **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.

During middle childhood, 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.

They 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.)

# Language Development

## 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 association 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 plays on words such as "knock-knock" jokes or jokes with punch lines. Preschoolers do not understand plays 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).

**How many ways can you classify "ball"? It's a word, a round object, a toy, a shape, a rolling object, a piece of playground equipment, another word for "fun", etc.**

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# 5.6: Information Processing

Children differ in their memory abilities, and these differences predict both their readiness for school and academic performance in school (PreBler, Krajewski, & Hasselhorn, 2013). During middle and late childhood children make strides in several areas of cognitive function including the capacity of working memory, their ability to pay attention, and their use of memory strategies. Both changes in the brain and experience foster these abilities.

**Working Memory**: The capacity of working memory expands during middle and late childhood, and research has suggested that both an increase in processing speed and the ability to inhibit irrelevant information from entering memory are contributing to the greater efficiency of working memory during this age (de Ribaupierre, 2002). Changes in myelination and synaptic pruning in the cortex are likely behind the increase in processing speed and ability to filter out irrelevant stimuli (Kail, McBride-Chang, Ferrer, Cho, & Shu, 2013).

Children with learning disabilities in math and reading often have difficulties with working memory (Alloway, 2009). They may struggle with following the directions of an assignment. When a task calls for multiple steps, children with poor working memory may miss steps because they may lose track of where they are in the task. Adults working with such children may need to communicate: Using more familiar vocabulary, using shorter sentences, repeating task instructions more frequently, and breaking more complex tasks into smaller more manageable steps. Some studies have also shown that more intensive training of working memory strategies, such as chunking, aid in improving the capacity of working memory in children with poor working memory (Alloway, Bibile, & Lau, 2013).

**Attention:** As noted above the ability to inhibit irrelevant information improves during this age group, with there being a sharp improvement in selective attention from age six into adolescence (Vakil, Blachstein, Sheinman, & Greenstein, 2009). Children also improve in their ability to shift their attention between tasks or different features of a task (Carlson, Zelazo, & Faja, 2013). A younger child who is asked to sort objects into piles based on type of object, car versus animal, or color of object, red versus blue, may have difficulty if you switch from asking them to sort based on type to now having them sort based on color. This requires them to suppress the prior sorting rule. An older child has less difficulty making the switch, meaning there is greater flexibility in their attentional skills. These changes in attention and working memory contribute to children having more strategic approaches to challenging tasks.

**Memory Strategies:** Bjorklund (2005) describes a developmental progression in the acquisition and use of memory strategies. Such strategies are often lacking in younger children, but increase in frequency as children progress through elementary school. Examples of memory strategies include rehearsing information you wish to recall, visualizing and organizing information, creating rhymes, such “i” before “e” except after “c”, or inventing acronyms, such as “roygbiv” to remember the colors of the rainbow. Schneider, Kron-Sperl, and Hünnerkopf (2009) reported a steady increase in the use of memory strategies from ages six to ten in their longitudinal study (see Table 5.2).

| Age | Percentage |
|---|---|
| 6 | 55 |
| 7 | 44 |
| 8 | 25 |
| 9 | 17 |
| 10 | 13 |

Moreover, by age ten many children were using two or more memory strategies to help them recall information. Schneider and colleagues found that there were considerable individual differences at each age in the use of strategies, and that children who utilized more strategies had better memory performance than their same aged peers.

Children may experience three deficiencies in their use of memory strategies. A **mediation deficiency** *occurs when a child does not grasp the strategy being taught, and thus, does not benefit from its use*. If you do not understand why using an acronym might be helpful, or how to create an acronym, the strategy is not likely to help you. In a **production deficiency** *the child does not spontaneously use a memory strategy, and has to be prompted to do so.* In this case, the child knows the strategy and is more than capable of using it, but they fail to “produce” the strategy on their own. For example, a child might know how to make a list,

but may fail to do this to help them remember what to bring on a family vacation. A **utilization deficiency** *refers to a child using an appropriate strategy, but it fails to aid their performance*. Utilization deficiency is common in the early stages of learning a new memory strategy (Schneider & Pressley, 1997; Miller, 2000). Until the use of the strategy becomes automatic it may slow down the learning process, as space is taken up in memory by the strategy itself. Initially, children may get frustrated because their memory performance may seem worse when they try to use the new strategy. Once children become more adept at using the strategy, their memory performance will improve. Sodian and Schneider (1999) found that new memory strategies acquired prior to age eight often show utilization deficiencies with there being a gradual improvement in the child's use of the strategy. In contrast, strategies acquired after this age often followed an "all-or-nothing" principle in which improvement was not gradual, but abrupt.

**Knowledge Base:** During middle and late childhood, 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. In other words, their **knowledge base**, *knowledge in particular areas that makes learning new information easier*, expands (Berger, 2014).

**Metacognition:** Children in middle and late childhood also have a better understanding of how well they are performing a task, and the level of difficulty of a task. As they become more realistic about their abilities, they can adapt studying strategies to meet those needs. Young children spend as much time on an unimportant aspect of a problem as they do on the main point, while older children start to learn to prioritize and gauge what is significant and what is not. As a result, they develop metacognition. **Metacognition** *refers to the knowledge we have about our own thinking and our ability to use this awareness to regulate our own cognitive processes* (Bruning, Schraw, Norby, & Ronning, 2004).

**Critical Thinking:** According to Bruning et al. (2004) there is a debate in U.S. education as to whether schools should teach students what to think or how to think. **Critical thinking***, or a detailed examination of beliefs, courses of action, and evidence,* involves teaching children how to think. The purpose of critical thinking is to evaluate information in ways that help us make informed decisions. Critical thinking involves better understanding a problem through gathering, evaluating, and selecting information, and also by considering many possible solutions. Ennis (1987) identified several skills useful in critical thinking. These include: Analyzing arguments, clarifying information, judging the credibility of a source, making value judgements, and deciding on an action. Metacognition is essential to critical thinking because it allows us to reflect on the information as we make decisions.

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# 5.7: Theories of Intelligence

Psychologists have long debated how to best conceptualize and measure intelligence (Sternberg, 2003). These questions include how many types of intelligence there are, the role of nature versus nurture in intelligence, how intelligence is represented in the brain, and the meaning of group differences in intelligence.

**General (g) Versus Specific (s) Intelligences:** From 1904- 1905 the French psychologist Alfred Binet (1857–1914) and his colleague Théodore Simon (1872–1961) began working on behalf of the French government to develop a measure that would identify children who would not be successful with the regular school curriculum. The goal was to help teachers better educate these students (Aiken, 1994). Binet and Simon developed what most psychologists today regard as the first intelligence test, which consisted of a wide variety of questions that included the ability to name objects, define words, draw pictures, complete sentences, compare items, and construct sentences.



Figure 5.8: Alfred Binet. Source.

Binet and Simon (Binet, Simon, & Town, 1915; Siegler, 1992) believed that the questions they asked the children all assessed the basic abilities to understand, reason, and make judgments. It turned out that the correlations among these different types of measures were in fact all positive; that is, students who got one item correct were more likely to also get other items correct, even though the questions themselves were very different.

On the basis of these results, the psychologist Charles Spearman (1863–1945) hypothesized that there must be a single underlying construct that all of these items measure. He called *the construct that the different abilities and skills measured on intelligence tests have in common* the **General Intelligence Factor (g).** Virtually all psychologists now believe that there is a generalized intelligence factor, “g”, that relates to abstract thinking and that includes the abilities to acquire knowledge, to reason abstractly, to adapt to novel situations, and to benefit from instruction and experience (Gottfredson, 1997; Sternberg, 2003). People with higher general intelligence learn faster.



*Figure 5.9 Have you taken an intelligence test? © Thinkstock*

Soon after Binet and Simon introduced their test, the American psychologist Lewis Terman at Stanford University (1877–1956) developed an American version of Binet's test that became known as the *Stanford-Binet Intelligence Test*. The Stanford-Binet is a measure of general intelligence made up of a wide variety of tasks including vocabulary, memory for pictures, naming of familiar objects, repeating sentences, and following commands.

Although there is general agreement among psychologists that "g" exists, there is also evidence for **Specific Intelligence** "s", *a measure of specific skills in narrow domains*. One empirical result in support of the idea of "s" comes from intelligence tests themselves.Althoughthedifferenttypesof questions do correlate with each other, some items correlate more highly with each other than do other items; they form clusters or clumps of intelligences.

**Triarchic Theory:** One advocate of the idea of multiple intelligences is the psychologist Robert Sternberg. Sternberg has proposed a **Triarchic (three-part) Theory of Intelligence** that proposes that *people may display more or less analytical intelligence, creative intelligence, and practical intelligence*. Sternberg (1985, 2003) argued that traditional intelligence tests assess **Analytical Intelligence**, *academic problem solving and performing calculations,* but that they do not typically assess **Creative Intelligence**, *the ability to adapt to new situations and create new ideas*, and/or **Practical Intelligence**, *the ability to demonstrate common sense and street- smarts.*



Figure 5.10: How many uses for a paper clip can you think of? © Thinkstock

As Sternberg proposed, research has found that creativity is not highly correlated with analytical intelligence (Furnham & Bachtiar, 2008) and exceptionally creative scientists, artists, mathematicians, and engineers do not score higher on intelligence than do their less creative peers (Simonton, 2000). Furthermore, the brain areas that are associated with **Convergent Thinking**, *thinking that is directed toward finding the correct answer to a given problem*, are different from those associated with **Divergent Thinking**, *the ability to generate many different ideas or solutions to a single problem* (Tarasova, Volf, & Razoumnikova, 2010). On the other hand, being creative often takes some of the basic abilities measured by "g", including the abilities to learn from experience, to remember information, and to think abstractly

(Bink & Marsh, 2000). Ericsson (1998), Weisberg (2006), Hennessey and Amabile (2010) and Simonton (1992) studied creative people and identified at least five components that are likely to be important for creativity as listed in Table 5.3

*Table 5.3 Important Components for Creativity*

| Component | Description |
|---|---|
| Expertise | Creative people have studied and leraned about a topic |

| Component | Description |
|---|---|
| Imaginative Thinking | Creative people view problems in new and different ways |
| Risk Taking | Creative people take on new, but potentially risky, approaches |
| Intrinsic Interest | Creative people take on projects for interest, not money |
| Working in Creative Environments | The most creative people are supported, aided, and challenged by other people working on similar projects |

The last aspect of the triarchic model, practical intelligence, refers primarily to intelligence that cannot be gained from books or formal learning. Practical intelligence represents a type of "street smarts" or "common sense" that is learned from life experiences. Although a number of tests have been devised to measure practical intelligence (Sternberg, Wagner, & Okagaki, 1993; Wagner & Sternberg, 1985), research has not found much evidence that practical intelligence is distinct from "g" or that it is predictive of success at any particular tasks (Gottfredson, 2003). Practical intelligence may include, at least in part, certain abilities that help people perform well at specific jobs, and these abilities may not always be highly correlated with general intelligence (Sternbergetal.,1993).

**Theory of Multiple Intelligences:** Another champion of the idea of specific types of intelligences rather than one overall intelligence is the psychologist Howard Gardner (1983, 1999). Gardner argued that it would be evolutionarily functional for different people to have different talents and skills, and proposed that there are eight intelligences that can be differentiated from each other. A potential ninth intelligence; that is, existential still needs empirical support. Gardner investigated intelligences by focusing on children who were talented in one or more areas and adults who suffered from strokes that compromised some capacities, but not others. Gardner also noted that some evidence for multiple intelligences comes from the abilities of **autistic savants**, *people who score low on intelligence tests overall but who nevertheless may have exceptional skills in a given domain*, such as math, music, art, or in being able to recite statistics in a given sport (Treffert & Wallace, 2004). In addition to brain damage and the existence of savants, Gardner identified these 8 intelligences based on other criteria including a set developmental history and psychometric findings. See Table 5.4 for a list of Gardner's eight specific intelligences.

*Table 5.4 Howard Gardner's Eight Specific Intelligences*

| Intelligence | Description |
|---|---|
| Linguistic | The ability to speak and write well |
| Logical-mathematical | The ability to use logic and mathematical skills to solve problems |
| Spatial | The ability to think and reason about objects in three dimensions |
| Musical | The ability to perform and enjoy music |
| Kinesthetic (body) | The ability to move the body in sports, dance, or other physical activities |
| Interpersonal | The ability to understand and interact effectively with others |
| Intrapersonal | The ability to have insight into the self |
| Naturalistic | The ability to recognize, identify, and understand animals, plants, and other living things |

*Source: Adapted from Gardner, H. (1999).* Intelligence reframed: Multiple intelligences for the 21st century. *New York, NY: Basic Books.*



Figure 5.11: Although intelligence is often conceptualized in a general way (as the “g” factor), there is a variety of specific skills that can be useful for particular tasks. © Thinkstock

The idea of multiple intelligences has been influential in the field of education, and teachers have used these ideas to try to teach differently to different students. For instance, to teach math problems to students who have particularly good kinesthetic intelligence, a teacher might encourage the students to move their bodies or hands according to the numbers. On the other hand, some have argued that these “intelligences” sometimes seem more like “abilities” or “talents” rather than real intelligence. There is no clear conclusion about how many intelligences there are. Are sense of humor, artistic skills, dramatic skills, and so forth also separate intelligences? Furthermore, and again demonstrating the underlying power of a single intelligence, the many different intelligences are in fact correlated and thus represent, in part, “g” (Brody, 2003).

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# 5.8: 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.

## 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 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 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.

## 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).

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# 5.9: Children with Learning Disabilities

A **Learning Disability** (or LD) *is a specific impairment of academic learning that interferes with a specific aspect of schoolwork and that reduces a student's academic performance significantly*. A LD shows itself as a major discrepancy between a student's ability and some feature of achievement: The student may be delayed in reading, writing, listening, speaking, or doing mathematics, but not in all of these at once. A learning problem is not considered a learning disability if it stems from physical, sensory, or motor handicaps, or from generalized intellectual impairment. It is also not an LD if the learning problem really reflects the challenges of learning English as a second language. Genuine LDs are the learning problems left over after these other possibilities are accounted for or excluded. Typically, a student with an LD has not been helped by teachers' ordinary efforts to assist the student when he or she falls behind academically, though what counts as an “ordinary effort”, of course, differs among teachers, schools, and students. Most importantly, though, an LD relates to a fairly specific area of academic learning. A student may be able to read and compute well enough, for example, but not be able to write. LDs are by far the most common form of special educational need, accounting for half of all students with special needs in the United States and anywhere from 5 to 20 per cent of all students, depending on how the numbers are estimated (United States Department of Education, 2005; Ysseldyke & Bielinski, 2002). Students with LDs are so common, in fact, that most teachers regularly encounter at least one per class in any given school year, regardless of the grade level they teach.

These difficulties are identified in school because this is when children's academic abilities are being tested, compared, and measured. Consequently, once academic testing is no longer essential in that person's life (as when they are working rather than going to school) these disabilities may no longer be noticed or relevant, depending on the person's job and the extent of the disability.

**Dyslexia** is one of the most commonly diagnosed disabilities and *involves having difficulty in the area of reading*. This diagnosis is used for a number of reading difficulties. Common characteristics are difficulty with phonological processing, which includes the manipulation of sounds, spelling, and rapid visual/verbal processing. Additionally, the child may reverse letters, have difficulty reading from left to right, or may have problems associating letters with sounds. It appears to be rooted in neurological problems involving the parts of the brain active in recognizing letters, verbally responding, or being able to manipulate sounds. Recent studies have identified a number of genes that are linked to developing dyslexia (National Institute of Neurological Disorders and Stroke, 2016). Treatment typically involves altering teaching methods to accommodate the person's particular problematic area.

**Dysgraphia** or *a writing disability*, is often associated with dyslexia (Carlson, 2013). There are different types of dysgraphia, including phonological dysgraphia when the person cannot sound out words and write them phonetically. Orthographic dysgraphia is demonstrated by those individuals who can spell regularly spelled words, but not irregularly spelled ones. Some individuals with dysgraphia experience difficulties in motor control and experience trouble forming letters when using a pen or pencil.



Figure 5.18. Source.

**Dyscalculia** *refers to problems in math*. Cowan and Powell (2014) identified several terms used when describing difficulties in mathematics including dyscalculia, mathematical learning disability, and mathematics disorder. All three terms refer to students with average intelligence who exhibit poor academic performance in mathematics. When evaluating a group of third graders, Cowan and Powell (2014) found that children with dyscalculia demonstrated problems with working memory, reasoning, processing speed and oral language, all of which are referred to as domain-general factors. Additionally, problems with multi-digit skills, including number system knowledge, were also exhibited.

A child with **Attention Deficit Hyperactivity Disorder** (ADHD) *shows a constant pattern of inattention and/or hyperactive and impulsive behavior that interferes with normal functioning* (American Psychological Association (APA), 2013). Some of the signs of inattention include great difficulty with, and avoidance of, tasks that require sustained attention(suchasconversationsorreading),failure to follow instructions (often resulting in failure to complete school work and other duties), disorganization (difficulty keeping things in order, poor time management, sloppy and messy work), lack of attention to detail, becoming easily distracted, and forgetfulness. Hyperactivity is characterized by excessive movement, and includes fidgeting or squirming, leaving one's seat in situations when remaining seated is expected, having trouble sitting still (e.g., in a restaurant), running about and climbing on things, blurting out responses before another person's question or statement has been completed, difficulty waiting one's turn for something, and interrupting and intruding on others. Frequently, the hyperactive child comes across as noisy and boisterous. The child's behavior is hasty, impulsive, and seems to occur withoutmuch forethought; these characteristics may explain why adolescents and young adults diagnosed with ADHD receive more traffic tickets and have more automobile accidents than do others their age (Thompson, Molina, Pelham, & Gnagy, 2007).



Figure 5.19. Source.

ADHD occurs in about 5% of children (APA, 2013). On the average, boys are 3 times more likely to have ADHD than are girls; however, such findings might reflect the greater propensity of boys to engage in aggressive and antisocial behavior and thus incur a greater likelihood of being referred to psychological clinics (Barkley, 2006). Children with ADHD face severe academic and social challenges. Compared to their non-ADHD counterparts, children with ADHD have lower grades and standardized test scores and higher rates of expulsion, grade retention, and dropping out (Loe & Feldman, 2007). They also are less well- liked and more often rejected by their peers (Hoza et al., 2005).

ADHD can persist into adolescence and adulthood (Barkley, Fischer, Smallish, & Fletcher, 2002). A recent study found that 29.3% of adults who had been diagnosed with ADHD decades earlier still showed symptoms (Barbaresi et al., 2013). Somewhat troubling, this study also reported that nearly 81% of those whose ADHD persisted into adulthood had experienced at least one other comorbid disorder, compared to 47% of those whose ADHD did not persist. Additional concerns when an adult has ADHD include: Worse educational attainment, lower socioeconomic status, less likely to be employed, more likely to be divorced, and more likely to have non-alcohol-related substance abuse problems (Klein et al., 2012).

**Causes of ADHD:** Family and twin studies indicate that genetics play a significant role in the development of ADHD. Burt (2009), in a review of 26 studies, reported that the median rate of concordance for identical twins was .66, whereas the median concordance rate for fraternaltwinswas.20.The specific genes involved in ADHD are thought to include at least two that are important in the regulation of the neurotransmitter dopamine (Gizer, Ficks, & Waldman, 2009), suggesting that dopamine may be important in ADHD. Indeed, medications used in the treatment of ADHD, such as methylphenidate (Ritalin) and amphetamine with dextroamphetamine (Adderall), have stimulant qualities and elevate dopamine activity. People with ADHD show less dopamine activity in key regions of the brain, especially those associated with motivation and reward (Volkow et al., 2009), which provides support to the theory that dopamine deficits may be a vital factor in the development this disorder (Swansonetal.,2007).

Brain imaging studies have shown that children with ADHD exhibit abnormalities in their frontal lobes, an area in which dopamine is in abundance. Compared to children without ADHD, those with ADHD appear to have smaller frontal lobe volume, and they show less frontal lobe activation when performing mental tasks. Recall that one of the functions of the frontal lobes is to inhibit our behavior. Thus, abnormalities in this region may go a long way toward explaining the hyperactive, uncontrolled behavior of ADHD.

Many parents attribute their child's hyperactivity to sugar. A statistical review of 16 studies, however, concluded that sugar consumption has no effect at all on the behavioral and cognitive performance of children (Wolraich, Wilson, & White, 1995). Additionally, although food additives have been shown to increase hyperactivity in non-ADHD children, the effect is rather

small (McCann et al., 2007). Numerous studies, however, have shown a significant relationship between exposure to nicotine in cigarette smoke during the prenatal period and ADHD (Linnet et al., 2003). Maternal smoking during pregnancy is associated with the development of more severe symptoms of the disorder (Thakur et al., 2013).

**Treatment for ADHD:** Recommended treatment for ADHD includes behavioral interventions, cognitive behavioral therapy, parent and teacher education, recreational programs, and lifestyle changes, such as getting more sleep (Clay, 2013). For some children medication is prescribed. Parents are often concerned that stimulant medication may result in their child acquiring a substance use disorder. However, research using longitudinal studies has demonstrated that children diagnosed with ADHD who received pharmacological treatment had a lower risk for substance abuse problems than those children who did not receive medication (Wilens, Fararone, Biederman,&Gunawardene,2003). Theriskofsubstanceabuseproblemsappearstobeeven greater for those with ADHD who are un-medicated and also exhibit antisocial tendencies (Marshal & Molina, 2006).

**Is the prevalence rate of ADHD increasing?** Many people believe that the rates of ADHD have increased in recent years, and there is evidence to support this contention. In a recent study, investigators found that the parent-reported prevalence of ADHD among children (4–17 years old) in the United States increased by 22% during a 4-year period, from 7.8% in 2003 to 9.5% in 2007 (CDC, 2010). ADHD may be over-diagnosed by doctors who are too quick to medicate children as a behavior treatment. There is also greater awareness of ADHD now than in the past. Nearly everyone has heard of ADHD, and most parents and teachers are aware of its key symptoms. Thus, parents may be quick to take their children to a doctor if they believe their child possesses these symptoms, or teachers may be more likely now than in the past to notice the symptoms and refer the child for evaluation. Further, the use of computers, video games, iPhones, and other electronic devices has become pervasive among children in the early 21st century, and these devices could potentially shorten children's attentions spans. Thus, what might seem like inattention to some parents and teachers could simply reflect exposure to too much technology.

## Children with Disabilities: Legislation

Since the 1970s political and social attitudes have moved increasingly toward including people with disabilities into a wide variety of "regular" activities. In the United States, the shift is illustrated clearly in the Federal legislation that was enacted during this time. Three major laws were passed that guaranteed the rights of persons with disabilities, and of children and students with disabilities in particular. The third law has had the biggest impact on education.

**Rehabilitation Act of 1973, Section 504:** This law, the first of its kind, required that individuals with disabilities be accommodated in any program or activity that receives Federal funding (PL 93-112, 1973). Although this law was not intended specifically for education, in practice it has protected students' rights in some extra-curricular activities (for older students) and in some child care or after-school care programs (for younger students). If those programs receive Federal funding of any kind, the programs are not allowed to exclude children or youths with disabilities, and they have to find reasonable ways to accommodate the individuals' disabilities.

**Americans with Disabilities Act of 1990 (or ADA):** This legislation also prohibited discrimination on the basis of disability, just as Section 504 of the Rehabilitation Act had done (PL 101-336, 1990). Although the ADA also applies to all people (not just to students), its provisions are more specific and "stronger" than those of Section 504. In particular, ADA extends to all employment and jobs, not just those receiving Federal funding. It also specifically requires accommodations to be made in public facilities such as with buses, restrooms, and telephones. ADA legislation is therefore responsible for some of the "minor" renovations in schools that you may have noticed in recent years, like wheelchair-accessible doors, ramps, and restrooms, and public telephones with volume controls.

**Individuals with Disabilities Education Act (or IDEA):** As its name implied this legislation was more focused on education than either Section 504 or ADA. It was first passed in 1975 and has been amended several times since, including most recently in 2004 (PL 108-446, 2004). In its current form, the law guarantees the following rights related to education for anyone with a disability from birth to age 21. The first two influence schooling in general, but the last three affect the work of classroom teachers rather directly:

- *Free, appropriate education*: An individual or an individual's family should not have to pay for education simply because the individual has a disability, and the educational program should be truly educational; i.e., not merely care-taking or babysitting the person.
- *Due process*: In case of disagreements between an individual with a disability and the schools or other professionals, there must be procedures for resolving the disagreements that are fair and accessible to all parties, including the person himself or herself or the person's representative.
- *Fair evaluation of performance in spite of disability*: Tests or other evaluations should not assume test taking skills

that a person with a disability cannot reasonably be expected to have, such as holding a pencil, hearing or seeing questions, working quickly, or understanding and speaking orally. Evaluation procedures should be modified to allow or these differences. This provision of the law applies both to evaluations made by teachers and to school-wide or "high-stakes" testing programs.
- *Education in the "least restrictive environment":* Education for someone with a disability should provide as many educational opportunities and options for the person as possible, both in the short term and in the long term. In practice this requirement has meant including students in regular classrooms and school activities as much as possible, though often not totally.
- *An individualized educational program*: Given that every disability is unique, instructional planning for a person with a disability should be unique or individualized as well. In practice this provision has led to classroom teachers planning individualized programs jointly with other professionals (like reading specialists, psychologists, or medical personnel) as part of a team.

Evaluation and diagnosis can be the first step in helping provide children with disabilities the type of instruction and resources that will benefit them educationally, 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 because of these expectations experience trouble. This **self-fulfilling prophecy** *or tendency to act in such a way as to make what you predict will happen, will come true*. This 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.

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# 5.10: Learning and Intelligence - Schools and Testing



## The 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 mandating 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 designed to measure a person's ability to learn.

## Theories of Intelligence

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.

Exercise:

What do you think? As an adult, what kind of intellectual skills do you consider to be most important for your success? Consequently, how would you define intelligence?

## 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.

## Triarchic Theory of Intelligence

Another alternative view of intelligence is presented by Sternberg (1997; 1999). Sternberg offers three types of intelligences. Sternberg provided background information about his view of intelligence in a conference I attended several years ago. 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 may still not have what is required to be a successful graduate student or a competent professional. To do well as a graduate student, he noted, 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.

Let's apply these theories of intelligence to the world of children. To what extent are these types of intelligences cultivated at

home and in the schools?

## The World of School

Remember the ecological systems model that we explored in Lesson 2? This model helps us understand an individual by examining the contexts in which the person lives and the direct and indirect influences on that person's life. School becomes a very important component of children's lives during middle childhood and one way to understand children is to look at the world of school. We have discussed educational policies that impact the curriculum in schools above. Now let's focus on the school experience from the standpoint of the student, the teacher and parent relationship, and the cultural messages or hidden curriculum taught in 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 Masons:** This 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.

**The Irvings:** This middle class, African-American couple was concerned that the school was discriminating against black students. They fought against it without using direct confrontation by staying actively involved in their daughter's schooling and making frequent visits to the school so make sure that discrimination could not occur. They also talked with other African-American teachers and parents about their concerns.

**Ms. Caldron:** This poor, single-parent was concerned about discrimination in the school. She was a recovering drug addict receiving welfare. She did not discuss her concerns with other parents because she did not know the other parents and did not monitor her child's progress or get involved with the school. She felt that her concerns would not receive attention. She requested spelling lists from the teacher on several occasions but did not receive them. The teacher complained that Ms. Caldron did not sign forms that were sent home for her signature.

Working within the system without direct confrontation seemed to yield better results for the Irvings, although the issue of discrimination in the school was not completely addressed. Ms. Caldron was the least involved and felt powerless in the school setting. Her lack of family capital and lack of knowledge and confidence keep her from addressing her concerns with the teachers. What do you think would happen if she directly addressed the teachers and complained about discrimination? Chances are, she would be dismissed as undermining the authority of the school, just as the Masons, and might be thought to lack credibility because of her poverty and drug addiction. The authors of this study suggest that teachers closely examine their biases against parents. Schools may also need to examine their ability to dialogue with parents about school policies in more open ways. What happens when parents have concerns over school policy or view student problems as arising from flaws in the educational system? How are parents who are critical of the school treated? And are their children treated fairly even when the school is being criticized? Certainly, any efforts to improve effective parental involvement should address these concerns.

## Student Perspectives

Imagine being a 3rd-grader for one day in public school. What would the daily routine involve? To what extent would the institution dictate the activities of the day and how much of the day would you spend on those activities? Would always be 'on task'? What would you say if someone asked you how your day went? Or "What happened in school today?" Chances are, you would be more inclined to talk about whom you sat at lunch with or who brought a puppy to class than to describe how fractions are added.

Ethnographer and Professor of Education Peter McLaren (1999) describes the student's typical day as filled with constrictive and unnecessary ritual that has a damaging effect on the desire to learn. Students move between various states as they negotiate the demands of the school system and their own personal interests. The majority of the day (298 minutes) takes place in the **student state**. This state is one in which the student focuses on a task or tries to stay focused on a task, is passive, compliant, and often frustrated. Long pauses before getting out the next book or finding materials sometimes indicate that frustration. The **street corner state** is one in which the child is playful, energetic, excited, and expresses personal opinions, feelings, and beliefs. About 66 minutes a day take place in this state. Children try to maximize this by going slowly to assemblies or when getting a hall pass-always eager to say 'hello' to a friend or to wave if one of their classmates is in another room. This is the state in which friends talk and play. In fact, teachers sometimes reward students with opportunities to move freely or to talk or to be themselves. But when students initiate the street corner state on their own, they risk losing recess time, getting extra homework, or being ridiculed in front of their peers. The **home state** occurs when parents or siblings visit the school. Children in this state may enjoy special privileges such as going home early or being exempt from certain school rules in the mother's presence. Or it can be difficult if the parent is there to discuss trouble at school with a staff member. The sanctity state is a time in which the child is contemplative, quiet, or prayerful 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 my provide some answers.

## 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)

What do you think? Let's examine a kindergarten class schedule taken from a website found by going to Google and typing in "kindergarten schedule". You can find more of these on your own. Most look similar to this one:

7:55 to 8:20 Math tubs (manipulatives) and small group math lessons
8:20 to 8:35 Class meeting/restroom and drinks
8:35 to 8:55 Math board/calendar
8:55 to 9:10 Whole class math lesson
9:10 to 9:20 Daily news chart
9:20 to 9:50 Shared reading (big books/poem and song charts)

9:50 to 10:15 Language Arts Centers
10:15 to 10:30 Morning recess
10:30 to 10:50 Alphabet/phonics lesson and paper
10:50 to 11:10 Reading Workshop (more centers)
11:10 to 11:20 Picture and word chart
11:20 to 11:40 Writing workshop (journals)
11:40 to 12:20 Lunch and recess
12:20 to 12:50 Rainbow Reading Lab (sequenced file folder activities) or computer lab or internet computers. Children are divided into two groups and do one of these activities each day, title 1 teacher is in my room at this time.
12:50 to 1:20 Theme related activity or art class one day per week
1:20 to 1:35 Afternoon recess (or still in art one day per week)
1:35 to 2:10 Nap/rest time
2:10 to 2:50 Special classes (music, counseling, pe, or library)
2:50 to 3:05 Show and Tell and get ready to go home

(Source: Classroom_Schedules).

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.

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# 5.11: Psychosocial Development

Now let's turn our attention to concerns related to self-concept, the world of friendships, and family life.

## Self-Concept



Children in middle childhood have a more realistic sense of self than do those in early childhood. That exaggerated sense of self as "biggest" or "smartest" or "tallest" gives way to an understanding of one's strengths and weaknesses. This can be attributed to greater experience in comparing one's own performance with that of others and to greater cognitive flexibility. A child's self-concept can be influenced by peers and family and the messages they send about a child's worth. Contemporary children also receive messages from the media about how they should look and act. Movies, music videos, the internet, and advertisers can all create cultural images of what is desirable or undesirable and this too can influence a child's self-concept.

## The Tweens

Advertisers have created a new consumer group known as the "tweens". This group spends an estimated $51 billion dollars annually and has another $170 billion a year spent on them (Irvine, 2006). Tweens range in age from 8 to 12 years and are characterized as sophisticated, early-maturing teenagers concerned primarily with their appearance, weight, and sexuality ("The 'Tween Market'" Media Awareness Network, 2007). Tweens are primarily targeted as consumers of media, clothing, and products that make them look "cool" and feel independent. For example, attitude t-shirts have been very popular among female tweens for the past several years and the slogans on these shirts reflect what might be considered "cool". Here are a few found in a national retail clothing store that focuses on fashion for tweens.

- Your boyfriend gave me this shirt.
- I live to shop
- It's all about me
- You wish

In general, toys are not marketed to this age group as they once were. However, some toys designed to appeal to slightly younger children tend to sexualize children (Harmanci, 2006). For an example of such sexy children's dolls, go to www.bratz.com. Jean Kilbourne, a noted expert on the impact of advertising on self-image, responds to the promotion of such products as examples of how "marketers are hijacking our children's sexuality" at the expense of childhood (Squire, 2006).

## Sexual Abuse in Middle Childhood

Being sexually abused as a child can have a powerful impact on self-concept. Childhood sexual abuse is defined as any sexual contact between a child and an adult or a much older child. Incest refers to sexual contact between a child and family members. In each of these cases, the child is exploited by an older person without regard for the child's developmental immaturity and inability to understand the sexual behavior (Steele, 1986). The concept of **false self-training** (Davis, 1999) refers to holding a child to adult standards while denying the child's developmental needs. Sexual abuse is just one example of false self-training. Children are held to adult standards of desirableness and sexuality while their level of cognitive, psychological, and emotional immaturity is ignored. Consider how confusing it might be for a 9 year old girl who has physically matured early to be thought of as a potential sex partner. Her cognitive, psychological, and emotional state do not equip her to make decisions about sexuality or, perhaps, to know that she can say no to sexual advances. She may feel like a 9 year old in all ways and be embarrassed and ashamed of her physical development. Girls who mature early have problems with low self-esteem because of the failure of others (family members, teachers, ministers, peers, advertisers, and others) to recognize and respect their developmental needs. Overall, youth are more likely to be victimized because they do not have control over their contact with offenders (parents, babysitters, etc.) and have no means of escape (Finkelhor and Dzuiba-Leatherman, in Davis, 1999).

Researchers estimate that 1 out of 4 girls and one out of 10 boys has been sexually abused (Valente, 2005). The median age for sexual abuse is 8 or 9 years for both boys and girls (Finkelhor et. al. 1990). Most boys and girls are sexually abused by a male. Although rates of sexual abuse are higher for girls than for boys, boys may be less likely to report abuse because of the cultural expectation that boys should be able to take care of themselves and because of the stigma attached to homosexual encounters (Finkelhor et. al. 1990). Girls are more likely to be abused by family member and boys by strangers. Sexual abuse can create feelings of self-blame, betrayal, and feelings of shame and guilt (Valente, 2005). Sexual abuse is particularly damaging when the perpetrator is someone the child trusts and may lead to depression, anxiety, problems with intimacy, and suicide (Valente, 2005). The topic of the sexualization of girls in media and society was of chief concern by the American Psychological Association in 2007 and their findings and recommendations to reduce this problem can be accessed here.

## Industry vs. Inferiority

According to Erikson, children in middle childhood are very busy or industrious. They are constantly doing, planning, playing, getting together with friends, achieving. This is a very active time and a time when they are gaining a sense of how they measure up when compared with friends. Erikson believed that if these industrious children can be successful in their endeavors, they will get a sense of confidence for future challenges. If not, a sense of inferiority can be particularly haunting during middle childhood.

## The Society of Children

Friendships take on new importance as judges of one's worth, competence, and attractiveness. Friendships provide the opportunity for learning social skills such as how to communicate with others and how to negotiate differences. Children get ideas from one another about how to perform certain tasks, how to gain popularity, what to wear, say, and listen to, and how to act. This society of children marks a transition from a life focused on the family to a life concerned with peers. Peers play a key role in a child's self-esteem at this age as any parent who has tried to console a rejected child will tell you. No matter how complimentary and encouraging the parent may be, being rejected by friends can only be remedied by renewed acceptance.

**Peer Relationships:** Most children want to be liked and accepted by their friends. Some popular children are nice and have good social skills. These popular-prosocial children tend to do well in school and are cooperative and friendly. Popular-antisocial children may gain popularity by acting tough or spreading rumors about others (Cillessen & Mayeux, 2004). Rejected children are sometimes excluded because they are shy and withdrawn. The withdrawn-rejected children are easy targets for bullies because they are unlikely to retaliate when belittled (Boulton, 1999). Other rejected children are ostracized because they are aggressive, loud, and confrontational. The aggressive-rejected children may be acting out of a feeling of insecurity. Unfortunately, their fear of rejection only leads to behavior that brings further rejection from other children. Children who are not accepted are more likely to experience conflict, lack confidence, and have trouble adjusting.

## Family Life

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). However, Asian-American, African-American, and Mexican-American parents are more likely than European-Americans to use an authoritarian style of parenting. This authoritarian style of parenting that using strict discipline and focuses on obedience is also tempered with acceptance and warmth on the part of the parents. And children raised in this manner tend to be confident, successful and happy (Chao, 2001; Stewart and Bond, 2002).

## 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:

1. Providing food, clothing and shelter
2. Encouraging Learning
3. Developing self-esteem
4. Nurturing friendships with peers
5. 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?

## Family Change

**Divorce**: A lot of attention has been given to the impact of divorce on the life of children. The assumption has been that divorce has a strong, negative impact on the child and that single-parent families are deficient in some way. However, 75-80 percent of children and adults who experience divorce suffer no long term effects (Hetherington & Kelly, 2002). Children of divorce and children who have not experienced divorce are more similar than different (Hetherington & Kelly, 2002).

Mintz (2004) suggests that the alarmist view of divorce was due in part to the newness of divorce when rates in the United States began to climb in the late 1970s. Adults reacting to the change grew up in the 1950s when rates were low. As divorce has become more common and there is less stigma associated with divorce, this view has changed somewhat. Social scientists have operated from the divorce as deficit model emphasizing the problems of being from a "broken home" (Seccombe &Warner, 2004). But more recently, a more objective view of divorce, repartnering, and remarriage indicates that divorce, remarriage and life in stepfamilies can have a variety of effects. The exaggeration of the negative consequences of divorce has left the majority of those who do well hidden and subjected them to unnecessary stigma and social disapproval (Hetherington & Kelly, 2002).

The tasks of families listed above are functions that can be fulfilled in a variety of family types-not just intact, two-parent households. Harmony and stability can be achieved in many family forms and when it is disrupted, either through divorce, or efforts to blend families, or any other circumstances, the child suffers (Hetherington & Kelly, 2002).

## Factors Affecting the Impact of Divorce

As 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 an 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.

**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 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.

Here are some tips for taking care of the self during divorce:

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.

# Repartnering

Repartnering refers to forming new, intimate relationships after divorce. This includes dating, cohabitation and remarriage.

**Parental considerations about dating**: 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.

**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.

**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.

# 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.

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 lost 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/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.

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.

## Developmental Stages of Step-famililes

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 our 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.

## Conclusions

Middle childhood is a complex period of the life span. New understandings and social situations bring variety to children's lives as they form new strategies for the world ahead. We next turn our attention to adolescents.

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# 5.12: Language Development

**Vocabulary**: One of the reasons that children can classify objects in so many ways is that they have acquired a vocabulary to do so. By fifth grade, a child's vocabulary has grown to 40,000 words. It grows at a rate that exceeds that of those in early childhood. This language explosion, however, differs from that of younger children because it is facilitated by being able to associate new words with those already known, and because it is accompanied by a more sophisticated understanding of the meanings of a word.

**New Understanding**: Those in middle and late childhood are also able to think of objects in less literal ways. For example, if asked for the first word that comes to mind when one hears the word "pizza", the younger child is likely to say "eat" or some word that describes what is done with a pizza. However, the older child is more likely to place pizza in the appropriate category and say "food". This sophistication of vocabulary is also evidenced by the fact that older children tell jokes and delight in doing do. They may use jokes that involve plays on words such as "knock- knock" jokes or jokes with punch lines. Young children do not understand play on words and tell "jokes" that are literal or slapstick, such as "A man fell down in the mud! Isn't that funny?"

**Grammar and Flexibility:** Older children are also able to learn new rules of grammar with more flexibility. While younger children are likely to be reluctant to give up saying "I goed there", older children will learn this rather quickly along with other rules of grammar.



Figure 5.7. Source.

**Bilingualism:** Although monolingual speakers often do not realize it, the majority of children around the world are **Bilingual**, *meaning that they understand and use two languages* (Meyers- Sutton, 2005). Even in the United States, which is a relatively monolingual society, more than 47 million people speak a language other than English at home, and about 10 million of these people are children or youths in public schools (United States Department of Commerce, 2003). The large majority of bilingual students (75%) are Hispanic, but the rest represent more than a hundred different language groups from around the world. In larger communities throughout the United States, it is therefore common for a single classroom to contain students from several language backgrounds at once. In classrooms, as in other social settings, bilingualism exists in different forms and degrees. At one extreme are students who speak both English and another language fluently; at the other extreme are those who speak only limited versions of both languages. In between are students who speak their home (or heritage) language much better than English, as well as others who have partially lost their heritage language in the process of learning English (Tse, 2001). Commonly, a student may speak a language satisfactorily, but be challenged by reading or writing it. Whatever the case, each bilingual student poses unique challenges to teachers.

The student who speaks both languages fluently has a definite cognitive advantage. As you might suspect and research confirmed, a fully fluent bilingual student is in a better position to express concepts or ideas in more than one way, and to be aware of doing so (Jimenez, Garcia, & Pearson, 1995; Francis, 2006). Unfortunately, the bilingualism of many students is unbalanced in the sense that they are either still learning English, or else they have lost some earlier ability to use their original, heritage language. Losing one's original language is a concern as research finds that language loss limits students' ability to learn English as well or as

quickly as they could do. Having a large vocabulary in a first language has been shown to save time in learning vocabulary in a second language (Hansen, Umeda & McKinney, 2002). Preserving the first language is important if a student has impaired skill in all languages and therefore needs intervention or help from a speech-language specialist. Research has found, in such cases, that the specialist can be more effective if the specialist speaks and uses the first language as well as English (Kohnert, Yim, Nett, Kan, & Duran, 2005).

## Communication Disorders

At the end of early childhood children are often assessed in terms of their ability to speak properly. By first grade, about 5% of children have a notable speech disorder (Medline Plus, 2016c).

**Fluency disorders: Fluency disorders** *affect the rate of speech*. Speech may be labored and slow, or too fast for listeners to follow. The most common fluency disorder is stuttering. **Stuttering** *is a speech disorder in which sounds, syllables, or words are repeated or last longer than normal*. These problems cause a break in the flow of speech, which is called dysfluency (Medline Plus, 2016b). About 5% of young children, aged two-five, will develop some stuttering that may last from several weeks to several years (Medline Plus, 2016c). Approximately 75% of children recover from stuttering. For the remaining 25%, stuttering can persist as a lifelong communication disorder (National Institute on Deafness and other Communication Disorders, NIDCD, 2016). This is called developmental stuttering and is the most common form of stuttering. Brain injury, and in very rare instances, emotional trauma may be other triggers for developing problems with stuttering. In most cases of developmental stuttering, other family members share the same communication disorder. Researchers have recently identified variants in four genes that are more commonly found in those who stutter (NIDCD, 2016).

**Articulation disorder:** An **articulation disorder** *refers to the inability to correctly produce speech sounds (phonemes) because of imprecise placement, timing, pressure, speed, or flow of movement of the lips, tongue, or throat* (NIDCD, 2016). Sounds can be substituted, left off, added or changed. These errors may make it hard for people to understand the speaker. They can range from problems with specific sounds, such as lisping to severe impairment in the phonological system. Most children have problems pronouncing words early on while their speech is developing. However, by age three, at least half of what a child says should be understood by a stranger. By age five, a child's speech should be mostly intelligible. Parents should seek help if by age six the child is still having trouble producing certain sounds. It should be noted that accents are not articulation disorders (Medline Plus, 2016a).

**Voice disorders: Disorders of the voice** *involve problems with pitch, loudness, and quality of the voice* (American Speech-Language and Hearing Association, 2016). It only becomes a disorder when problems with the voice makes the child unintelligible. In children, voice disorders are significantly more prevalent in males than in females. Between 1.4% and 6% of children experience problems with the quality of their voice. Causes can be due to structural abnormalities in the vocal cords and/or larynx, functional factors, such as vocal fatigue from overuse, and in rarer cases psychological factors, such as chronic stress and anxiety.

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# 5.13: Socioemotional Development in Middle and Late Childhood

**Learning Objectives: Socioemotional Development in Middle and Late Childhood**

- Describe Erikson's fourth stage of industry vs. inferiority
- Describe the changes in self-concept, self-esteem, and self-efficacy
- Explain Kohlberg's stages of moral development
- Describe the importance of peers, the stages of friendships, peer acceptance, and the consequences of peer acceptance
- Describe bullying, cyberbullying and the consequences of bullying
- Identify the types of families where children reside
- Identify the five family tasks
- Explain the consequences of divorce on children
- Describe the effects of cohabitation and remarriage on children
- Describe the characteristics and developmental stages of blended families

## Erikson: Industry vs. Inferiority

According to Erikson, children in middle and late childhood are very busy or industrious (Erikson, 1982). They are constantly doing, planning, playing, getting together with friends, and achieving. This is a very active time, and a time when they are gaining a sense of how they measure up when compared with peers. Erikson believed that if these industrious children can be successful in their endeavors, they will get a sense of confidence for future challenges. If not, a sense of inferiority can be particularly haunting during middle and late childhood.

### Self-Understanding

**Self-concept** *refers to beliefs about general personal identity* (Seiffert, 2011). These beliefs include personal attributes, such as one's age, physical characteristics, behaviors, and competencies. Children in middle and late childhood have a more realistic sense of self than do those in early childhood, and they better understand their strengths and weaknesses. This can be attributed to greater experience in comparing their own performance with that of others, and to greater cognitive flexibility. Children in middle and late childhood are also able to include other peoples' appraisals of them into their self-concept, including parents, teachers, peers, culture, and media. Internalizing others' appraisals and creating social comparison affect children's **self-esteem**, *which is defined as an evaluation of one's identity*. Children can have individual assessments of how well they perform a variety of activities and also develop an overall global self-assessment. If there is a discrepancy between how children view themselves and what they consider to be their ideal selves, their self-esteem can be negatively affected.



Figure 5.20: Hopefully these children have self-efficacy about playing the violin. Source.

Another important development in self-understanding is **self-efficacy**, *which is the belief that you are capable of carrying out a specific task or of reaching a specific goal* (Bandura, 1977, 1986, 1997). Large discrepancies between self-efficacy and ability can create motivational problems for the individual (Seifert, 2011). If a student believes that he or she can solve mathematical problems, then the student is more likely to attempt the mathematics homework that the teacher assigns. Unfortunately, the converse is also true. If a student believes that he or she is incapable of math, then the student is less likely to attempt the math homework regardless of the student's actual ability in math. Since self-efficacy is self-constructed, it is possible for students to miscalculate or misperceive their true skill, and these misperceptions can have complex effects on students' motivations. It is possible to have either too much or too little self-efficacy, and according to Bandura (1997) the optimum level seems to be either at, or slightly above, true ability.

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# 5.14: Kohlberg's Stages of Moral Development

Lawrence Kohlberg (1963) built on the work of Piaget and was interested in finding out how our moral reasoning changes as we get older. He 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 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.

## Pre-conventional 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.

## Post-conventional 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.

**Exercise:**

Consider your own decision-making processes. What guides your decisions? Are you primarily concerned with your personal well-being? Do you make choices based on what other people will think about your decision? Or are you guided by other principles? To what extent is this approach guided by your culture?

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# 5.15: Friends and Peers

As toddlers, children may begin to show a preference for certain playmates (Ross & Lollis, 1989). However, peer interactions at this age often involve more parallel play rather than intentional social interactions (Pettit, Clawson, Dodge, & Bates, 1996). By age four, many children use the word “friend” when referring to certain children, and do so with a fair degree of stability (Hartup, 1983). However, among young children “friendship” is often based on proximity, such as they live next door, attend the same school, or it refers to whomever they just happen to be playing with at the time (Rubin, 1980).

Friendships take on new importance as judges of one's worth, competence, and attractiveness in middle and late childhood. Friendships provide the opportunity for learning social skills, such as how to communicate with others and how to negotiate differences. Children get ideas from one another about how to perform certain tasks, how to gain popularity, what to wear or say, and how to act. This society of children marks a transition from a life focused on the family to a life concerned with peers. During middle and late childhood, peers increasingly play an important role. For example, peers play a key role in a child's self-esteem at this age as any parent who has tried to console a rejected child will tell you. No matter how complimentary and encouraging the parent may be, being rejected by friends can only be remedied by renewed acceptance. Children’s conceptualization of what makes someone a “friend” changes from a more egocentric understanding to one based on mutual trust and commitment. Both Bigelow (1977) and Selman (1980) believe that these changes are linked to advances in cognitive development.



Figure 5.21. Source.

Bigelow and La Gaipa (1975) outline three stages to children’s conceptualization of friendship. In stage one, **reward-cost**, friendship *focuses on mutual activities*. Children in early, middle, and late childhood all emphasize similar interests as the main characteristics of a good friend. Stage two, **normative expectation**, *focuses on conventional morality; that is, the emphasis is on a friend as someone who is kind and shares with you*. Clark and Bittle (1992) found that fifth graders emphasized this in a friend more than third or eighth graders. In the final stage, **empathy and understanding**, *friends are people who are loyal, committed to the relationship, and share intimate information*. Clark and Bittle (1992) reported eighth graders emphasized this more in a friend. They also found that as early as fifth grade, girls were starting to include a sharing of secrets, and not betraying confidences as crucial to someone who is a friend.

Selman (1980) outlines five stages of friendship from early childhood through to adulthood. In stage 0, **momentary physical interaction**, *a friend is someone who you are playing with at this point in time*. Selman notes that this is typical of children between the ages of three and six. These early friendships are based more on circumstances (e.g., a neighbor) than on genuine similarities. In stage 1, **one-way assistance**, *a friend is someone who does nice things for you*, such as saving you a seat on the school bus or sharing a toy. However, children in this stage, do not always think about what they are contributing to the relationships. Nonetheless, having a friend is important and children will sometimes put up with a not so nice friend, just to have a friend. Children as young as five and as old as nine may be in this stage. In stage 2, **fair- weather cooperation**, children are very concerned with fairness and reciprocity, and thus, *a friend is someone returns a favor*. In this stage, if a child does something

nice for a friend there is an expectation that the friend will do something nice for them at the first available opportunity. When this fails to happen, a child may break off the friendship. Selman found that some children as young as seven and as old as twelve are in this stage. In stage 3, **intimate and mutual sharing**, typically between the ages of eight and fifteen, *a friend is someone who you can tell them things you would tell no one else.* Children and teens in this stage no longer "keep score", and do things for a friend because they genuinely care for the person. If a friendship dissolves in the stage it is usually due to a violation of trust. However, children in this stage do expect their friend to share similar interests and viewpoints and may take it as a betrayal if a friend likes someone that they do not. In stage 4, **autonomous interdependence**, *a friend is someone who accepts you and that you accept as they are.* In this stage children, teens, and adults accept and even appreciate differences between themselves and their friends. They are also not as possessive, so they are less likely to feel threatened if their friends have other relationships or interests. Children are typically twelve or older in this stage.

**Peer Relationships: Sociometric assessment** *measures attraction between members of a group,* such as a classroom of students. In sociometric research children are asked to mention the three children they like to play with the most, and those they do not like to play with. The number of times a child is nominated for each of the two categories (like, do not like) is tabulated. **Popular children** *receive many votes in the "like" category, and very few in the "do not like" category*. In contrast, **rejected children** *receive more unfavorable votes, and few favorable ones*. **Controversial children** *are mentioned frequently in each category*, with several children liking them and several children placing them in the do not like category. **Neglected children** *are rarely mentioned in either category*, and the **average child** *has a few positive votes with very few negative ones* (Asher & Hymel, 1981).

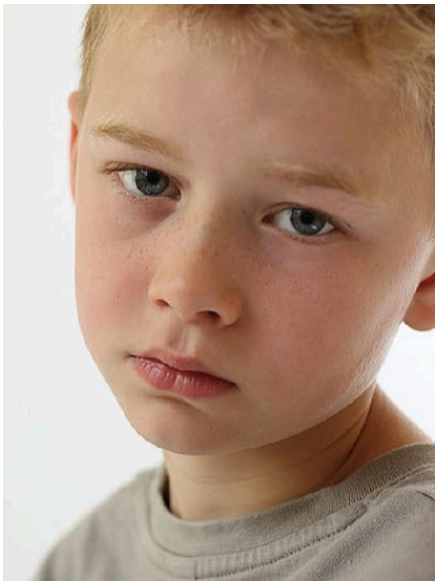


Figure 5.22: Withdrawn children are targets for bullies. Source.

Most children want to be liked and accepted by their friends. Some popular children are nice and have good social skills. These **popular-prosocial** children *tend to do well in school and are cooperative and friendly*. **Popular-antisocial** children may *gain popularity by acting tough or spreading rumors about others* (Cillessen & Mayeux, 2004). Rejected children are sometimes excluded because they are **rejected-withdrawn**. *These children are shy and withdrawn* and are easy targets for bullies because they are unlikely to retaliate when belittled (Boulton, 1999). Other rejected children are **rejected-aggressive** and *are ostracized because they are aggressive, loud, and confrontational*. The aggressive-rejected children may be acting out of a feeling of insecurity. Unfortunately, their fear of rejection only leads to behavior that brings further rejection from other children. Children who are not accepted are more likely to experience conflict, lack confidence, and have trouble adjusting (Klima & Repetti, 2008; Schwartz, Lansford, Dodge, Pettit, & Bates, 2014).

## Bullying

According to Stopbullying.gov (2016), a federal government website managed by the U.S. Department of Health & Human Services, **Bullying** *is defined as unwanted, aggressive behavior among school aged children that involves a real or perceived power imbalance*. Further, the aggressive behavior happens more than once or has the potential to be repeated. There are different types of bullying, including verbal bullying, which is saying or writing mean things, teasing, name calling, taunting, threatening, or making inappropriate sexual comments. Social bullying, also referred to as relational bullying, involves spreading

rumors, purposefully excluding someone from a group, or embarrassing someone on purpose. Physical Bullying involves hurting a person's body or possessions.

A more recent form of bullying is **Cyberbullying,** *which involves electronic technology*. Examples of cyberbullying include sending mean text messages or emails, creating fake profiles, and posting embarrassing pictures, videos or rumors on social networking sites. Children who experience cyberbullying have a harder time getting away from the behavior because it can occur any time of day and without being in the presence of others. Additional concerns of cyberbullying include that messages and images can be posted anonymously, distributed quickly, and be difficult to trace or delete. Children who are cyberbullied are more likely to: experience in-person bullying, be unwilling to attend school, receive poor grades, use alcohol and drugs, skip school, have lower self-esteem, and have more health problems (Stopbullying.gov, 2016).

The National Center for Education Statistics and Bureau of Justice statistics indicate that in 2010-2011, 28% of students in grades 6-12 experienced bullying and 7% experienced cyberbullying. The 2013 Youth Risk Behavior Surveillance System, which monitors six types of health risk behaviors, indicate that 20% of students in grades 9-12 experienced bullying and 15% experienced cyberbullying (Stopbullying.gov, 2016).



Figure 5.23. Source.

**Those at risk for bullying**: Bullying can happen to anyone, but some students are at an increased risk for being bullied including lesbian, gay, bisexual, transgendered (LGBT) youth, those with disabilities, and those who are socially isolated. Additionally, those who are perceived as different, weak, less popular, overweight, or having low self-esteem, have a higher likelihood of being bullied.

**Those who are more likely to bully:** Bullies are often thought of as having low self-esteem, and then bully others to feel better about themselves. Although this can occur, many bullies in fact have high levels of self-esteem. They possess considerable popularity and social power and have well-connected peer relationships. They do not lack self-esteem, and instead lack empathy for others. They like to dominate or be in charge of others.

**Bullied children often do not ask for help:** Unfortunately, most children do not let adults know that they are being bullied. Some fear retaliation from the bully, while others are too embarrassed to ask for help. Those who are socially isolated may not know who to ask for help or believe that no one would care or assist them if they did ask for assistance. Consequently, it is important for parents and teacher to know the warning signs that may indicate a child is being bullied. These include: unexplainable injuries, lost or destroyed possessions, changes in eating or sleeping patterns, declining school grades, not wanting to go to school, loss of friends, decreased self-esteem and/or self-destructive behaviors.

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# 5.16: Family Life

**Family Tasks**: One of the ways to assess the quality of family life is to consider the tasks of families. Berger (2014) lists five family functions:

- Providing food, clothing and shelter
- Encouraging learning
- Developing self-esteem
- Nurturing friendships with peers
- 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. Hopefully, the family will provide 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 as a child. The tasks of families listed above are functions that can be fulfilled in a variety of family types-not just intact, two-parent households.

**Parenting Styles:** As discussed in the previous chapter, parenting styles affect the relationship parents have with their children. During middle and late childhood, children spend less time with parents and more time with peers, and consequently parents may have to modify their approach to parenting to accommodate the child's growing independence. The authoritative style, which incorporates reason and engaging in joint decision-making whenever possible may be the most effective approach (Berk, 2007). However, Asian-American, African-American, and Mexican-American parents are more likely than European-Americans to use an authoritarian style of parenting. This authoritarian style of parenting that using strict discipline and focuses on obedience is also tempered with acceptance and warmth on the part of the parents. Children raised in this manner tend to be confident, successful and happy (Chao, 2001; Stewart & Bond, 2002).

**Living Arrangements:** Certainly the living arrangements of children have changed significantly over the years. In 1960, 92% of children resided with married parents, while only 5% had parents who were divorced or separated and 1% resided with parents who had never been married. By 2008, 70% of children resided with married parents, 15% had parent who were divorced or separated, and by 2010, 14% resided with parents who had never married (Pew Research Center, 2010). By 2013 only 61% of children resided with married parents, and of those only 46% were being raised by both of their biological parents (Livingston, 2014).

Based on the 2010 United States Census, when just looking at households that contain spouses or unmarried partners with children, the majority of households with children are married, opposite sex couples (Lofquist, 2011). However, same sex couples have higher percentages of adopted children than opposite sex couples. Table 5.7 identifies the number of same sex and opposite sex households with children.

*Table 5.7: 2010 Census Data on Households with Children in the United States. Source.*

| | Total Households | Married Opposite-Sex Couples | Unmarried Opposite-Sex Couples | Same-Sex Couples |
|---|---|---|---|---|
| *Households with children* | 25,233,794 | 22,872,151 (90.6%) | 2,267,016 (8.9%) | 94,627 (0.4%) |
| *Biological only* | | 90.80% | 88% | 72.80% |
| *Step only or adopted only* | | 4.40% | 5.20% | 21.20% |
| *Combination* | | 4.80% | 6.80% | 6% |

**Lesbian and Gay Parenting:** Research has consistently shown that the children of lesbian and gay parents are as successful as those of heterosexual parents, and consequently efforts are being made to ensure that gay and lesbian couples are provided with the same legal rights as heterosexual couples when adopting children (American Civil Liberties Union, 2016).



Figure 5.24. Source.

Patterson (2013) reviewed more than 25 years of social science research on the development of children raised by lesbian and gay parents and found no evidence of detrimental effects. In fact, research has demonstrated that children of lesbian and gay parents are as well-adjusted overall as those of heterosexual parents. Specifically, research comparing children based on parental sexual orientation has not shown any differences in the development of gender identity, gender role development, or sexual orientation. Additionally, there were no differences between the children of lesbian or gay parents and those of heterosexual parents in separation-individuation, behavior problems, self-concept, locus of control, moral judgment, school adjustment, intelligence, victimization, and substance use. Further, research has consistently found that children and adolescents of gay and lesbian parents report normal social relationships with family members, peers, and other adults. Patterson concluded that there is no evidence to support legal discrimination or policy bias against lesbian and gay parents.

**Divorce:** Using families in the National Institute of Child Health and Human Development (NICHD) Study of Early Child Care and Youth Development, Weaver and Schofield (2015) found that children from divorced families had significantly more behavior problems than those from a matched sample of children from non-divorced families. These problems were evident immediately after the separation and also in early and middle adolescence. An analysis of divorce factors indicated that children exhibited more externalizing behaviors if the family had fewer financial resources before the separation. It was hypothesized that the lower income and lack of educational and community resources contributed to the stress involved in the divorce. Additional factors contributing to children's behavior problems included a post-divorce home that was less supportive and stimulating, and a mother that was less sensitive and more depressed.

Additional concerns include that 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. Very often, divorce means a change in the amount of money coming into the household. Children experience new constraints on spending or entertainment. School-aged children, especially, may notice that they can no longer have toys, clothing or other items to which they have grown accustomed. Or it may mean that there is less eating out or being able to afford participation in extracurricular activities. 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. 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.

Relationships of adult children of divorce are identified as more problematic than those adults from intact homes. For 25 years, Hetherington and Kelly (2002) followed children of divorce and those whose parents stayed together. The results indicated that 25% of adults whose parents had divorced experienced social, emotional, or psychological problems compared with only 10% of those whose parents remained married. For example, children of divorce have more difficulty forming and sustaining intimate relationships as young adults, are more dissatisfied with their marriage, and consequently more likely to get divorced themselves (Arkowitz & Lilienfeld, 2013). 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 long-term

economic status (Drexler, 2005).

According to Arkowitz and Lilienfeld (2013), long-term harm from parental divorce is not inevitable, however, and children can navigate the experience successfully. A variety of factors can positively contribute to the child's adjustment. For example, children manage better when parents limit conflict, and provide warmth, emotional support and appropriate discipline. Further, children cope better when they reside with a well-functioning parent and have access to social support from peers and other adults. Those at a higher socioeconomic status may fare better because some of the negative consequences of divorce are a result of financial hardship rather than divorce per se (Drexler, 2005).

Although they may experience more problems than children from non-divorced families, most children of divorce lead happy, well-adjusted lives and develop strong, positive relationships with their custodial parent (Seccombe & Warner, 2004). In the United States and Canada, most children reside with their mother in single-parent households (Berk, 2007). Children from single-parent families talk to their mothers more often than children of two-parent families (McLanahan & Sandefur, 1994). 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, & Barenbaum, 1997).

Certain characteristics of the child can also facilitate post-divorce adjustment. Specifically, children with an easygoing temperament, who problem-solve well, and seek social support manage better after divorce. A further protective factor for children is intelligence (Weaver & Schofield, 2015). Children with higher IQ scores appear to be buffered from the effects of divorce. Children may be given more opportunity to discover their own abilities and gain independence that fosters self-esteem. If divorce means a reduction in tension, the child may feel relief. Overall, not all children of divorce suffer negative consequences and should not be subjected to stigma or social disapproval (Hetherington & Kelly, 2002). 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.

**Is cohabitation and remarriage more difficult than divorce for the child?** 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. 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. Cohabitation 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. Even in long-term cohabiting relationships, once it is over, continued contact with the child is rare.

**Blended Families**: 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 blended families in America grow considerably, although rates of remarriage are declining (Seccombe & Warner, 2004). Blended families are not new. In the 1700-1800s there were many blended families, but they were created because someone died and remarried. Most blended families today are a result of divorce and remarriage, and such origins lead to new considerations. Blended families 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 blended family relationships (Visher & Visher, 1985). Children may be a part of two households, each with different rules that can be confusing.



Figure 5.25: Blended family. Source.

Members in blended families 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. 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. This occurs especially if there has not been time for the relationship to develop.

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# 5.17: Middle Childhood Lecture

## Lecture Transcript

Now we turn our attention to middle childhood. This is the age when many children begin formal schooling. It is approximately 6 to 11 years of age.

First, let's explore physical development during this time.

**Middle childhood** has been called the "golden age" of childhood. Overall, children are relatively healthy during this period. Growth rates slow and children start gaining about 5-7 pounds in weight and 2 inches in height each year. Many children begin to slim down as their torsos become longer. A child at this age can have strong muscles and increased lung capacity to enable them to play for long periods of time.

This is the age when many children begin to play organized sports. Their bodies are well-equipped for such activities. However, it's been said that sports are best for children if their parents stay home. This is because parents can have the tendency to focus primarily on competition and less on instilling enjoyment of the game. This can lead to tension, hostility, and become a source of discouragement for a child who doesn't always win. Unfortunately, such children may give up and become less active or experience burn-out at a young age.

Listen to the story entitled "College Sports Excesses Seep into High School" by Frank DeFord, the editor of Sports Illustrated magazine for a humorous look at the adult mentality applied to sports. We know that unstructured play offers children the ability to be active without penalty and to be creative and improve social skills in ways that structured sports cannot.

Childhood obesity has become an increasing problem in the United States, Great Britain, and other parts of the world. It's estimated that between 16 and 33 percent of American children are obese. This doesn't mean that they are a few pounds overweight. It is defined as being at least 20 percent over ideal weight. Childhood obesity has tripled in the last 30 years. Obesity is defined as having a body mass index greater than or equal to the 95th percentile for sex and age. Children who suffer from obesity can be the subject of ridicule, bullying, cardiovascular disease, bone, joint problems, and type 2 diabetes.

The Center for Disease Control recommends that schools examine their nutrition on school menus, reevaluate the offerings of food and beverages outside school lunches, and increase physical activity to begin to combat this problem. Here is a copy of the school lunches served at my children's school a few years ago. A popular meal was served on Wednesdays each week. It consisted on chicken nuggets, a roll, green beans or mashed potatoes.

Let's examine the nutritional breakdown of this meal:

Here we find some alarming information. This menu, which fell within state nutritional guidelines, consisted of 1181 calories, 2878 mg of sodium, 145 mg of cholesterol, 39.33 grams of fat (of which 20.04 grams were saturated fat), and 151 grams of carbohydrates. Ice cream, cookies, chips, and sodas were available at the end of the line for additional purchase. School lunches vary from state to state and school district to school district. Parents need to be aware of what is served within the schools as well as to consider other sources of high fat, high starch foods their children are consuming.

Now we will explore cognitive development in middle childhood.

Piaget's third stage, the **concrete operational stage** of intelligence, involves the ability to understand the physical or tangible world. Children can now classify objects in many ways. They recognized that objects retain their identity, even if modified (such as a scrambled egg is still an egg), and recognize the identity held by numbers. It becomes easier for school aged children to reverse a set of operations in math or to understand that moving backward in a set of procedures can bring one back to the beginning point. Reciprocity is also understood. A child recognizes that the water level rises if a container of water is narrow and falls if water is placed in a wide, shallow container.

**Information processing theory** is a classic theory of memory that uses the analogy of a computer to help us understand how memories are built. The first location for information to enter is through the senses. Seeing, hearing, touching, or smelling a stimulus is the first step to forming a memory. Most of what comes into our sensory register is there for only a split second and then is either dismissed or moved to our working or short term memory. Short term or working memory has a limited capacity of

about 9 to 11 pieces of information at a time. Information must be rehearsed to be kept alive in our short term memories. The long term or knowledge base consists of information that we have stored and can access when needed. This storage area has a seemingly unlimited capacity. The key to being able to access what is in your long-term memory is making sure that it is stored in a meaningful ways children enter school, they begin to process information more quickly than before. This is because they can find links and meaning in new information and store it more easily. Schooling often involves learning new strategies to help with academic tasks.

Vocabulary continues to increase throughout middle childhood at the rate of about 20 new words each day. A 5th grader knows an estimated 40,000 words. And they begin to understand the meanings of words and plays on words. Grammar is more easily learned and rules of grammar are applied more flexibly.

Lawrence Kohlberg applied Piaget's principles to moral decision-making. In the **preconventional** stage, moral decision-making is based on whether an action brings direct, personal benefit such as reward or punishment. **Conventional** moral reasoning is based on the opinions of others about the act. Still, personal benefit, perhaps in the form of being viewed as right or good is the basis for a decision to act. Post conventional moral reasoning is based on universal, moral, or ethical principles or the good of others rather than self.

School brings assessment of a child's performance and developmental problems can be recognized once a child enters this setting. Diagnosing and labeling a child with a developmental problem can help parents, teachers, and others to form a treatment plan to assist the child. But labels can be inaccurate and misapplied. Nevertheless, the label can become part of the child's self-assessment and the child may begin to act accordingly. For example, a child labeled as a 'slow-learner' may lose confidence in their abilities and feel self-conscious about the label. This can get in the way of learning and thereby create a self-fulfilling prophecy.

Autism spectrum disorders range from pervasive developmental delay to Asperger's syndrome. Children vary in the degree to which they exhibit autistic symptoms. The word autism means 'selfism' or a focus on an internal world. Children with autism spectrum disorders may lack motivation to learn language, be sensitive to detail, prefer consistency, and lack or be delayed in developing social emotions such as embarrassment or guilt. A minority of children with autistic spectrum disorders have unusual talents. These talents or strong interests are more characteristic of Asperger's syndrome.

Consider this definition of learning disability: "A measured discrepancy between expected learning and actual accomplishment in a particular academic area." This definition calls our attention to the academic standards we set for children and the labeling process to which they may be subjected. By this definition, raising standards can result in an increase of students who are considered learning disabled.

Learning difficulties are specific to academic skills and include dyslexia, dyscalcula, and attention deficit disorder. There are numerous conditions that can lead to these difficulties.

Schooling brings assessment of intellectual skills. Some assessments are achievement tests. These are designed to measure what a child has learned and are administered at the end of a course of study. Aptitude tests are designed to measure a child's potential to learn and may be used as entrance requirements. Intelligence tests are one type of aptitude test. However, intelligence tests are not uniformly administered. They are more likely used as part of a clinical assessment in situations in which a child needs special attention or instruction.

Intelligence tests do not measure all types of talents or intelligences. Howard Gardner suggests that there are many talents abilities that can set a person apart and help them be successful that go beyond academic intelligence. His domains of intelligences include **logical-mathematical, linguistic, and spatial intelligence**, which are the kinds of abilities measured by intelligence tests. Other intelligences include **bodily-kinesthetic intelligence** which focuses on movement, strength, accuracy, and endurance; **musical intelligence**, **intrapersonal intelligence**, or knowledge of one's own motivations and internal psychological state; **interpersonal intelligence**, or the ability to read others accurately, negotiate, communicate and exhibit other interpersonal skills; **naturalistic intelligence** such as the knowledge of climate, crops, or animals vital to success in farming or herding; and **existential intelligence** that involves spiritual or philosophical understandings that address life's bigger questions about existence and purpose.

Robert Sternberg offers another model of intelligence that takes us outside academic intelligence. His **triarchic theory of intelligence** includes academic intelligence or "book smarts" which is the type of intelligence IQ tests measure. But also considered key are creative or experiential intelligence and practical intelligence. **Creative** intelligence is the ability to use what has been learned or to put knowledge into experience. **Practical** intelligence or "street smarts" also referred to as common sense is the ability to understand what is called for in a situation and to act accordingly. These intelligences are important for success

in life

Let's take a different look at school and the world of school as experienced by parents and students. Schools often express a desire for family involvement. Some families bring qualities to the school setting that can influence the child's experience. These qualities, such as financial support for the school or community status are referred to as family capital. A well-known member of the community or a parent who offers time, money, and a supportive attitude toward the teacher may be receive additional resources or guidance for their child. Have you ever asked a child about their day at school? Chances are, the answer focused on the social life at school. Educator Peter McLaren observed and recorded the amount of time students spent in various states throughout the school day. The student state is a state in which the students is on task, compliant, and focused on teacher requests. About 298 minutes were spent in the student state. This is the state preferred by teachers. But many students preferred to spend time in the street corner state. This is a state in which the child is able to socialize with other children and to act as they might when not in school. Children try to maximize this stage by taking longer in the halls when going from one classroom to another or by moving more slowly when getting out books or other materials. The home state occurs when family members are at the school. In this state, children are subjected to a different set of rules than those set by the school. For example, a child may get to sit with their parents or leave a class early as a result.

All schools have a formal curriculum or set of courses and objectives that are clearly written down. But schools also teach powerful lessons referred to as the "hidden curriculum."These lessons include gender roles, competition, preferences based on social class, race, ethnicity, and sexual orientation. The hidden curriculum is not directly states, yet students receive indirect messages about the believed superiority or inferiority of these groups. For example, a teacher may ignore insults made toward a student for being gay even if the school has an official policy against discrimination based on sexual orientation.

**Psychosocial development in middle childhood.**

Entering school often means entering the society or culture of children. Children establish a language, set of rules, behaviors, and roles for one another. This society of children can serve as a living laboratory for learning and practicing social skills such as negotiation, communication, and problem-solving.Think about the children you remember from your early grades in school. You may remember some children who were known by many and were well-liked. These popular-prosocial children are highly visible and seem to have the support and the encouragement of the school. Some children are popular, but their popularity comes from altercations with other students and rebelliousness within the school. It may be hard for these children to change their social behavior as it has become part of their persona and popularity. Some children are withdrawn and suffer the rejection of other children. They may have some qualities that make them a safe target for bullying such as being poor, having a physical challenge, or being shy. Aggressive-rejected children are rebellious and have altercations with other students, but this doesn't gain them popularity? Why not? Perhaps it is because they are not physically attractive or are poor.

School-aged children are forming a sense of self or self-concept. This begins earlier in life, but continues to take shape in middle childhood. In societies where media is powerful, children may develop evaluation themselves based on images or products in television shows, commercials, or on the internet. Erikson believed that these children struggle with industry, a stage of being busy and learning about one's capabilities, versus inferiority. To what extent might a child feel inferior in these comparisons?

To what extent are developmental needs addressed in the world that we establish for children? Many of the activities and products created for children may really be designed to meet adult needs rather than those of children. Think, for example, of the elaborate birthday party given a 6 year old that is really an effort to establish parental status in the neighborhood. False self-training refers to children being held to external, adult standards while having their own developmental needs denied. One area in which children are held to adult standards is in the case of sexual abuse.

Child sexual abuse is a sexual act with a child that is performed by an adult or an older child. The developmental immaturity of the child is ignored and needs are disregarded. For example, a young girl who begins physical maturation early may be considered to be sexual although emotionally and cognitively she is not equipped to understand the sexual behavior and its implications.

David Finkelhor describes the long term consequences of childhood sexual abuse. Traumatic sexualization refers to the way in which a child who is sexually abused may learn to use sexuality and seduction as a major way to communicate with others. The person may devalue other aspects of who they are and have difficulty thinking of sex and love as part of a relationship. A sense of betrayal and lack of trust is particularly strong in cases of incest. The child learned that secrecy and denial of the experience is expected and that those who are supposed to care for you can also be those who abuse you. A healthy understand of an appropriate parent/child relationship is lacking as trust is undermined. A person may also experience a sense of powerlessness or an inability to set limits with others. This may mean being involved in other abusive relationships or in being unable to say no to demands on time or money or other resources.
Finally, the person who is abused may feel stigmatized or looked down upon by others. This makes it difficult for the person to

ask for help or find support or to be taken seriously in a compassionate way.

Next, let's turn our attention to family structure and relationships. There are a variety of family forms, from two-parent intact families, to single-parent families, to cohabiting families. Which structure is best? One way to address this question is to understand the tasks performed by families. Family tasks include providing food, clothing, and shelter for children, encouraging learning, developing self-esteem in children, nurturing their friendships, and providing a harmonious and stable environment for family life.

Divorce rates in the United States began to rise in the 1970s and increased steadily until it peaked in the early 1980s. This has been accompanied by great concern over the impact divorce has on children. Divorce doesn't affect all children in the same way. The impact of divorce on children depends on the degree of conflict prior to divorce, the amount of financial hardship experienced by the children, the actions of the divorcing couple toward the child, and the level of adjustment of the custodial parent.

Judith Wallerstein outlines some short-term consequences for children following divorce. These include a feeling of loss or grief over family members who are no longer part of the child's life, a reduced standard of living, adjusting to transitions such as changing schools or moving, and experiencing relief from conflict that may have been experienced prior to the divorce.

Adults who experienced divorce as children may have greater anxiety about their own relationships. Or they may have unrealistically high expectations for a partner-seeking the perfect mate to avoid future divorce. Of course, it's hard to find perfection. Peggy Drexler suggests that many of the long term consequences for children are tied to financial hardship rather than divorce. For instance, there may have been less financial support for schooling that then translates to lower occupational attainment following divorce.

Newer research on the impact of divorce on children has focused on some positive consequences. Hetherington found that most children of divorce lead happy, well-adjusted lives. These well-adjusted adults went unnoticed when researchers focused solely on looking at people with problems and used hindsight to suggest that their problems were due to divorce. Many daughters find that their communication improves with their mothers, typically their custodial parent. Parenting becomes more democratic and children have a greater role in family decision-making as they mature. Drexler found that sons felt freer to escape negative role models if their mothers were in dating relationships than if those negative models were marital partners. And sons being raised without fathers showed more emotional independence and freedom to express emotions being in a single-parent family.

The psychological health of the parents, especially the parent with whom the child spends the most time, is key to helping children adjust. Here are a few tips for parents going through divorce. One is to take care of your own mental health. Find others that can offer support and understanding. Allow children to express their grief over losses. Cultivate a healthy, conflict-free relationship with the other parent for the sake of the children. And try to establish a home environment that is healthy, positive, and comfortable.

**Repartnering** refers to parents developing new relationships after breaking up. Remarriage is one type of repartnering. Sometimes, repartnering can be an even harder transition for children than was the divorce of their parents. Parenting that may have become more democratic in a single-parent household, may now become more authoritarian when a new partner becomes part of the family. This can be a difficult adjustment for children. Step-parents may want to take on parental roles right away, but children may want to establish friendship first.

Repartnering can also mean changes in the amount of time and attention biological parents show their children. The greatest involvement with children may occur before either parent has established a new relationship. The least involvement seems to occur when the father has established a new relationship but the mother has not. The father may be spending more time with his new partner and children. And there may be greater tension between mother and step-mother than between father and step-father due to the emphasis on involvement in maternal roles.

Repartnering also brings about dating concerns. Does a parent have time and money to date? Should the parent have a new partner meet their children? If so, when? What will be their role? Should the new partner spend the night? Cohabitation is one way of repartnering. The partners live together but are not married. Cohabiting families must consider the roles of partners, the financial contributions to the family and to members outside the household, and the effects of breaking up on children who may now have to sever ties they've established.

Stepfamilies or blended families have been increasing since divorce rates began to rise. But stepfamilies were also common in western society in the 1700s and 1800s. The stepfamilies of today, however, are typically created through divorce and remarriage rather than due to the death of a spouse. Sociologist Andrew Cherlin has described stepfamilies as an "incomplete institution" because the rules and guidelines for life in stepfamilies are unclear. Stepfamilies may experience greater difficulty than single-

parent families as they try to establish new rules and roles and deal with mixed loyalties and relationships.

Stepfamilies have some characteristics that need to be considered. Stepfamilies are structurally more complex. There are more members involves and their loyalties may be divided. Many stepfamilies are established at the same time members are grieving over previous losses following divorce. Love between members of stepfamilies has to be cultivated; it cannot be assumed. The roles that stepfamily members play, whether this is a new step-parent or a non-custodial parent, are often unclear and have to be established. And sexual attractions may occur and need to be monitored. Modesty and caution when showing physical displays of affection are recommended.

This is an effort to establish some guidelines for stepfamily members. Here are a few tips. One is to establish neutral territory or routines for the new family rather than having members adjust to the previous family's location or routines. If you are a stepparent, don't try to fit a preconceived role. Set limits so that the new couple can establish their new relationship without unnecessary interference or efforts to sabotage the relationship by the children. Respect past loyalties. Recognize that your partner and their children have a past that should be recognized and respected. If a child is upset with the other parent, be neutral about it. Don't get in the middle of this or you may be resented later for interfering or speaking badly about their parent. If you are a stepparent, don't expect instant love. Stepfamilies go through developmental stages, according to Papernow. This process can take up to 7 years. Fantasy about the perfect family, being immersed in the new relationships, and 'mapping out' the new territory are found in the early stages of stepfamily development.

In the middle stages, members begin to recognize their differences and express conflicts more openly. Stepparents may begin to take a stand on their role and position in the family. In later stages, a lot of the hard work of establishing the family's roles and rules has been accomplished and the members make closer contact with one another. Acceptance of one another and the family is found. Many stepfamilies, however, find it difficult to endure long enough to complete theses stages.

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# 5.18: Middle Childhood PPT

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# 5.19: Childhood Study Guide

## Study Guide:

1. Characterize physical growth for the first two years. Be sure to include a description of the ways the brain develops.
2. Describe the newborn's sensory abilities.
3. Give examples of gross and fine motor skills during the first two years. Then consider the kinds of motor skills being developed during preschool and middle childhood.
4. What are some nutritional concerns during infancy? What is marasmus? Kwashiorkor?
5. Characterize physical growth in early childhood.
6. What are some nutritional concerns during the preschool (play) years? What happens to appetite from ages 2-6? What are the chief concerns during middle childhood in terms of nutrition?
7. Explain Piaget's theory of cognitive development for childhood. Include the substages of sensorimotor intelligence, preoperational intelligence (including animism, egocentrism, centration), and concrete operational intelligence (including identity, reversibility, conservation). Remember assimilation and accommodation.
8. Use Erikson's theory to explain psychosocial development from birth through childhood. Four stages or 'crises' comprise childhood (trust vs. mistrust etc.)
9. Explain language development from birth through childhood. Include ideas such as babbling, first words, holophrasic speech, overregularization, etc.
10. Recall Vygotsky's theory of sociocultural development. What is private speech?
11. Explain theories of language development.
12. Describe emotional development in the first year. Also, what is separation anxiety? Stranger wariness? When do these occur?
13. What is self-awareness? Theory of mind? When do these changes occur? Why are these significant for development?
14. Define temperament and goodness of fit.
15. Contrast styles of attachment.
16. Explain Baumrind's parenting styles. Describe Lemasters and Defrain's model. What impact does culture play in parenting styles?
17. What is the society/culture of children?
18. Define family capital. What is meant by the "hidden curriculum" in school?
19. Contrast theories of self from Cooley and Mead.
20. Discuss the impact of stress on development.
21. What is false self-training?
22. Summarize theories of gender role development.
23. Describe the developmental stages of stepfamilies.
24. What conclusion is made when examining family structure (intact, single-parent, etc.) and the impact structure has on children? What helps children make their way through stressful situations?
25. Explain Kohlberg's theory of moral development.
26. Compare aptitude and achievement tests. Explain Gardner's theory of multiple intelligences and Sternberg's triarchic theory of intelligences.
27. Characterize autism spectrum disorders and ADHD.
28. Review your notes over film/audio clips.

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# 5.R: Conclusion and References

## Conclusions

Middle childhood is a complex period of the life span. New understandings and social situations bring variety to children's lives as they form new strategies for the world ahead. We next turn our attention to adolescents.

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# 6: ADOLESCENCE


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# 6.1: Introduction to Adolescence

Adolescence is a period that begins with puberty and ends with the transition to adulthood (approximately ages 10–20). Physical changes associated with puberty are triggered by hormones. Cognitive changes include improvements in complex and abstract thought, as well as development that happens at different rates in distinct parts of the brain and increases adolescents' propensity for risky behavior because increases in sensation-seeking and reward motivation precede increases in cognitive control. Adolescents' relationships with parents go through a period of redefinition in which adolescents become more autonomous, and aspects of parenting, such as distal monitoring and psychological control, become more salient. Peer relationships are important sources of support and companionship during adolescence yet can also promote problem behaviors. Same-sex peer groups evolve into mixed-sex peer groups, and adolescents' romantic relationships tend to emerge from these groups. Identity formation occurs as adolescents explore and commit to different roles and ideological positions. Nationality, gender, ethnicity, socioeconomic status, religious background, sexual orientation, and genetic factors shape how adolescents behave and how others respond to them, and are sources of diversity in adolescence.

## Adolescence Defined

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[1]). 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[2]).




*Adolescence is often characterized as a period of transformation, primarily, in terms of physical, cognitive, and social-relational change. [Image: Lorenia]*

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## Contributors

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# 6.2: Adolescent Sleep

According to the National Sleep Foundation (NSF) (2016), adolescents need about 8 to 10 hours of sleep each night to function best. The most recent Sleep in America poll in 2006 indicated that adolescents between sixth and twelfth grade were not getting the recommended amount of sleep. On average adolescents only received 7 1/2 hours of sleep per night on school nights with younger adolescents getting more than older ones (8.4 hours for sixth graders and only 6.9 hours for those in twelfth grade). For the older adolescents, only about one in ten (9%) get an optimal amount of sleep, and they are more likely to experience negative consequences the following day. These include feeling too tired or sleepy, being cranky or irritable, falling asleep in school, having a depressed mood, and drinking caffeinated beverages (NSF, 2016). Additionally, they are at risk for substance abuse, car crashes, poor academic performance, obesity, and a weakened immune system (Weintraub, 2016).




Figure 6.7. Source.

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

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

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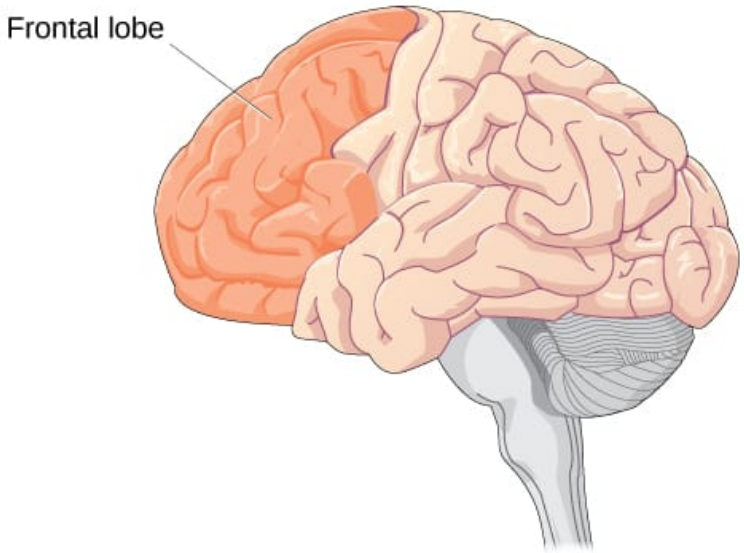
# 6.3: Physical Development

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).

The adolescent brain also remains under development. Up until puberty, brain cells continue to bloom in the frontal region. Adolescents engage in increased risk-taking behaviors and emotional outbursts possibly because the frontal lobes of their brains are still developing. Recall that this area is responsible for judgment, impulse control, and planning, and it is still maturing into early adulthood (Casey, Tottenham, Liston, & Durston, 2005).




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

Note

According to neuroscientist Jay Giedd in the Frontline video “Inside the Teenage Brain” (2013), “It’s sort of unfair to expect [teens] to have adult levels of organizational skills or decision-making before their brains are finished being built.” Watch this segment on “The Wiring of the Adolescent Brain” to find out more about the developing brain during adolescence.

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# 6.4: Adolescent Brain

The brain undergoes dramatic changes during adolescence. Although it does not get larger, it matures by becoming more interconnected and specialized (Giedd, 2015). The myelination and development of connections between neurons continues. This results in an increase in the white matter of the brain, and allows the adolescent to make significant improvements in their thinking and processing skills. Different brain areas become myelinated at different times. For example, the brain's language areas undergo myelination during the first 13 years. Completed insulation of the axons consolidates these language skills, but makes it more difficult to learn a second language. With greater myelination, however, comes diminished plasticity as a myelin coating inhibits the growth of new connections (Dobbs, 2012).

Even as the connections between neurons are strengthened, synaptic pruning occurs more than during childhood as the brain adapts to changes in the environment. This synaptic pruning causes the gray matter of the brain, or the cortex, to become thinner but more efficient (Dobbs, 2012). The corpus callosum, which connects the two hemispheres, continues to thicken allowing for stronger connections between brain areas. Additionally, the hippocampus becomes more strongly connected to the frontal lobes, allowing for greater integration of memory and experiences into our decision making.

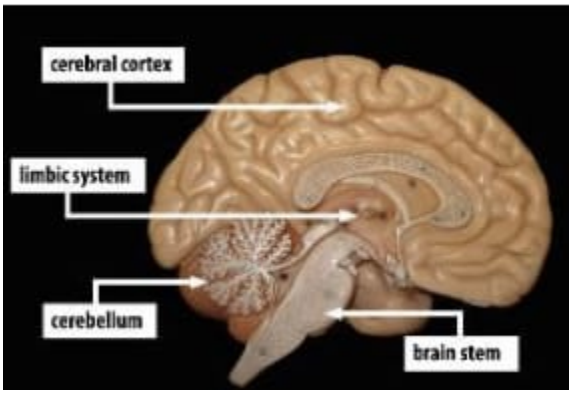


Figure 6.6: The limbic system.

The **limbic system**, *which regulates emotion and reward*, is linked to the hormonal changes that occur at puberty. The limbic system is also related to novelty seeking and a shift toward interacting with peers. In contrast, the **prefrontal cortex** *which is involved in the control of impulses, organization, planning, and making good decisions*, does not fully develop until the mid-20s. According to Giedd (2015) the significant aspect of the later developing prefrontal cortex and early development of the limbic system is the "mismatch" in timing between the two. The approximately ten years that separates the development of these two brain areas can result in risky behavior, poor decision making, and weak emotional control for the adolescent. When puberty begins earlier, this mismatch extends even further.

Teens often take more risks than adults and according to research it is because they weigh risks and rewards differently than adults do (Dobbs, 2012). For adolescents the brain's sensitivity to the neurotransmitter dopamine peaks, and **dopamine** *is involved in reward circuits* so the possible rewards outweighs the risks. Adolescents respond especially strongly to social rewards during activities, and they prefer the company of others their same age. In addition to dopamine, the adolescent brain is affected by **oxytocin** *which facilitates bonding and makes social connections more rewarding*. With both dopamine and oxytocin engaged, it is no wonder that adolescents seek peers and excitement in their lives that could end up actually harming them.

Because of all the changes that occur in the adolescent brain, the chances for abnormal development can occur, including mental illness. In fact, 50% of the mental illness occurs by the age 14 and 75% occurs by age 24 (Giedd, 2015). Additionally, during this period of development the adolescent brain is especially vulnerable to damage from drug exposure. For example, repeated exposure to marijuana can affect cellular activity in the endocannabinoid system. Consequently, adolescents are more sensitive to the effects of repeated marijuana exposure (Weir, 2015).

However, researchers have also focused on the highly adaptive qualities of the adolescent brain which allow the adolescent to move away from the family towards the outside world (Dobbs, 2012; Giedd, 2015). Novelty seeking and risk taking can generate positive outcomes including meeting new people and seeking out new situations. Separating from the family and moving into new relationships and different experiences are actually quite adaptive for society.

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# 6.5: High School Dropouts

The **status dropout rate** *refers to the percentage of 16 to 24 year-olds who are not enrolled in school and do not have high school credentials* (either a diploma or an equivalency credential such as a General Educational Development [GED] certificate). The dropout rate is based on sample surveys of the civilian, noninstitutionalized population, which excludes persons in prisons, persons in the military, and other persons not living in households. The dropout rate among high school students has declined from a rate of 12% in 1990, to 7% in 2013 (U.S. Department of Education, 2015). The rate is lower for Whites than for Blacks, and the rates for both Whites and Blacks are lower than the rate for Hispanics. However, the gap between Whites, Blacks, and Hispanics have narrowed (see Figure 6.11).

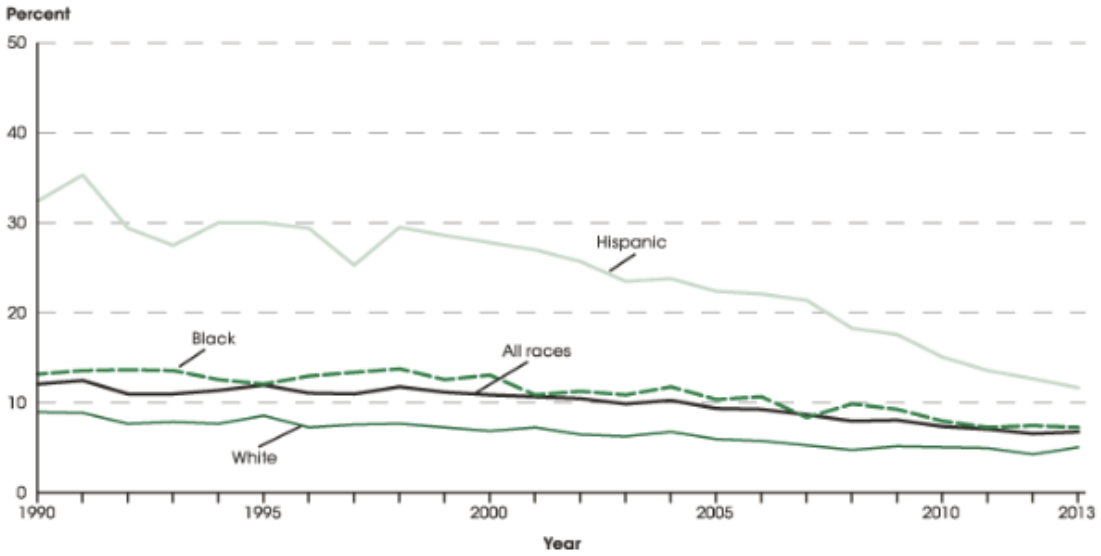



Figure 6.13: Status dropout rates of 16- through 24-year-olds, by race/ethnicity: 1990 through 2013. **SOURCE:** U.S. Department of Education, National Center for Education Statistics. (2015). *The Condition of Education 2015* (NCES 2015-144), Status Dropout Rates.

The dropout rate for males in 1990 was 12%, where it stayed until 2000. Thereafter the rate has dropped to 7% in 2013. The dropout rate for females in 1990 was 12%, where it dropped to 10% in 2000, and in 2013 was 6%. From 1997 until 2012 the rate for males was appreciably higher than for females, while in 2013 the gender difference was minimal (U.S. Department of Education, 2015).

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# 6.6: Cognitive Development

More complex thinking abilities emerge during adolescence. Some researchers suggest this is due to increases in processing speed and efficiency rather than as the result of an increase in mental capacity—in other words, due to improvements in existing skills rather than development of new ones (Bjorkland, 1987; Case, 1985). During adolescence, teenagers move beyond concrete thinking and become capable of abstract thought. Recall that Piaget refers to this stage as formal operational thought. Teen thinking is also characterized by the ability to consider multiple points of view, imagine hypothetical situations, debate ideas and opinions (e.g., politics, religion, and justice), and form new ideas. In addition, it's not uncommon for adolescents to question authority or challenge established societal norms.

Early in adolescence, changes in the brain's dopaminergic system contribute to increases in adolescents' sensation-seeking and reward motivation. Later in adolescence, the brain's cognitive control centers in the prefrontal cortex develop, increasing adolescents' self-regulation and future orientation. The difference in timing of the development of these different regions of the brain contributes to more risk taking during middle adolescence because adolescents are motivated to seek thrills that sometimes come from risky behavior, such as reckless driving, smoking, or drinking, and have not yet developed the cognitive control to resist impulses or focus equally on the potential risks (Steinberg, 2008[1]). One of the world's leading experts on adolescent development, Laurence Steinberg, likens this to engaging a powerful engine before the braking system is in place. The result is that adolescents are more prone to risky behaviors than are children or adults.

Cognitive empathy, also known as theory-of-mind (which we discussed earlier with regard to egocentrism), relates to the ability to take the perspective of others and feel concern for others (Shamay-Tsoory, Tomer, & Aharon-Peretz, 2005). Cognitive empathy begins to increase in adolescence and is an important component of social problem solving and conflict avoidance. According to one longitudinal study, levels of cognitive empathy begin rising in girls around 13 years old, and around 15 years old in boys (Van der Graaff et al., 2013). Teens who reported having supportive fathers with whom they could discuss their worries were found to be better able to take the perspective of others (Miklikowska, Duriez, & Soenens, 2011).



*Teenage thinking is characterized by the ability to reason logically and solve hypothetical problems such as how to design, plan, and build a structure. (credit: U.S. Army RDECOM)*

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# 6.7: Social Development

## Psychosocial Development

Adolescents continue to refine their sense of self as they relate to others. Erikson referred to the task of the adolescent as one of identity versus role confusion. Thus, in Erikson's view, an adolescent's main questions are "Who am I?" and "Who do I want to be?" Some adolescents adopt the values and roles that their parents expect for them. Other teens develop identities that are in opposition to their parents but align with a peer group. This is common as peer relationships become a central focus in adolescents' lives.

As adolescents work to form their identities, they pull away from their parents, and the peer group becomes very important (Shanahan, McHale, Osgood, & Crouter, 2007). Despite spending less time with their parents, most teens report positive feelings toward them (Moore, Guzman, Hair, Lippman, & Garrett, 2004). Warm and healthy parent-child relationships have been associated with positive child outcomes, such as better grades and fewer school behavior problems, in the United States as well as in other countries (Hair et al., 2005).

It appears that most teens don't experience adolescent storm and stress to the degree once famously suggested by G. Stanley Hall, a pioneer in the study of adolescent development. Only small numbers of teens have major conflicts with their parents (Steinberg & Morris, 2001), and most disagreements are minor. For example, in a study of over 1,800 parents of adolescents from various cultural and ethnic groups, Barber (1994) found that conflicts occurred over day-to-day issues such as homework, money, curfews, clothing, chores, and friends. These types of arguments tend to decrease as teens develop (Galambos & Almeida, 1992).

## Social Changes

Parents. Although peers take on greater importance during adolescence, family relationships remain important too. One of the key changes during adolescence involves a renegotiation of parent–child relationships. As adolescents strive for more independence and autonomy during this time, different aspects of parenting become more salient. For example, parents' distal supervision and monitoring become more important as adolescents spend more time away from parents and in the presence of peers. Parental monitoring encompasses a wide range of behaviors such as parents' attempts to set rules and know their adolescents' friends, activities, and whereabouts, in addition to adolescents' willingness to disclose information to their parents (Stattin & Kerr, 2000[1]). *Psychological control*, which involves manipulation and intrusion into adolescents' emotional and cognitive world through invalidating adolescents' feelings and pressuring them to think in particular ways (Barber, 1996[2]), is another aspect of parenting that becomes more salient during adolescence and is related to more problematic adolescent adjustment.

## Peers

As children become adolescents, they usually begin spending more time with their peers and less time with their families, and these peer interactions are increasingly unsupervised by adults. Children's notions of friendship often focus on shared activities, whereas adolescents' notions of friendship increasingly focus on intimate exchanges of thoughts and feelings. During adolescence, peer groups evolve from primarily single-sex to mixed-sex. Adolescents within a peer group tend to be similar to one another in behavior and attitudes, which has been explained as being a function of *homophily* (adolescents who are similar to one another choose to spend time together in a "birds of a feather flock together" way) and influence (adolescents who spend time together shape each other's behavior and attitudes). One of the most widely studied aspects of adolescent peer influence is known as *deviant peer contagion* (Dishion & Tipsord, 2011[3]), which is the process by which peers reinforce problem behavior by laughing or showing other signs of approval that then increase the likelihood of future problem behavior.

Peers can serve both positive and negative functions during adolescence. Negative peer pressure can lead adolescents to make riskier decisions or engage in more problematic behavior than they would alone or in the presence of their family. For example, adolescents are much more likely to drink alcohol, use drugs, and commit crimes when they are with their friends than when they are alone or with their family. However, peers also serve as an important source of social support and companionship during adolescence, and adolescents with positive peer relationships are happier and better adjusted than those who are socially isolated or have conflictual peer relationships.



*Crowds refer to different collections of people, like the "theater kids" or the "environmentalists." In a way, they are kind of like clothing brands that label the people associated with that crowd. [Image: Garry Knight]*

*Crowds* are an emerging level of peer relationships in adolescence. In contrast to friendships (which are reciprocal dyadic relationships) and cliques (which refer to groups of individuals who interact frequently), crowds are characterized more by shared reputations or images than actual interactions (Brown & Larson, 2009[4]). These crowds reflect different prototypic identities (such as jocks or brains) and are often linked with adolescents' social status and peers' perceptions of their values or behaviors.

## Romantic Relationships

Adolescence is the developmental period during which romantic relationships typically first emerge. Initially, same-sex peer groups that were common during childhood expand into mixed-sex peer groups that are more characteristic of adolescence. Romantic relationships often form in the context of these mixed-sex peer groups (Connolly, Furman, & Konarski, 2000[5]). Although romantic relationships during adolescence are often short-lived rather than long-term committed partnerships, their importance should not be minimized. Adolescents spend a great deal of time focused on romantic relationships, and their positive and negative emotions are more tied to romantic relationships (or lack thereof) than to friendships, family relationships, or school (Furman & Shaffer, 2003[6]). Romantic relationships contribute to adolescents' identity formation, changes in family and peer relationships, and adolescents' emotional and behavioral adjustment.

Furthermore, romantic relationships are centrally connected to adolescents' emerging sexuality. Parents, policymakers, and researchers have devoted a great deal of attention to adolescents' sexuality, in large part because of concerns related to sexual intercourse, contraception, and preventing teen pregnancies. However, sexuality involves more than this narrow focus. For example, adolescence is often when individuals who are lesbian, gay, bisexual, or transgender come to perceive themselves as such (Russell, Clarke, & Clary, 2009[7]). Thus, romantic relationships are a domain in which adolescents experiment with new behaviors and identities.

## Behavioral And Psychological Adjustment

### Identity Formation

Theories of adolescent development often focus on identity formation as a central issue. For example, in Erikson's (1968[8]) classic theory of developmental stages, identity formation was highlighted as the primary indicator of successful development during adolescence (in contrast to role confusion, which would be an indicator of not successfully meeting the task of adolescence). Marcia (1966[9]) described identify formation during adolescence as involving both decision points and commitments with respect to ideologies (e.g., religion, politics) and occupations. He described four identity statuses: foreclosure,

identity diffusion, moratorium, and identity achievement. *Foreclosure* occurs when an individual commits to an identity without exploring options. *Identity diffusion* occurs when adolescents neither explore nor commit to any identities. *Moratorium* is a state in which adolescents are actively exploring options but have not yet made commitments. *Identity achievement* occurs when individuals have explored different options and then made identity commitments. Building on this work, other researchers have investigated more specific aspects of identity. For example, Phinney (1989[10]) proposed a model of ethnic identity development that included stages of unexplored ethnic identity, ethnic identity search, and achieved ethnic identity.

## Aggression and Antisocial Behavior

Several major theories of the development of antisocial behavior treat adolescence as an important period. Patterson's (1982[11]) early versus late starter model of the development of aggressive and antisocial behavior distinguishes youths whose antisocial behavior begins during childhood (early starters) versus adolescence (late starters). According to the theory, early starters are at greater risk for long-term antisocial behavior that extends into adulthood than are late starters. Late starters who become antisocial during adolescence are theorized to experience poor parental monitoring and supervision, aspects of parenting that become more salient during adolescence. Poor monitoring and lack of supervision contribute to increasing involvement with deviant peers, which in turn promotes adolescents' own antisocial behavior. Late starters desist from antisocial behavior when changes in the environment make other options more appealing. Similarly, Moffitt's (1993[12]) life-course persistent versus adolescent-limited model distinguishes between antisocial behavior that begins in childhood versus adolescence. Moffitt regards adolescent-limited antisocial behavior as resulting from a "maturity gap" between adolescents' dependence on and control by adults and their desire to demonstrate their freedom from adult constraint. However, as they continue to develop, and legitimate adult roles and privileges become available to them, there are fewer incentives to engage in antisocial behavior, leading to desistance in these antisocial behaviors.



*Early, antisocial behavior leads to befriending others who also engage in antisocial behavior, which only perpetuates the downward cycle of aggression and wrongful acts. [Image: Philippe Put]*

## Anxiety and Depression

Developmental models of anxiety and depression also treat adolescence as an important period, especially in terms of the emergence of gender differences in prevalence rates that persist through adulthood (Rudolph, 2009[13]). Starting in early adolescence, compared with males, females have rates of anxiety that are about twice as high and rates of depression that are 1.5 to 3 times as high (American Psychiatric Association, 2013[14]). Although the rates vary across specific anxiety and depression diagnoses, rates for some disorders are markedly higher in adolescence than in childhood or adulthood. For example, prevalence rates for specific phobias are about 5% in children and 3%–5% in adults but 16% in adolescents. Anxiety and depression are particularly concerning because suicide is one of the leading causes of death during adolescence. Developmental models focus on interpersonal contexts in both childhood and adolescence that foster depression and anxiety (e.g., Rudolph,

2009[15]). Family adversity, such as abuse and parental psychopathology, during childhood sets the stage for social and behavioral problems during adolescence. Adolescents with such problems generate stress in their relationships (e.g., by resolving conflict poorly and excessively seeking reassurance) and select into more maladaptive social contexts (e.g., "misery loves company" scenarios in which depressed youths select other depressed youths as friends and then frequently co-ruminate as they discuss their problems, exacerbating negative affect and stress). These processes are intensified for girls compared with boys because girls have more relationship-oriented goals related to intimacy and social approval, leaving them more vulnerable to disruption in these relationships. Anxiety and depression then exacerbate problems in social relationships, which in turn contribute to the stability of anxiety and depression over time.

### Academic Achievement

Adolescents spend more waking time in school than in any other context (Eccles & Roeser, 2011[16]). Academic achievement during adolescence is predicted by interpersonal (e.g., parental engagement in adolescents' education), intrapersonal (e.g., intrinsic motivation), and institutional (e.g., school quality) factors. Academic achievement is important in its own right as a marker of positive adjustment during adolescence but also because academic achievement sets the stage for future educational and occupational opportunities. The most serious consequence of school failure, particularly dropping out of school, is the high risk of unemployment or underemployment in adulthood that follows. High achievement can set the stage for college or future vocational training and opportunities.

## Diversity

Adolescent development does not necessarily follow the same pathway for all individuals. Certain features of adolescence, particularly with respect to biological changes associated with puberty and cognitive changes associated with brain development, are relatively universal. But other features of adolescence depend largely on circumstances that are more environmentally variable. For example, adolescents growing up in one country might have different opportunities for risk taking than adolescents in a different country, and supports and sanctions for different behaviors in adolescence depend on laws and values that might be specific to where adolescents live. Likewise, different cultural norms regarding family and peer relationships shape adolescents' experiences in these domains. For example, in some countries, adolescents' parents are expected to retain control over major decisions, whereas in other countries, adolescents are expected to begin sharing in or taking control of decision making.

Even within the same country, adolescents' gender, ethnicity, immigrant status, religion, sexual orientation, socioeconomic status, and personality can shape both how adolescents behave and how others respond to them, creating diverse developmental contexts for different adolescents. For example, early puberty (that occurs before most other peers have experienced puberty) appears to be associated with worse outcomes for girls than boys, likely in part because girls who enter puberty early tend to associate with older boys, which in turn is associated with early sexual behavior and substance use. For adolescents who are ethnic or sexual minorities, discrimination sometimes presents a set of challenges that nonminorities do not face.

Finally, genetic variations contribute an additional source of diversity in adolescence. Current approaches emphasize gene X environment interactions, which often follow a *differential susceptibility* model (Belsky & Pluess, 2009[17]). That is, particular genetic variations are considered riskier than others, but genetic variations also can make adolescents more or less susceptible to environmental factors. For example, the association between the CHRM2genotype and adolescent externalizing behavior (aggression and delinquency)has been found in adolescents whose parents are low in monitoring behaviors (Dick et al., 2011[18]). Thus, it is important to bear in mind that individual differences play an important role in adolescent development.

# Conclusions

Adolescent development is characterized by biological, cognitive, and social changes. Social changes are particularly notable as adolescents become more autonomous from their parents, spend more time with peers, and begin exploring romantic relationships and sexuality. Adjustment during adolescence is reflected in identity formation, which often involves a period of exploration followed by commitments to particular identities. Adolescence is characterized by risky behavior, which is made more likely by changes in the brain in which reward-processing centers develop more rapidly than cognitive control systems, making adolescents more sensitive to rewards than to possible negative consequences. Despite these generalizations, factors such as country of residence, gender, ethnicity, and sexual orientation shape development in ways that lead to diversity of experiences across adolescence.

## Outside Resources

1. **Podcasts**: Society for Research on Adolescence website with links to podcasts on a variety of topics related to adolescent development
2. **Study:** Add Health website on one of the biggest longitudinal studies of adolescence to date
3. **Video:** A selection of TED talks on adolescent brain development
4. **Web:** UNICEF website on adolescents around the world

### DISCUSSION QUESTIONS

1. What can parents do to promote their adolescents' positive adjustment?
2. In what ways do changes in brain development and cognition make adolescents particularly susceptible to peer influence?
3. How could interventions designed to prevent or reduce adolescents' problem behavior be developed to take advantage of what we know about adolescent development?
4. Reflecting on your own adolescence, provide examples of times when you think your experience was different from those of your peers as a function of something unique about you.
5. In what ways was your experience of adolescence different from your parents' experience of adolescence? How do you think adolescence may be different 20 years from now?

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# 6.8: Psychological Development in Adolescence

**Learning Objectives: Psychosocial Development in Adolescence**

- Describe the changes in self-concept and self-esteem in adolescence
- Summarize Erikson's fifth psychosocial task of identity versus role confusion
- Describe Marcia's four identity statuses
- Summarize the three stages of ethnic identity development
- Describe the parent-teen relationship
- Describe the role of peers
- Describe dating relationships

## Self-concept and Self-esteem in Adolescence

In adolescence, teens continue to develop their self-concept. Their ability to think of the possibilities and to reason more abstractly may explain the further differentiation of the self during adolescence. However, the teen's understanding of self is often full of contradictions. Young teens may see themselves as outgoing but also withdrawn, happy yet often moody, and both smart and completely clueless (Harter, 2012). These contradictions, along with the teen's growing recognition that their personality and behavior seems to change depending on who they are with or where they are, can lead the young teen to feel like a fraud. With their parents they may seem angrier and sullen, with their friends they are more outgoing and goofy, and at work they are quiet and cautious. "Which one is really me?" may be the refrain of the young teenager. Harter (2012) found that adolescents emphasize traits such as being friendly and considerate more than do children, highlighting their increasing concern about how others may see them. Harter also found that older teens add values and moral standards to their self-descriptions.

As self-concept differentiates, so too does self-esteem. In addition to the academic, social, appearance, and physical/athletic dimensions of self-esteem in middle and late childhood, teens also add perceptions of their competency in romantic relationships, on the job, and in close friendships (Harter, 2006). Self-esteem often drops when children transition from one school setting to another, such as shifting from elementary to middle school, or junior high to high school (Ryan, Shim, & Makara, 2013). These drops are usually temporary, unless there are additional stressors such as parental conflict, or other family disruptions (De Wit, Karioja, Rye, & Shain, 2011). Self-esteem rises from mid to late adolescence for most teenagers, especially if they feel competent in their peer relationships, their appearance, and athletic abilities (Birkeland, Melkivik, Holsen, & Wold, 2012).

## Erikson: Identity vs. Role Confusion

Erikson believed that the primary psychosocial task of adolescence was establishing an identity. Teens struggle with the question "Who am I?" This includes questions regarding their appearance, vocational choices and career aspirations, education, relationships, sexuality, political and social views, personality, and interests. Erikson saw this as a period of confusion and experimentation regarding identity and one's life path. During adolescence we experience **psychological moratorium**, *where teens put on hold commitment to an identity while exploring the options*. The culmination of this exploration is a more coherent view of oneself. Those who are unsuccessful at resolving this stage may either withdraw further into social isolation or become lost in the crowd. However, more recent research, suggests that few leave this age period with identity achievement, and that most identity formation occurs during young adulthood (C t , 2006).

Expanding on Erikson's theory, James Marcia (2010) identified four identity statuses that represent the four possible combinations of the dimension of commitment and exploration (see Table 6.2).

*Table 6.2 Marcia's Four Identity Statuses*

| Commitment to an Identity | Exploration | |
|---|---|---|
| | Absent | Present |
| Absent | Identity Diffusion | Identity Moratorium |

| | | | |
|---|---|---|---|
| | Present | Identity Foreclosure | Identity Achievement |

The least mature status, and one common in many children, is identity diffusion. **Identity diffusion** *is a status that characterizes those who have neither explored the options, nor made a commitment to an identity*. Those who persist in this identity may drift aimlessly with little connection to those around them or have little sense of purpose in life.

Those in **identity foreclosure** *have made a commitment to an identity without having explored the options*. Some parents may make these decisions for their children and do not grant the teen the opportunity to make choices. In other instances, teens may strongly identify with parents and others in their life and wish to follow in their footsteps.

**Identity moratorium** *is a status that describes those who are activity exploring in an attempt to establish an identity, but have yet to have made any commitment*. This can be an anxious and emotionally tense time period as the adolescent experiments with different roles and explores various beliefs. Nothing is certain and there are many questions, but few answers.

**Identity achievement** *refers to those who after exploration have made a commitment*. This is a long process and is not often achieved by the end of adolescence.

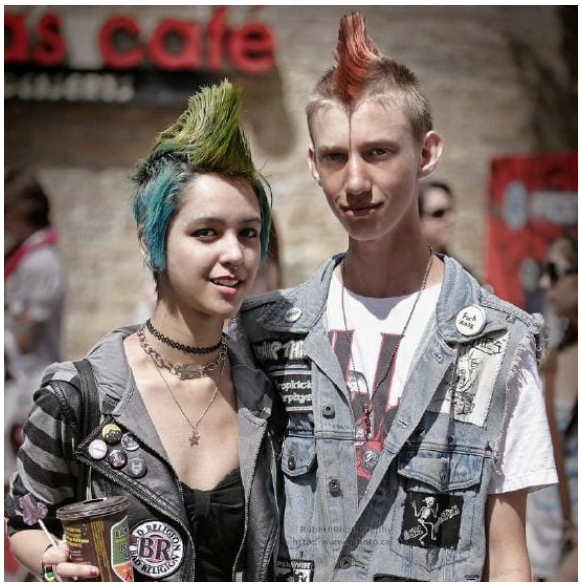



Figure 6.17. Source.

During high school and the college years, teens and young adults move from identity diffusion and foreclosure toward moratorium and achievement. The biggest gains in the development of identity are in college, as college students are exposed to a greater variety of career choices, lifestyles, and beliefs. This is likely to spur on questions regarding identity. A great deal of the identity work we do in adolescence and young adulthood is about values and goals, as we strive to articulate a personal vision or dream for what we hope to accomplish in the future (McAdams, 2013).

Developmental psychologists have researched several different areas of identity development and some of the main areas include:

**Religious identity:** The religious views of teens are often similar to that of their families (Kim- Spoon, Longo, & McCullough, 2012). Most teens may question specific customs, practices, or ideas in the faith of their parents, but few completely reject the religion of their families.

**Political identity:** The political ideology of teens is also influenced by their parents' political beliefs. A new trend in the 21st century is a decrease in party affiliation among adults. Many adults do not align themselves with either the democratic or republican party, but view themselves as more of an "independent". Their teenage children are often following suit or become more apolitical (C t , 2006).

**Vocational identity:** While adolescents in earlier generations envisioned themselves as working in a particular job, and often worked as an apprentice or part-time in such occupations as teenagers, this is rarely the case today. Vocational identity takes longer to develop, as most of today's occupations require specific skills and knowledge that will require additional education or are acquired on the job itself. In addition, many of the jobs held by teens are not in occupations that most teens will seek as

adults.

**Gender identity:** This is also becoming an increasingly prolonged task as attitudes and norms regarding gender keep changing. The roles appropriate for males and females are evolving. Some teens may foreclose on a gender identity as a way of dealing with this uncertainty, and they may adopt more stereotypic male or female roles (Sinclair & Carlsson, 2013).



Figure 6.18. Source.

**Ethnic identity** *refers to how people come to terms with who they are based on their ethnic or racial ancestry.* "The task of ethnic identity formation involves sorting out and resolving positive and negative feelings and attitudes about one's own ethnic group and about other groups and identifying one's place in relation to both" (Phinney, 2006, p. 119). When groups differ in status in a culture, those from the non-dominant group have to be cognizant of the customs and values of those from the dominant culture. The reverse is rarely the case. This makes ethnic identity far less salient for members of the dominant culture. In the United States, those of European ancestry engage in less exploration of ethnic identity, than do those of non-European ancestry (Phinney, 1989). However, according to the U.S. Census (2012) more than 40% of Americans under the age of 18 are from ethnic minorities. For many ethnic minority teens, discovering one's ethnic identity is an important part of identity formation.

Phinney's model of ethnic identity formation is based on Erikson's and Marcia's model of identity formation (Phinney, 1990; Syed & Juang, 2014). Through the process of exploration and commitment, individual's come to understand and create an ethic identity. Phinney suggests three stages or statuses with regard to ethnic identity:

1. **Unexamined Ethnic Identity:** Adolescents and adults who have not been exposed to ethnic identity issues may be in the first stage, unexamined ethnic identity. This is often characterized with a preference for the dominant culture, or where the individual has given little thought to the question of their ethnic heritage. This is similar to diffusion in Marcia's model of identity. Included in this group are also those who have adopted the ethnicity of their parents and other family members with little thought about the issues themselves, similar to Marcia's foreclosure status (Phinney, 1990).
2. **Ethnic Identity Search**: Adolescents and adults who are exploring the customs, culture, and history of their ethnic group are in the ethnic identity search stage, similar to Marcia's moratorium status (Phinney, 1990). Often some event "awakens" a teen or adult to their ethnic group; either a personal experience with prejudice, a highly profiled case in the media, or even a more positive event that recognizes the contribution of someone from the individual's ethnic group. Teens and adults in this stage will immerse themselves in their ethnic culture. For some, "it may lead to a rejection of the values of the dominant culture" (Phinney, 1990, p. 503).
3. **Achieved Ethnic Identity:** Those who have actively explored their culture are likely to have a deeper appreciation and understanding of their ethnic heritage, leading to progress toward an achieved ethnic identity (Phinney, 1990). An achieved ethnic identity does not necessarily imply that the individual is highly involved in the customs and values of their ethnic culture. One can be confident in their ethnic identity without wanting to maintain the language or other customs.

The development of ethnic identity takes time, with about 25% of tenth graders from ethnic minority backgrounds having explored and resolved the issues (Phinney, 1989). The more ethnically homogeneous the high school, the less identity exploration and achievement (Umana- Taylor, 2003). Moreover, even in more ethnically diverse high schools, teens tend to spend more time with

their own group, reducing exposure to other ethnicities. This may explain why, for many, college becomes the time of ethnic identity exploration. “[The] transition to college may serve as a consciousness-raising experience that triggers exploration” (Syed & Azmitia, 2009, p. 618).

It is also important to note that those who do achieve ethnic identity may periodically reexamine the issues of ethnicity. This cycling between exploration and achievement is common not only for ethnic identity formation, but in other aspects of identity development (Grotevant, 1987) and is referred to as **MAMA cycling** or *moving back and forth between moratorium and achievement*. **Bicultural/Multiracial Identity:** Ethnic minorities must wrestle with the question of how, and to what extent, they will identify with the culture of the surrounding society and with the culture of their family. Phinney (2006) suggests that people may handle it in different ways. Some may keep the identities separate, others may combine them in some way, while others may reject some of them. **Bicultural identity** means *the individual sees himself or herself as part of both the ethnic minority group and the larger society*. Those who are **multiracial**, that is *whose parents come from two or more ethnic or racial groups,* have a more challenging task. In some cases their appearance may be ambiguous. This can lead to others constantly asking them to categorize themselves. Phinney (2006) notes that the process of identity formation may start earlier and take longer to accomplish in those who are not mono-racial.

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# 6.9: Adolescents' Relationships

## Parents and Teens: Autonomy and Attachment

While most adolescents get along with their parents, they do spend less time with them (Smetana, 2011). This decrease in the time spent with families may be a reflection of a *teenager's greater desire for independence* or **autonomy.** It can be difficult for many parents to deal with this desire for autonomy. However, it is likely adaptive for teenagers to increasingly distance themselves and establish relationships outside of their families in preparation for adulthood. This means that both parents and teenagers need to strike a balance between autonomy, while still maintaining close and supportive familial relationships.

Children in middle and late childhood are increasingly granted greater freedom regarding moment-to-moment decision making. This continues in adolescence, as teens are demanding greater control in decisions that affect their daily lives. This can increase conflict between parents and their teenagers. For many adolescents this conflict centers on chores, homework, curfew, dating, and personal appearance. These are all things many teens believe they should manage that parents previously had considerable control over. Teens report more conflict with their mothers, as many mothers believe they should still have some control over many of these areas, yet often report their mothers to be more encouraging and supportive (Costigan, Cauce, & Etchison, 2007). As teens grow older, more compromise is reached between parents and teenagers (Smetana, 2011). Parents are more controlling of daughters, especially early maturing girls, than they are sons (Caspi, Lynam, Moffitt, & Silva, 1993). In addition, culture and ethnicity also play a role in how restrictive parents are with the daily lives of their children (Chen, Vansteenkiste, Beyers, Soensens, & Van Petegem, 2013).

Having supportive, less conflict ridden relationships with parents also benefits teenagers. Research on attachment in adolescence find that teens who are still securely attached to their parents have less emotional problems (Rawatlal, Kliewer & Pillay, 2015), are less likely to engage in drug abuse and other criminal behaviors (Meeus, Branje & Overbeek, 2004), and have more positive peer relationships (Shomaker & Furman, 2009).

## Peers

As children become adolescents, they usually begin spending more time with their peers and less time with their families, and these peer interactions are increasingly unsupervised by adults. Children's notions of friendship often focus on shared activities, whereas adolescents' notions of

friendship increasingly focus on intimate exchanges of thoughts and feelings. During adolescence, peer groups evolve from primarily single-sex to mixed-sex. Adolescents within a peer group tend to be similar to one another in behavior and attitudes, which has been explained as a function of **homophily**, that is, *adolescents who are similar to one another choose to spend time together in a "birds of a feather flock together" way*. Adolescents who spend time together also shape each other's behavior and attitudes.

Peers can serve both positive and negative functions during adolescence. Negative peer pressure can lead adolescents to make riskier decisions or engage in more problematic behavior than they would alone or in the presence of their family. For example, adolescents are much more likely to drink alcohol, use drugs, and commit crimes when they are with their friends than when they are alone or with their family. One of the most widely studied aspects of adolescent peer influence is known as **deviant peer contagion** (Dishion & Tipsord, 2011), *which is the process by which peers reinforce problem behavior by laughing or showing other signs of approval that then increase the likelihood of future problem behavior*.

However, peers also serve as an important source of social support and companionship during adolescence, and adolescents with positive peer relationships are happier and better adjusted than those who are socially isolated or have conflictual peer relationships.

Crowds are an emerging level of peer relationships in adolescence. In contrast to friendships, which are reciprocal dyadic relationships, and **cliques**, which *refer to groups of individuals who interact frequently*, **crowds** are *characterized more by shared reputations or images than actual interactions* (Brown & Larson, 2009). These crowds reflect different prototypic identities, such as jocks or brains, and are often linked with adolescents' social status and peers' perceptions of their values or behaviors.



Figure 6.19. Crowds refer to different collections of people, like the “theater kids” or the “environmentalists.” In a way, they are kind of like clothing brands that label the people associated with that crowd. [Image: Garry Knight]

## Romantic Relationships

Adolescence is the developmental period during which romantic relationships typically first emerge. By the end of adolescence, most American teens have had at least one romantic relationship (Dolgin, 2011). However, culture does play a role as Asian Americans and Latinas are less likely to date than other ethnic groups (Connolly, Craig, Goldberg, & Pepler, 2004). Dating serves many purposes for teens, including having fun, companionship, status, socialization, sexual experimentation, intimacy, and partner selection for those in late adolescence (Dolgin, 2011).

There are several stages in the dating process beginning with engaging in mixed-sex group activities in early adolescence (Dolgin, 2011). The same-sex peer groups that were common during childhood expand into mixed-sex peer groups that are more characteristic of adolescence. Romantic relationships often form in the context of these mixed-sex peer groups (Connolly, Furman, & Konarski, 2000). Interacting in mixed-sex groups is easier for teens as they are among a supportive group of friends, can observe others interacting, and are kept safe from a too early intimate relationship. By middle adolescence teens are engaging in brief, casual dating or in group dating with established couples (Dolgin, 2011). Then in late adolescence dating involves exclusive, intense relationships. These relationships tend to be long-lasting and continue for a year or longer, however, they may also interfere with friendships.



Figure 6.20. Source.

Although romantic relationships during adolescence are often short-lived rather than long-term committed partnerships, their importance should not be minimized. Adolescents spend a great deal of time focused on romantic relationships, and their positive and negative emotions are more tied to romantic relationships, or lack thereof, than to friendships, family relationships, or school (Furman & Shaffer, 2003). Romantic relationships contribute to adolescents’ identity formation, changes in family and peer relationships, and emotional and behavioral adjustment.

Furthermore, romantic relationships are centrally connected to adolescents' emerging sexuality. Parents, policymakers, and researchers have devoted a great deal of attention to adolescents' sexuality, in large part because of concerns related to sexual intercourse, contraception, and preventing teen pregnancies. However, sexuality involves more than this narrow focus. For example, adolescence is often when individuals who are lesbian, gay, bisexual, or transgender come to perceive themselves as such (Russell, Clarke, & Clary, 2009). Thus, romantic relationships are a domain in which adolescents experiment with new behaviors and identities.

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# 6.10: Adolescent Sexual Activity

By about age ten or eleven, most children experience increased sexual attraction to others that affects social life, both in school and out (McClintock & Herdt, 1996). By the end of high school, more than half of boys and girls report having experienced sexual intercourse at least once, though it is hard to be certain of the proportion because of the sensitivity and privacy of the information. (Center for Disease Control, 2004; Rosenbaum, 2006).

**Adolescent Pregnancy:** Although adolescent pregnancy rates have declined since 1991, teenage birth rates in the United States are higher than most developed countries.

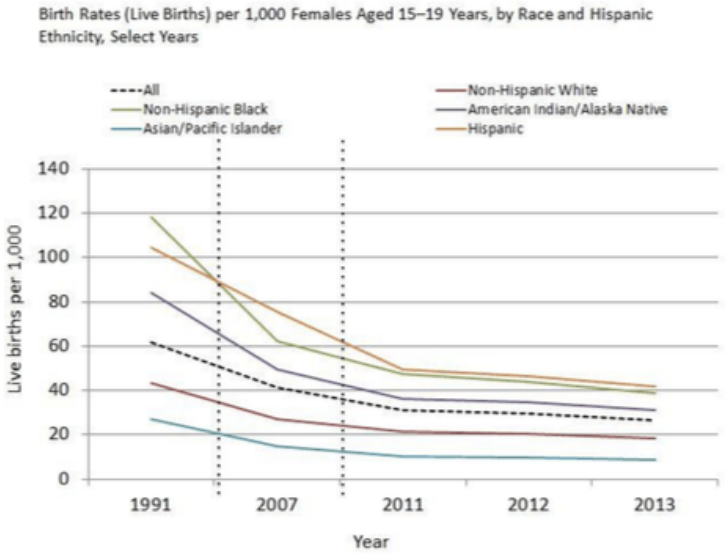



Figure 6.8. Source.

In 2014 females aged 15–19 years experienced a birth rate of 24.2 per 1,000 women. This is a drop of 9% from 2013. Birth rates fell 11% for those aged 15–17 years and 7% for 18–19 year-olds. It appears that adolescents seem to be less sexually active than in previous years, and those who are sexually active seem to be using birth control (CDC, 2016). Figure 6.8 shows the birth rates (live births) per 1,000 females aged 15–19 years for all races and Hispanic ethnicity in the United States, 1991, 2007, 2011, 2012, & 2013.

**Risk Factors for Adolescent Pregnancy:** Miller, Benson, and Galbraith (2001) found that parent/child closeness, parental supervision, and parents' values against teen intercourse (or unprotected intercourse) decreased the risk of adolescent pregnancy. In contrast, residing in disorganized/dangerous neighborhoods, living in a lower SES family, living with a single parent, having older sexually active siblings or pregnant/parenting teenage sisters, early puberty, and being a victim of sexual abuse place adolescents at an increased risk of adolescent pregnancy.

**Consequences of Adolescent Pregnancy:** After the child is born life can be difficult for a teenage mother. Only 40% of teenagers who have children before age 18 graduate from high school. Without a high school degree her job prospects are limited and economic independence is difficult. Teen mothers are more likely to live in poverty, and more than 75% of all unmarried teen mother receive public assistance within 5 years of the birth of their first child. Approximately, 64% of children born to an unmarried teenage high-school dropout live in poverty. Further, a child born to a teenage mother is 50% more likely to repeat a grade in school and is more likely to perform poorly on standardized tests and drop out before finishing high school (March of Dimes, 2012).

Research analyzing the age that men father their first child and how far they complete their education have been summarized by the Pew Research Center (2015) and reflect the research for females. Among dads ages 22 to 44, 70% of those with less than a high school diploma say they fathered their first child before the age of 25. In comparison, less than half (45%) of fathers with some college experience became dads by that age. Additionally, becoming a young father occurs much less for those with a bachelor's degree or higher as just 14% had their first child prior to age 25. Like men, women with more education are likely to

be older when they become mothers.

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# 6.11: Adolescence Lecture

YouTube Video

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## Lecture Transcript

Adolescence is a period of transition from childhood to adulthood. It includes many physical, cognitive, and psychosocial changes. We first explore physical development.

Puberty is a period of rapid physical growth and sexual maturation that occurs during adolescence. These changes begin somewhere between ages 8 and 14. Girls begin puberty at around 10 years of age. Boys begin about a year and a half later. These changes take around 3 to 4 years for completion.

Adolescents experience an overall physical growth spurt. The growth proceeds from the extremities toward the torso. This is referred to as distal-proximal development. In other words, you may see the hands grow, then the arms, and finally the torso. The overall physical growth spurt means increases of about 10-11 inches in height and 50 to 75 pounds in weight. The head begins to grow sometime after the feet have gone through their period of growth. Growth of the head is preceded by growth of the ears, nose, and lips, however. As the torso grows, so does the internal organs. The heart and lungs experience dramatic growth during this period. Sweat, odor, and oil glands become more active. Teenagers in the United States spend a lot of money on deodorants and acne medications as a result.

The brain also undergoes dramatic change during adolescence. The prefrontal cortex, located behind the forehead, is a part of the brain that helps with judgment, planning, and strategizing. This grows in early adolescence. The cerebellum also grows during adolescence. Watch the film assigned in this lesson, Inside the Teenage Brain, for more detail.

Sexual maturation is another change we undergo during adolescence. Changes are divided into two categories: primary sex characteristics are changes in the reproductive organs. For males, primary characteristics include growth of the testes, penis, scrotum, and the first ejaculation of semen or spermarche. This occurs between 11-15 years of age.

Secondary characteristics are those not directly linked to reproduction but changes that signal that a male is becoming sexually mature. Shoulders become broader, the areola or area around the nipples become larger. There is some temporary breast development due to hormonal changes in many boys, typically around 14 years of age. The voice becomes lower as the larynx grows. Hair becomes more coarse and darker. And hair in the pubic area, under the arms, and on the face develops.

In females, primary characteristics include growth of the uterus and the first menstrual period or menarche. Stress and higher percentage of body fat can bring menstruation at younger ages.

Many of the secondary characteristics are the same for boys and girls. Breast development begins at around age 10 and full development takes several years. Hips broaden and legs get larger. The voice becomes lower as the larynx grows, just as it does in males. Although, it is often less noticeable in females. Hair becomes darker and coarser. Pubic and underarm hair develops as well.

There is currently a lot of attention placed on physical appearance in the United States. This can be difficult for teens. Most teens just want to fit in with their peers and those who do not may feel uncomfortable. Teens that are overweight or obese may be ridiculed or teased. Physical changes may be easier for boys than girls because while boys are moving toward the cultural ideal of getting larger, girls are moving away from the cultural ideal of remaining thin. Early maturing females may feel uncomfortable with puberty, particularly because they may be thought of as much older than they are and may be thought of sexually active and

mature, even though they are not. Late maturing females may feel that others do not respect them as having grown up. Early maturing males may be popular in school and thought of as more mature than they are. They may also be recruited into gangs or for other violent activity because of their physique if they live in neighborhoods or communities where this type of activity occurs. Late maturing males may overcompensate for their slight build by trying to act as if they are older than they are.

The growth spurt is accompanied by a need for more calories. Most teens in the United States take in enough calories, but do not eat healthy foods. High fat, sugar, and salty foods combined with a sedentary life style leave many teens struggling with being overweight or obese. Such teens experience health risks such as sleep apnea, high blood pressure, and type II diabetes.

Teens may also experience eating disorders. Teenage girls are especially vulnerable to eating disorders in cultures obsessed with thinness. Anorexia nervosa is overall starvation that is life threatening. A person with anorexia sees fat where there is none and may become obsessed with thinness, excessive dieting, and exercise. Anorexia is difficult to treat but can lead to cardiac arrest.

Bulimia is another eating disorder in which a person eats in binging episodes and then purges through self-induced vomiting or using laxatives or enemas. Repeated exposure of the teeth to corrosive stomach acid can break down the enamel. Blood blisters may develop on the roof of the mouth, the index finger may become discolored, and the esophagus damaged by repeatedly vomiting.

With adolescence comes a potential escalation in situations of abuse. Physical abuse becomes more violent as a parent has altercations with a much bigger child in adolescence. Sexual abuse increases with puberty and the impact of such abuse can include feeling stigmatized, having a distorted sense of sexuality, feeling powerless, and distrust. The myth of mutuality is the myth that the victim of sexual abuse is somehow responsible for its occurrence. This myth makes it very difficult for a person who has been sexually abused to overcome the negative feelings associated with the abuse. Recognizing that this is a myth is an important step toward healing.

A majority of youth become sexually active in their late teens. The use of contraception has increased and teen pregnancy rates, though still high, have decreased. Most teens engage in sexual activity with a steady partner.

In the United States, the decline in teenagers using tobacco has stopped. Over-the-counter medications are still cause for concern as many teens use these for recreation. Marijuana is now the most commonly used drug. It has surpassed smoking tobacco. The perceived risk of marijuana use has been declining.

Some drugs are considered gateway drugs which means that the use of these drugs can often lead to use of stronger drugs. Drug use often interferes with healthy nutrition and sleep so important for teens. And many dangerous decisions can be made while under the influence. Examples include engaging in risky sexual behavior or driving while high or intoxicated.

Let's turn our attention to some global concerns about youth. Youth make up 30 percent of the population in some developing countries. We've seen an increase in the amount of schooling children receive. But often the quality of instruction is poor and teachers and educational materials are hard to obtain. Drought, war, and other circumstances often disrupt schooling. The number of youth participating in the labor force has decreased in many parts of the world. This allows children to participate in formal education.

HIV/AIDS is the leading cause of death in sub-Saharan Africa. This is due to low condom use and widespread coercive sex. Tobacco use has been increasing in developing countries. And child brides or marriage to girls under 18 has decreased. These are just a few concerns about youth in the developing world.

Let's explore cognitive development in adolescence.

Piaget believed that many adolescents reach formal operational thought. This is marked by the ability to think abstractly or to use systems of abstract thought or logic more readily. An adolescent may now be able to understand symbolic meanings such as those found in religion. Adolescents may also thing about "what if" situations or hypothetical situations more easily. And the adolescent may become conscious of their thoughts and enjoy the game of thinking or introspection.

Psychologist David Elkind offers some insights into the unique qualities of adolescent thought.

Adolescent egocentrism is the feeling a teenager may have that no one can understand what they are going through. A consoling adult may be told, "You don't understand! Nobody understands!"

The imaginary audience refers to the feeling of self-consciousness that many adolescents feel. Even when alone, the teenager may be imagining how others would see them. Those who feel particularly uneasy or awkward may try to make the discomfort by

being sarcastic or by posturing in public.

The personal fable is the notion that fame and fortune lie ahead. This belief comes as the adolescent is able to see possibilities, but not yet understand probabilities. I had a student once who raised her hand during our class discussion of the personal fable. I called on her and she said, “Oh my gosh! I did this! I kept a list of all of my teacher’s names so that I could personally thank them when I became famous!”

What was your personal fable? You may have given up on it once you found out how unlikely it was.

The invincibility fable is the mistaken idea that one is indestructible. Teenagers may think they may never get hurt when engaging in risky behavior. Look for examples of the invincibility fable in the film you view for this lesson.

In youth, conformity is emphasized. Many young teenagers, especially, pressure one another to act, speak, dress, and think alike.

Formal operational thought can be accompanied by the ability to see possibilities never before considered. Youth are often idealistic as a result. However, what is possible is not the same as what is likely.

Some current concerns in education in the United States include reducing the rate of students who drop out of school before completing their high school diplomas, the impersonal nature of large, bureaucratic high schools, and the issue of where to group students by age in school. Should sixth graders be included in elementary school or should they be part of a junior high? Should ninth graders be at the top of their school in a junior high or should they attend school with seniors? What would be the advantages and disadvantages of each?

We now turn our attention to relationships and psychosocial development in adolescence.

The beginning of our modern idea of adolescence as a time of storm and stress can be traced to G. Stanley Hall. Hall wrote a 3 volume work documenting the lives of youth in 1909. As people relocated to large industrial cities in the U. S., youth became more visible and gained the attention of social workers and others concerned with development. Hall believed that the storm and stress of adolescence is created by the biological changes associated with puberty. But for many teens, adolescence is not a period of storm and stress. It seems to be a more stressful time for those who are also experiencing other stressors, perhaps at school or at home. Consider your adolescence. Would you like to return to that period in your life? Why or why not?

Anna Freud wrote about adolescence and saw it as a period of temporary disruption as the id, ego, and superego are out of balance. Hopefully, the overactive id is brought under control by the ego or through the use of reason and by being realistic. The later years of adolescence are less volatile than early adolescence.

Erikson believed that the primary concern of adolescence is that of establishing identity. The teen struggles with the question, “Who am I?” Who am I physically, sexually, socially, vocationally, spiritually, academically, and so on? Hopefully, the teen postpones making any decisions that will lock him or her in prematurely. The teen needs to wait or go through a period of exploration, called a psychosocial moratorium, before making any long term decisions. Foreclosure occurs when others take that decision-making away from the teen. Having a criminal record or becoming a parent are examples of foreclosure. The teen that goes through adolescence without establishing an identity may be apathetic about the future. This is referred to as identity confusion.

Here is a list of what some teens reported that they wanted from their parents.

- They wanted reasonable freedoms and privileges.
- The wanted their parents to show faith in the decisions they made.
- They wanted their parents to approve of them as people; not that they had to like everything the teen did or said.
- They wanted their parents to be willing to listen to them.
- The wanted their parents to show concern for them and to support them in their interests.

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# 6.12: Adolescence PPT

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# 7: EARLY ADULTHOOD

Emerging adulthood is a phase of the life span between adolescence and full-fledged adulthood which encompasses late adolescence and early adulthood, proposed by Jeffrey Arnett in a 2000 article in the American Psychologist. It primarily describes people living in developed countries, but it is also experienced by young people in urban wealthy families in the Global South. The term describes young adults who do not have children, do not live in their own home, or do not have sufficient income to become fully independent in their early to late 20s. Arnett suggests emerging adulthood is the distinct period between 18 and 25 years of age where adolescents become more independent and explore various life possibilities.


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# 7.1: Introduction to Early Adulthood

**Learning Objectives**

- Discuss the developmental tasks of early adulthood.
- Describe physical development in early adulthood.
- Explain how early adulthood is a healthy, yet risky time of life.
- Summarize Levinson's theory of adult transitions.
- Distinguish between formal and postformal thought.
- Explain dialectical thought.
- Describe Erikson's stage of intimacy vs. isolation.
- Question Erikson's assertion about the focus on intimacy in early adulthood.
- Identify trends in mate selection, age at first marriage, and cohabitation in the United States.
- Discuss fertility issues in early adulthood.
- Explain social exchange theory of mate selection.
- Define the principle of least interest.
- Apply Sternberg's theory of love to specific examples of relationships.
- Apply Lee's love styles to specific examples of relationships.
- Compare frames of relationships.
- Explain the wheel theory of love.
- Explain the process of disaffection.
- Describe some current concerns in education in today's colleges.

## Developmental Tasks of Early Adulthood

Early adulthood can be a very busy time of life. Havighurst (1972) describes some of the developmental tasks of young adults. These include:

- Achieving autonomy: trying to establish oneself as an independent person with a life of one's own
- Establishing identity: more firmly establishing likes, dislikes, preferences, and philosophies
- Developing emotional stability: becoming more stable emotionally which is considered a sign of maturing
- Establishing a career: deciding on and pursuing a career or at least an initial career direction and pursuing an education
- Finding intimacy: forming first close, long-term relationships
- Becoming part of a group or community: young adults may, for the first time, become involved with various groups in the community. They may begin voting or volunteering to be part of civic organizations (scouts, church groups, etc.). This is especially true for those who participate in organizations as parents.
- Establishing a residence and learning how to manage a household: learning how to budget and keep a home maintained.
- Becoming a parent and rearing children: learning how to manage a household with children. Making marital adjustments and learning to parent.

**Exercise:**

To what extent do you think these have changed in the last several years? How might these tasks be different across cultures?

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# 7.2: When Does Adulthood Begin?

According to Rankin and Kenyon (2008), historically the process of becoming an adult was more clearly marked by rites of passage. For many individuals, marriage and becoming a parent were considered entry into adulthood. However, these role transitions are no longer considered as the important markers of adulthood (Arnett, 2001). Economic and social changes have resulted in increase in young adults attending college (Rankin & Kenyon, 2008) and a delay in marriage and having children (Arnett & Taber, 1994; Laursen & Jensen-Campbell, 1999) Consequently, current research has found financial independence and accepting responsibility for oneself to be the most important markers of adulthood in Western culture across age (Arnett, 2001) and ethnic groups (Arnett, 2004).



Figure 7.4. Source.

In looking at college students' perceptions of adulthood, Rankin and Kenyon (2008) found that some students still view rites of passage as important markers. College students who had placed more importance on role transition markers, such as parenthood and marriage, belonged to a fraternity/sorority, were traditionally aged (18–25), belonged to an ethnic minority, were of a traditional marital status; i.e., not cohabitating, or belonged to a religious organization, particularly for men. These findings supported the view that people holding collectivist or more traditional values place more importance on role transitions as markers of adulthood. In contrast, older college students and those cohabitating did not value role transitions as markers of adulthood as strongly.

## Young Adult Living Arrangements

In 2014, for the first time in more than 130 years, adults 18 to 34 were more likely to be living in their parents' home than they were to be living with a spouse or partner in their own household (Fry, 2016). The current trend is that young Americans are not choosing to settle down romantically before age 35. Since 1880, living with a romantic partner was the most common living arrangement among young adults. In 1960, 62% of America's 18- to 34-year-olds were living with a spouse or partner in their own household, while only 20% were living with their parents.

By 2014, 31.6% of early adults were living with a spouse or partner in their own household, while 32.1% were living in the home of their parent(s). Another 14% of early adults lived alone, were a single parent, or lived with one or more roommates. The remaining 22% lived in the home of another family member (such as a grandparent, in-law, or sibling), a non-relative, or in group quarters (e.g., college dormitories). Comparing ethnic groups, 36% of black and Hispanic early adults lived at home, while 30% of white young adults lived at home.

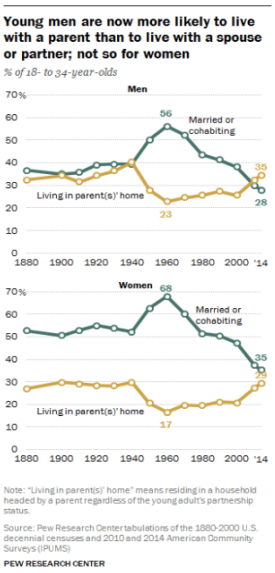



Figure 7.5.

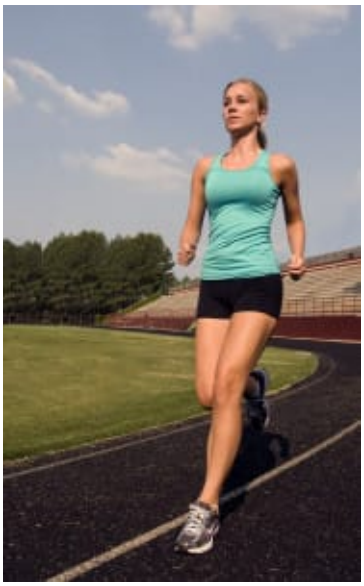
As can be seen in Figure 7.5, gender differences in living arrangements are also noted in that young men are living with parents at a higher rate than young women. In 2014, 35% of young me were residing with their parents, while 28% were living with a spouse or partner in their own household. Young women were more likely to be living with a spouse or partner (35%) than living with their parents (29%). Additionally, more young women (16%) than young men (13%) were heading up a household without a spouse or partner, primarily because women are more likely to be single parents living with their children. Lastly, young men (25%) are more likely than young women (19%) to be living in the home of another family member, a non-relative, or in some type of group quarters (Fry, 2016).

**What are some factors that help explain these changes in living arrangements?** First, early adults are postponing marriage or choosing not to marry or cohabitate. Lack of employment and lower wages have especially contributed to males residing with their parents. Men who are employed are less likely to live at home. Wages for young men (adjusting for inflation) have been falling since 1970 and correlate with the rise in young men living with their parents. The recent recession and recovery (2007-present) has also contributed to the increase in early adults living at home. College enrollments increased during the recession, which further increased early adults living at home. However, once early adults possess a college degree, they are more likely to establish their own households (Fry, 2016).

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# 7.3: Physical Development



**The Physiological Peak**: People in their twenties and thirties are considered young adults. If you are in your early twenties, good news-you are probably at the peak of your physiological development. Your reproductive system, motor ability, strength, and lung capacity are operating at their best. Now here is the bad news. These systems will now start a slow, gradual decline so that by the time you reach your mid to late 30s, you will begin to notice signs of aging. This includes a decline in your immune system, your response time, and in your ability to recover quickly from physical exertion. For example, you may have noticed that it takes you quite some time to stop panting after running to class or taking the stairs. But, here is more good news. Getting out of shape is not an inevitable part of aging; it is probably due to the fact that you have become less physically active and have experienced greater stress. How is that good news, you ask? It's good news because it means that there are thing you can do to combat many of these changes. So keep in mind, as we continue to discuss the life span that many of the changes we associate with aging can be turned around if we adopt healthier lifestyles.

**A Healthy, but Risky Time**: Doctor's visits are less frequent in early adulthood than for those in midlife and late adulthood and are necessitated primarily by injury and pregnancy (Berger, 2005). However, among the top five causes of death in young adulthood are non-intentional injury (including motor vehicle accidents), homicide, and suicide (Heron, M. P. & B. L. Smith, 2007). Cancer and heart disease complete the list. Rates of violent death (homicide, suicide, and accidents) are highest among young adult males, and vary among by race and ethnicity. Rates of violent death are higher in the United States than in Canada, Mexico, Japan, and other selected countries. Males are 3 times more likely to die in auto accidents than are females (Frieden, 2011).

**Substance Abuse**: Rates of violent death are influenced by substance abuse which peaks during early adulthood. Illicit drug use peaks between the ages of 19 and 22 and then begins to decline (Berk, 2007). And twenty-five percent of those who smoke cigarettes, a third of those who smoke marijuana, and 70 percent of those who abuse cocaine began using after age 17 (Volkow, 2004). Some young adults use as a way of coping with stressors from family, personal relationships, or concerns over being on one's own. Others use because they have friends who use and in the early 20s, there is still a good deal of pressure to conform. Half of all alcohol consumed in the United States is in the form of binge drinking (Frieden, 2011).

Drugs impair judgment, reduce inhibitions, and alter mood, all of which can lead to dangerous behavior. Reckless driving, violent altercations, and forced sexual encounters are some examples. Binge drinking on college campuses has received considerable media and public attention. The role alcohol plays in predicting acquaintance rape on college campuses is of particular concern. In the majority of cases of rape, the victim knows the rapist. Being intoxicated increases a female's risk of being the victim of date or acquaintance rape (Fisher et als. in Carroll, 2007). And, she is more likely to blame herself and to be blamed by others if she was intoxicated when raped. Males increase their risk of being accused of rape if they are drunk when an incidence occurred (Carroll, 2007).

Drug and alcohol use increase the risk of sexually transmitted infections because people are more likely to engage in risky sexual

behavior when under the influence. This includes having sex with someone who has had multiple partners, having anal sex without the use of a condom, having multiple partners, or having sex with someone whose history is unknown. And, as we previously discussed in our lesson on Beginnings, drugs and alcohol ingested during pregnancy have a teratogenic effect.

## Sexual Responsiveness and Reproduction in Early Adulthood

**Sexual Responsiveness**: Men and women tend to reach their peak of sexual responsiveness at different ages. For men, sexual responsiveness tends to peak in the late teens and early twenties. Sexual arousal can easily occur in response to physical stimulation or fantasizing. Sexual responsiveness begins a slow decline in the late twenties and into the thirties although a man may continue to be sexually active. Through time, a man may require more intense stimulation in order to become aroused. Women often find that they become more sexually responsive throughout their 20s and 30s and may peak in the late 30s or early 40s. This is likely due to greater self-confidence and reduced inhibitions about sexuality.

**Reproduction**: For many couples, early adulthood is the time for having children. However, delaying childbearing until the late 20s or early 30s has become more common in the United States.

Couples delay childbearing for a number of reasons. Women are more likely to attend college and begin careers before starting families. And both men and women are delaying marriage until they are in their late 20s and early 30s.

**Infertility**: Infertility affects about 6.1 million women or 10 percent of the reproductive age population (American Society of Reproductive Medicine [ASRM], 2000-2007). Male factors create infertility in about a third of the cases. For men, the most common cause is a lack of sperm production or low sperm production. Female factors cause infertility in another third of cases. For women, one of the most common causes of infertility is the failure to ovulate. Another cause of infertility is pelvic inflammatory disease, an infection of the female genital tract (Carroll, 2007). Pelvic inflammatory disease is experienced by 1 out of 7 women in the United States and leads to infertility about 20 percent of the time. One of the major causes of pelvic inflammatory disease is Chlamydia trachomatis, the most commonly diagnosed sexually transmitted infection in young women. Another cause of pelvic inflammatory disease is gonorrhea. Both male and female factors contribute to the remainder of cases of infertility.

**Fertility treatment**: The majority of infertility cases (85-90 percent) are treated using fertility drugs to increase ovulation or with surgical procedures to repair the reproductive organs or remove scar tissue from the reproductive tract. In vitro fertilization is used to treat infertility in less than 5 percent of cases. IVF is used when a woman has blocked or deformed fallopian tubes or sometimes when a man has a very low sperm count. This procedure involves removing eggs from the female and fertilizing the eggs outside the woman's body. The fertilized egg is then reinserted in the woman's uterus. The average cost of IVF is over $12,000 and the success rate is between 5 to 30 percent. IVF makes up about 99 percent of artificial reproductive procedures.

Less common procedures include gamete intra-fallopian tube transfer (GIFT) which involves implanting both sperm and ova into the fallopian tube and fertilization is allowed to occur naturally. The success rate of implantation is higher for GIFT than for IVF (Carroll, 2007). Zygote intra-fallopian tube transfer (ZIFT) is another procedure in which sperm and ova are fertilized outside of the woman's body and the fertilized egg or zygote is then implanted in the fallopian tube. This allows the zygote to travel down the fallopian tube and embed in the lining of the uterus naturally. This procedure also has a higher success rate than IVF.

Insurance coverage for infertility is required in fourteen states, but the amount and type of coverage available varies greatly (ASRM, 2000-2007). The majority of couples seeking treatment for infertility pay much of the cost. Consequently, infertility treatment is much more accessible to couples with higher incomes. However, grants and funding sources are available for lower income couples seeking infertility treatment as well.

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# 7.4: Cognitive Development

## Beyond Formal Operational Thought: Post-formal Thought

In our last lesson, we discussed formal operational thought. The hallmark of this type of thinking is the ability to think abstractly or to consider possibilities and ideas about circumstances never directly experienced. Thinking abstractly is only one characteristic of adult thought, however. If you compare a 15 year old with someone in their late 30s, you would probably find that the later considers not only what is possible, but also what is likely. Why the change? The adult has gained experience and understands why possibilities do not always become realities. This difference in adult and adolescent thought can spark arguments between the generations. Here is an example. A student in her late 30s relayed such an argument she was having with her 14 year old son. The son had saved a considerable amount of money and wanted to buy an old car and store it in the garage until he was old enough to drive. He could sit in it; pretend he was driving, clean it up, and show it to his friends. It sounded like a perfect opportunity. The mother, however, had practical objections. The car could just sit for several years without deteriorating. The son would certainly change his mind about the type of car he wanted before he was old enough to drive and they would be stuck with a car that would not run. Having a car nearby would be too much temptation and the son might decide to sneak it out for a quick run around the block, etc.

Postformal thought is practical, realistic and more individualistic. As a person approaches the late 30s, chances are they make decisions out of necessity or because of prior experience and are less influenced by what others think. Of course, this is particularly true in individualistic cultures such as the United States.

## Dialectical Thought

In addition to moving toward more practical considerations, thinking in early adulthood may also become more flexible and balanced. Abstract ideas that the adolescent believes in firmly may become standards by which the adult evaluates reality. Adolescents tend to think in dichotomies; ideas are true or false; good or bad; right or wrong and there is no middle ground. However, with experience, the adult comes to recognize that there is some right and some wrong in each position, some good or some bad in a policy or approach, some truth and some falsity in a particular idea. This ability to bring together salient aspects of two opposing viewpoints or positions is referred to as dialectical thought and is considered one of the most advanced aspects of postformal thinking (Basseches, 1984). Such thinking is more realistic because very few positions, ideas, situations, or people are completely right or wrong. So, for example, parents who were considered angels or devils by the adolescent eventually become just people with strengths and weaknesses, endearing qualities and faults to the adult.

# Educational Concerns



In 2005, 37 percent of people in the United States between 18 and 24 had some college or an associate degree; about 30 percent of people between 25 and 34 had completed an education at the bachelor's level or higher (U. S. Bureau of the Census, 2005). Of current concern is the relationship between higher education and the workplace. Bok (2005), American educator and Harvard University President, calls for a closer alignment between the goals of educators and the demands of the economy. Companies outsource much of their work, not only to save costs, but to find workers with the skills they need. What is required to do well in today's economy? Colleges and universities, he argues, need to promote global awareness, critical thinking skills, the ability to communicate, moral reasoning, and responsibility in their students (Bok, 2006). Regional accrediting agencies and state organizations provide similar guidelines for educators. Workers need skills in listening, reading, writing, speaking, global awareness, critical thinking, civility, and computer literacy-all skills that enhance success in the workplace. The U. S. Secretary of Education, Margaret Spellings challenges colleges and universities to demonstrate their effectiveness in providing these skills to students and to work toward increasing America's competitiveness in the global economy (U. S. Department of Education, 2006).

A quality education is more than a credential. Being able to communicate and work well with others is crucial for success. There is some evidence to suggest that most workers who lose their jobs do so because of an inability to work with others, not because they do not know how to do their jobs (Cascio, in Berger 2005). Writing, reading, being able to work with a diverse work team, and having the social skills required to be successful in a career and in society are qualities that go beyond merely earning a credential to compete for a job. Employers must select employees who are not only degreed, but who will be successful in the work environment. Hopefully, students gain these skills as they pursue their degrees. Listen to this story about the lack of rigor in higher education and the problems students face as a result: A Lack Of Rigor Leaves Students 'Adrift' In College.

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# 7.5: Psychosocial Development

## Gaining Adult Status

Many of the developmental tasks of early adulthood involve becoming part of the adult world and gaining independence. Young adults sometimes complain that they are not treated with respect-especially if they are put in positions of authority over older workers. Consequently, young adults may emphasize their age to gain credibility from those who are even slightly younger. "You're only 23? I'm 27!" a young adult might exclaim. (Note: This kind of statement is much less likely to come from someone in their 40s!).

The focus of early adulthood is often on the future. Many aspects of life are on hold while people go to school, go to work, and prepare for a brighter future. There may be a belief that the hurried life now lived will improve 'as soon as I finish school' or 'as soon as I get promoted' or 'as soon as the children get a little older.' As a result, time may seem to pass rather quickly. The day consists of meeting many demands that these tasks bring. The incentive for working so hard is that it will all result in better future.

## Levinson's Theory

In 1978, Daniel Levinson published a book entitled *The Seasons of a Man's Life* in which he presented a theory of development in adulthood. Levinson's work was based on in-depth interviews with 40 men between the ages of 35-45. He later conducted interviews with women as well (1996). According to Levinson, these adults have an image of the future that motivates them. This image is called "the dream" and for the men interviewed, it was a dream of how their career paths would progress and where they would be at midlife. Women held a "split dream"; an image of the future in both work and family life and a concern with the timing and coordination of the two. Dreams are very motivating. Dreams of a home bring excitement to couples as they look, save, and fantasize about how life will be. Dreams of careers motivate students to continue in school as they fantasize about how much their hard work will pay off. Dreams of playgrounds on a summer day inspire would be parents. A dream is perfect and retains that perfection as long as it remains in the future. But as the realization of it moves closer, it may or may not measure up to its image. If it does, all is well. But if it does not, the image must be replaced or modified. And so, in adulthood, plans are made, efforts follow, and plans are reevaluated. This creating and recreating characterizes Levinson's theory.

Levinson's stages are presented below (Levinson, 1978). He suggests that period of transition last about 5 years and periods of "settling down" last about 7 years. The ages presented below are based on life in the middle class about 30 years ago. Think about how these ages and transitions might be different today.

- Early adult transition (17-22): Leaving home, leaving family; making first choices about career and education
- Entering the adult world (22-28): Committing to an occupation, defining goals, finding intimate relationships
- Age 30 transition (28-33): Reevaluating those choices and perhaps making modifications or changing one's attitude toward love and work
- Settling down (33 to 40): Reinvesting in work and family commitments; becoming involved in the community
- Midlife transition (40-45): Reevaluating previous commitments; making dramatic changes if necessary; giving expression to previously ignored talents or aspirations; feeling more of a sense of urgency about life and its meaning
- Entering middle adulthood (45-50): Committing to new choices made and placing one's energies into these commitments

Adulthood, then, is a period of building and rebuilding one's life. Many of the decisions that are made in early adulthood are made before a person has had enough experience to really understand the consequences of such decisions. And, perhaps, many of these initial decisions are made with one goal in mind-to be seen as an adult. As a result, early decisions may be driven more by the expectations of others. For example, imagine someone who chose a career path based on other's advice but now find that the job is not what was expected. The age 30 transition may involve recommitting to the same job, not because it's stimulating, but because it pays well. Settling down may involve settling down with a new set of expectations for that job. As the adult gains status, he or she may be freer to make more independent choices. And sometimes these are very different from those previously made. The midlife transition differs from the age 30 transition in that the person is more aware of how much time has gone by and how much time is left. This brings a sense of urgency and impatience about making changes. The future focus of early adulthood gives way to an emphasis on the present in midlife. (We will explore this in our next lesson.) Overall, Levinson calls our attention to the dynamic nature of adulthood.

Exercise:

How well do you think Levinson's theory translates culturally? Do you think that personal desire and a concern with reconciling dreams with the realities of work and family is equally important in all cultures? Do you think these considerations are equally important in all social classes, races and ethnic groups? Why or why not? How might this model be modified in today's economy?

# Erikson's Theory

## Intimacy vs. Isolation

Erikson believed that the main task of early adulthood was to establish intimate relationships. Intimate relationships are more difficult if one is still struggling with identity. Achieving a sense of identity is a life-long process, but there are periods of identity crisis and stability. And having some sense of identify is essential for intimate relationships. In early adulthood, intimacy (or emotional or psychological closeness) comes from friendships and mates.

## Friendships as a source of intimacy

In our twenties, intimacy needs may be met in friendships rather than with partners. This is especially true in the United States today as many young adults postpone making long-term commitments to partners either in marriage or in cohabitation. The kinds of friendships shared by women tend to differ from those shared by men (Tannen, 1990). Friendships between men are more likely to involve sharing information, providing solutions, or focusing on activities rather than discussion problems or emotions. Men tend to discuss opinions or factual information or spend time together in an activity of mutual interest. Friendships between women are more likely to focus on sharing weaknesses, emotions, or problems. Women talk about difficulties they are having in other relationships and express their sadness, frustrations, and joys. These differences in approaches lead to problems when men and women come together. She may want to vent about a problem she is having; he may want to provide a solution and move on to some activity. But when he offers a solution, she thinks he does not care!

Friendships between men and women become more difficult because of the unspoken question about whether the friendships will lead to a romantic involvement. It may be acceptable to have opposite-sex friends as an adolescent, but once a person begins dating or marries; such friendships can be considered threatening. Consequently, friendships may diminish once a person has a partner or single friends may be replaced with couple friends.

# Partners as a source of intimacy: Dating, Cohabitation, and Mate Selection

## Dating

In general, traditional dating among teens and those in their early twenties has been replaced with more varied and flexible ways of getting together. The Friday night date with dinner and a movie that may still be enjoyed by those in their 30s gives way to less formal, more spontaneous meetings that may include several couples or a group of friends. Two people may get to know each other and go somewhere alone. How would you describe a "typical" date? Who calls? Who pays? Who decides where to go? What is the purpose of the date? In general, greater planning is required for people who have additional family and work responsibilities. Teens may simply have to negotiate getting out of the house and carving out time to be with friends.

## Cohabitation or Living Together

How prevalent is cohabitation? There are over 5 million heterosexual cohabiting couples in the United States and, an additional 594,000 same-sex couples share households (U. S. Census Bureau, 2006). In 2000, 9 percent of women and 12 percent of men were in cohabiting relationships (Bumpass in Casper & Bianchi, 2002). This number reflects only those couples who were together when census data were collected, however. The number of cohabiting couples in the United States today is over 10 times higher than it was in 1960.

Similar increases have also occurred in other industrialized countries. For example, rates are high in Great Britain, Australia, Sweden, Denmark, and Finland. In fact, more children in Sweden are born to cohabiting couples than to married couples. The lowest rates of cohabitation are in Ireland, Italy, and Japan (Benokraitis, 2005).

## How long do cohabiting relationships last?

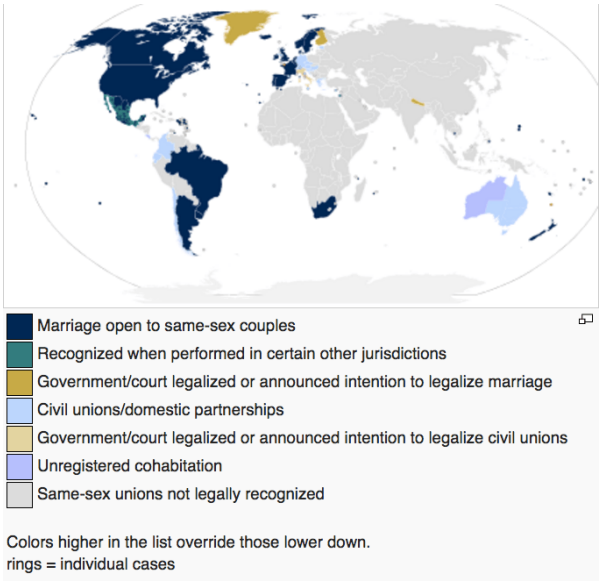
Cohabitation tends to last longer in European countries than in the United States. Half of cohabiting relationships in the U. S. end within a year; only 10 percent last more than 5 years. These short-term cohabiting relationships are more characteristics of people in their early 20s. Many of these couples eventually marry. Those who cohabit more than five years tend to be older and more committed to the relationship. Cohabitation may be preferable to marriage for a number of reasons. For partners over 65, cohabitation is preferable to marriage for practical reasons. For many of them, marriage would result in a loss of Social Security benefits and consequently is not an option. Others may believe that their relationship is more satisfying because they are not bound by marriage. Consider this explanation from a 62-year old woman who was previously in a long-term, dissatisfying marriage. She and her partner live in New York but spend winters in South Texas at a travel park near the beach. “There are about 20 other couples in this park and we are the only ones who aren’t married. They look at us and say, ‘I wish we were so in love’. I don’t want to be like them.” (Author’s files.) Or another couple who have been happily cohabiting for over 12 years. Both had previously been in bad marriages that began as long-term, friendly, and satisfying relationships. But after marriage, these relationships became troubled marriages. These happily cohabiting partners stated that they believe that there is something about marriage that “ruins a friendship”.

The majority of people who cohabit are between the ages of 25-44. Only about 20 percent of those who cohabit are under age 24. Cohabitation among younger adults tends to be short-lived. Relationships between older adults tend to last longer.

## Why do people cohabit?

People cohabit for a variety of reasons. The largest number of couples in the United States engages in premarital cohabitation. These couples are testing the relationship before deciding to marry. About half of these couples eventually get married. The second most common type of cohabitation is dating cohabitation. These partnerships are entered into for fun or convenience and involve less commitment than premarital cohabitation. About half of these partners break up and about one-third eventually marry. Trial marriage is a type of cohabitation in which partners are trying to see what it might be like to be married. They are not testing the other person as a potential mate, necessarily; rather, they are trying to find out how being married might feel and what kinds of adjustments they might have to make. Over half of these couples split up. In the substitute marriage, partners are committed to one another and are not necessarily seeking marriage. Forty percent of these couples continue to cohabit after 5 to 7 years (Bianchi & Casper, 2000). Certainly, there are other reasons people cohabit. Some cohabit out of a feeling of insecurity or to gain freedom from someone else (Ridley, C. Peterman, D. & Avery, A., 1978). And many cohabit because they cannot legally marry.

## Same-Sex Couples




Same sex marriage is legal in 21 countries, including the United States. Many other countries either recognize same-sex couples for the purpose of immigration, grant rights for domestic partnerships, or grant common law marriage status to same-sex couples.



*Photo Courtesy Salvor Gissurardottir*

Same sex couples struggle with concerns such as the division of household tasks, finances, sex, and friendships as do heterosexual couples. One difference between same sex and heterosexual couples, however, is that same sex couples have to live with the added stress that comes from social disapproval and discrimination. And continued contact with an ex-partner may be more likely among homosexuals and bisexuals because of closeness of the circle of friends and acquaintances.

# Mate-Selection

Contemporary young adults in the United States are waiting longer than before to marry. The median age of first marriage is 25 for women and 27 for men. This reflects a dramatic increase in age of first marriage for women, but the age for men is similar to that found in the late 1800s. Marriage is being postponed for college and starting a family often takes place after a woman has completed her education and begun a career. However, the majority of women will eventually marry (Bianchi & Casper, 2000).

**Social exchange theory** suggests that people try to maximize rewards and minimize costs in social relationships. Each person entering the marriage market comes equipped with assets and liabilities or a certain amount of social currency with which to attract a prospective mate. For men, assets might include earning potential and status while for women, assets might include

physical attractiveness and youth.

## A Fair Exchange

Customers in the market do not look for a 'good deal', however. Rather, most look for a relationship that is mutually beneficial or equitable. One of the reasons for this is because most a relationship in which one partner has far more assets than the other will result if power disparities and a difference in the level of commitment from each partner. According to Waller's principle of least interest, the partner who has the most to lose without the relationship (or is the most dependent on the relationship) will have the least amount of power and is in danger of being exploited. A greater balance of power, then, may add stability to the relationship.

Homogamy and the filter theory of mate selection: Societies specify through both formal and informal rules who is an appropriate mate. Consequently, mate selection is not completely left to the individual. Rules of endogamy indicate within which groups we should marry. For example, many cultures specify that people marry within their own race, social class, age group, or religion. These rules encourage homogamy or marriage between people who share social characteristics. The majority of marriages in the U. S. are homogamous with respect to race, social class, age and to a lesser extent, religion. Rules of exogamy specify the groups into which one is prohibited from marrying. For example, in most of the United States, people are not allowed to marry someone of the same sex.

According to the filter theory of mate selection (Kerckhoff & Davis, 1962), the pool of eligible partners becomes narrower as it passes through filters used to eliminate members of the pool. One such filter is propinquity or geographic proximity. Mate selection in the United States typically involves meeting eligible partners face to face. Those with whom one does not come into contact are simply not contenders. Race and ethnicity is another filter used to eliminate partners. Although interracial dating has increased in recent years and interracial marriage rates are higher than before, interracial marriage still represents only 5.4 percent of all marriages in the United States. Physical appearance is another feature considered when selecting a mate. Age, social class, and religion are also criteria used to narrow the field of eligibles. Thus, the field of eligibles becomes significantly smaller before those things we are most conscious of such as preferences, values, goals, and interests, are even considered.

## Online Relationships

What impact does the internet have on the pool of eligibles? There are hundreds of websites designed to help people meet. Some of these are geared toward helping people find suitable marriage partners and others focus on less committed involvements. Websites focus on specific populations-big beautiful women, Christian motorcyclists, parents without partners, and people over 50, etc. Theoretically, the pool of eligibles is much larger as a result. However, many who visit sites are not interested in marriage; many are already married. And so if a person is looking for a partner online, the pool must be filtered again to eliminate those who are not seeking long-term relationships. While this is true in the traditional marriage market as well, knowing a person's intentions and determining the sincerity of their responses becomes problematic online.



*Photo Courtesy Vikram Kharvi*

This young man offers his picture and a description of his professional status and stability. While he's looking for employment, his ad might also help him find an eligible partner online.

Online communication differs from face-to-face interaction in a number of ways. In face-to-face meetings, people have many cues upon which to base their first impressions. A person's looks, voice, mannerisms, dress, scent, and surroundings all provide information in face-to-face meetings. But in computer- mediated meetings, written messages are the only cues provided. Fantasy is used to conjure up images of voice, physical appearance, mannerisms, and so forth. The anonymity of online involvement makes it easier to become intimate without fear of interdependence. It is easier to tell one's secrets because there is little fear of loss. One can find a virtual partner who is warm, accepting, and undemanding (Gwinnell, 1998). And exchanges can be focused more on emotional attraction than physical appearance.

When online, people tend to disclose more intimate details about themselves more quickly. A shy person can open up without worrying about whether or not the partner is frowning or looking away. And someone who has been abused may feel safer in virtual relationships. None of the worries of home or work get in the way of the exchange. The partner can be given one's undivided attention, unlike trying to have a conversation on the phone with a houseful of others or at work between duties. Online exchanges take the place of the corner café as a place to relax, have fun, and be you (Brooks, 1997). However, breaking up or disappearing is also easier. A person can simply not respond, or block e-mail.

But what happens if the partners meet face to face? People often complain that pictures they have been provided of the partner are misleading. And once couples begin to think more seriously about the relationship, the reality of family situations, work demands, goals, timing, values, and money all add new dimensions to the mix. Next we will turn our attention to theories of love.

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# 7.6: Attachment in Young Adulthood

Hazan and Shaver (1987) described the attachment styles of adults, using the same three general categories proposed by Ainsworth's research on young children; secure, avoidant, and anxious/ambivalent. Hazan and Shaver developed three brief paragraphs describing the three adult attachment styles. Adults were then asked to think about romantic relationships they were in and select the paragraph that best described the way they felt, thought, and behaved in these relationships (Table 7.4).

*Table 7.4: Which of the following best describes you in your romantic relationships?*

| | |
|---|---|
| **Secure** | I find it relatively easy to get close to others and am comfortable depending on them and having them depend on me. I don't often worry about being abandoned or about someone getting too close to me. |
| **Avoidant** | I am somewhat uncomfortable being close to others. I find it difficult to trust them completely, difficult to allow myself to depend on them. I am nervous when anyone gets too close, and often, love partners want me to be more intimate than I feel comfortable being. |
| **Nervous/ Ambivalent** | I find that others are reluctant to get as close as I would like. I often worry that my partner doesn't really love me or won't stay with me. I want to merge completely with another person, and this sometimes scares people away. |

Bartholomew (1990) challenged the categorical view of attachment in adults and suggested that adult attachment was best described as varying along two dimensions; attachment related-anxiety and attachment-related avoidance. **Attachment-related anxiety** *refers to the extent to which an adult worries about whether their partner really loves them.* Those who score high on this dimension fear that their partner will reject or abandon them (Fraley, Hudson, Heffernan, & Segal, 2015). **Attachment-related avoidance** *refers to whether an adult can open up to others, and whether they trust and feel they can depend on others*. Those who score high on attachment- related avoidance are uncomfortable with opening up and may fear that such dependency may limit their sense of autonomy (Fraley et al., 2015). According to Bartholomew (1990) this would yield four possible attachment styles in adults; secure, dismissing, preoccupied, and fearful-avoidant (see Figure 7.19).




Figure 7.19: Four-Category Model with the Two- Dimensions of Attachment. Source: Adapted from Fraley, et al., 2015. p. 355

Securely attached adults score lower on both dimensions. They are comfortable trusting their partners and do not worry excessively about their partner's love for them. Adults with a dismissing style score low on attachment-related anxiety, but higher on attachment-related avoidance. Such adults dismiss the importance of relationships. They trust themselves, but do not trust others, thus do not share their dreams, goals, and fears with others. They do not depend on other people, and feel uncomfortable when they have to do so.

Those with a preoccupied attachment are low in attachment-related avoidance, but high in attachment-related anxiety. Such adults are often prone to jealousy and worry that their partner does not love them as much as they need to be loved. Adults whose attachment style is fearful- avoidant score high on both attachment-related avoidance and attachment-related anxiety. These adults want close relationships, but do not feel comfortable getting emotionally close to others. They have trust issues with others and often do not trust their own social skills in maintaining relationships.

Research on attachment in adulthood has found that:

- Adults with insecure attachments report lower satisfaction in their relationships (Butzer, & Campbell, 2008; Holland, Fraley, & Roisman, 2012).
- Those high in attachment-related anxiety report more daily conflict in their relationships (Campbell, Simpson, Boldry, & Kashy, 2005).
- Those with avoidant attachment exhibit less support to their partners (Simpson, Rholes, Oriña, & Grich, 2002).
- Young adults show greater attachment-related anxiety than do middle-aged or older adults (Chopik, Edelstein, & Fraley, 2013).
- Some studies report that young adults show more attachment-related avoidance (Schindler, Fagundes, & Murdock, 2010), while other studies find that middle-aged adults show higher avoidance than younger or older adults (Chopik et al., 2013).
- Young adults with more secure and positive relationships with their parents make the transition to adulthood more easily than do those with more insecure attachments (Fraley, 2013).

**Do people with certain attachment styles attract those with similar styles?** When people are asked what kinds of psychological or behavioral qualities they are seeking in a romantic partner, a large majority of people indicate that they are seeking someone who is kind, caring, trustworthy, and understanding, that is the kinds of attributes that characterize a "secure" caregiver (Chappell & Davis, 1998). However, we know that people do not always end up with others who meet their ideals. Are secure people more likely to end up with secure partners, and, vice versa, are insecure people more likely to end up with insecure partners? The majority of the research that has been conducted to date suggests that the answer is "yes." Frazier, Byer, Fischer, Wright, and DeBord (1996) studied the attachment patterns of more than 83 heterosexual couples and found that, if the man was relatively secure, the woman was also likely to be secure.

One important question is whether these findings exist because (a) secure people are more likely to be attracted to other secure people, (b) secure people are likely to create security in their partners over time, or (c) some combination of these possibilities. Existing empirical research strongly supports the first alternative. For example, when people have the opportunity to interact with individuals who vary in security in a speed-dating context, they express a greater interest in those who are higher in security than those who are more insecure (McClure, Lydon, Baccus, & Baldwin, 2010). However, there is also some evidence that people's attachment styles mutually shape one another in close relationships. For example, in a longitudinal study, Hudson, Fraley, Vicary, and Brumbaugh (2012) found that, if one person in a relationship experienced a change in security, his or her partner was likely to experience a change in the same direction.



Figure 7.20: Sharing food, celebrations and traditions are some of the ways we establish secure attachments with our loved ones from an early age. [Image: skeeze]

**Do early experiences as children shape adult attachment?** The majority of research on this issue is retrospective; that is, it relies on adults' reports of what they recall about their childhood experiences. This kind of work suggests that secure adults are more likely to describe their early childhood experiences with their parents as being supportive, loving, and kind (Hazan & Shaver, 1987). A number of longitudinal studies are emerging that demonstrate prospective associations between early attachment experiences and adult attachment styles and/or interpersonal functioning in adulthood. For example, Fraley, Roisman, Booth-LaForce, Owen, and Holland (2013) found in a sample of more than 700 individuals studied from infancy to adulthood that maternal sensitivity across development prospectively predicted security at age 18. Simpson, Collins, Tran, and Haydon (2007) found that attachment security, assessed in infancy in the strange situation, predicted peer competence in grades one to three, which, in turn, predicted the quality of friendship relationships at age 16, which, in turn, predicted the expression of positive and

negative emotions in their adult romantic relationships at ages 20 to 23.

It is easy to come away from such findings with the mistaken assumption that early experiences “determine” later outcomes. To be clear: Attachment theorists assume that the relationship between early experiences and subsequent outcomes is probabilistic, not deterministic. Having supportive and responsive experiences with caregivers early in life is assumed to set the stage for positive social development. But that does not mean that attachment patterns are set in stone. In short, even if an individual has far from optimal experiences in early life, attachment theory suggests that it is possible for that individual to develop well-functioning adult relationships through a number of corrective experiences, including relationships with siblings, other family members, teachers, and close friends. Security is best viewed as a culmination of a person’s attachment history rather than a reflection of his or her early experiences alone. Those early experiences are considered important, not because they determine a person’s fate, but because they provide the foundation for subsequent experiences.

## Relationships with Parents and Siblings

In early adulthood the parent-child relationship has to transition toward a relationship between two adults. This involves a reappraisal of the relationship by both parents and young adults. One of the biggest challenges for parents, especially during emerging adulthood, is coming to terms with the adult status of their children. Aquilino (2006) suggests that parents who are reluctant or unable to do so may hinder young adults’ identity development. This problem becomes more pronounced when young adults still reside with their parents. Arnett (2004) reported that leaving home often helped promote psychological growth and independence in early adulthood.

Sibling relationships are one of the longest-lasting bonds in people’s lives. Yet, there is little research on the nature of sibling relationships in adulthood (Aquilino, 2006). What is known is that the nature of these relationships change, as adults have a choice as to whether they will maintain a close bond and continue to be a part of the life of a sibling. Siblings must make the same reappraisal of each other as adults, as parents have to with their adult children. Research has shown a decline in the frequency of interactions between siblings during early adulthood, as presumably peers, romantic relationships, and children become more central to the lives of young adults. Aquilino (2006) suggests that the task in early adulthood may be to maintain enough of a bond so that there will be a foundation for this relationship in later life. Those who are successful can often move away from the “older-younger” sibling conflicts of childhood, toward a more equal relationship between two adults. Siblings that were close to each other in childhood are typically close in adulthood (Dunn, 1984, 2007), and in fact, it is unusual for siblings to develop closeness for the first time in adulthood. Overall, the majority of adult sibling relationships are close (Cicirelli, 2009).

## Erikson: Intimacy vs. Isolation

Erikson’s (1950, 1968) sixth stage focuses on establishing intimate relationships or risking social isolation. Intimate relationships are more difficult if one is still struggling with identity. Achieving a sense of identity is a life-long process, as there are periods of identity crisis and stability. However, once identity is established intimate relationships can be pursued. These intimate relationships include acquaintanceships and friendships, but also the more important close relationships, which are the long-term romantic relationships that we develop with another person, for instance, in a marriage (Hendrick & Hendrick, 2000).

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# 7.7: Factors Influencing Attraction

Because most of us enter into a close relationship at some point, it is useful to know what psychologists have learned about the principles of liking and loving. A major interest of psychologists is the study of interpersonal **attraction**, *or what makes people like, and even love, each other.*



Figure 7.21: Birds of a feather flock together. Black-headed gulls in Colwick Country Park, UK. Source.

**Similarity:** One important factor in attraction is a perceived similarity in values and beliefs between the partners (Davis & Rusbult, 2001). Similarity is important for relationships because it is more convenient if both partners like the same activities and because similarity supports one's values. We can feel better about ourselves and our choice of activities if we see that our partner also enjoys doing the same things that we do. *Having others like and believe in the same things we do makes us feel validated in our beliefs.* This is referred to as **consensual validation** and is an important aspect of why we are attracted to others.

**Self-Disclosure:** Liking is also enhanced by **self-disclosure**, *the tendency to communicate frequently, without fear of reprisal, and in an accepting and empathetic manner.* Friends are friends because we can talk to them openly about our needs and goals and because they listen and respond to our needs (Reis & Aron, 2008). However, self-disclosure must be balanced. If we open up about our concerns that are important to us, we expect our partner to do the same in return. If the self-disclosure is not reciprocal, the relationship may not last.

**Proximity:** Another important determinant of liking is **proximity,** *or the extent to which people are physically near us.* Research has found that we are more likely to develop friendships with people who are nearby, for instance, those who live in the same dorm that we do, and even with people who just happen to sit nearer to us in our classes (Back, Schmukle, & Egloff, 2008).

Proximity has its effect on liking through the principle of **mere exposure**, which is *the tendency to prefer stimuli (including, but not limited to people) that we have seen more frequently*. The effect of mere exposure is powerful and occurs in a wide variety of situations. Infants tend to smile at a photograph of someone they have seen before more than they smile at a photograph of someone they are seeing for the first time (Brooks-Gunn & Lewis, 1981), and people prefer side- to-side reversed images of their own faces over their normal (nonreversed) face, whereas their friends prefer their normal face over the reversed one (Mita, Dermer, & Knight, 1977). This is expected on the basis of mere exposure, since people see their own faces primarily in mirrors, and thus are exposed to the reversed face more often.

Mere exposure may well have an evolutionary basis. We have an initial fear of the unknown, but as things become more familiar they seem more similar and safe, and thus produce more positive affect and seem less threatening and dangerous (Harmon-Jones & Allen, 2001; Freitas, Azizian, Travers, & Berry, 2005). When the stimuli are people, there may well be an added effect. Familiar people become more likely to be seen as part of the ingroup rather than the outgroup, and this may lead us to like them more. Leslie Zebrowitz and her colleagues found that we like people of our own race in part because they are perceived as similar

to us (Zebrowitz, Bornstad, & Lee, 2007).

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# 7.8: Gender

**Sex** *refers to physical or physiological differences between males, females, and intersex persons, including both their primary and secondary sex characteristics.* **Gender**, on the other hand, *refers to social or cultural distinctions associated with a given sex.* When babies are born, they are assigned a gender based on their biological sex, male babies are assigned as boys, female babies are assigned as girls, and intersex babies are usually relegated into one category or another. Scholars generally regard gender as a social construct, *meaning that it does not exist naturally, but is instead a concept that is created by cultural and societal norms.* From birth, children are socialized to conform to certain gender roles based on their biological sex and the gender to which they are assigned.

Since the term sex refers to biological or physical distinctions, characteristics of sex will not vary significantly between different human societies. For example, persons of the female sex, in general, regardless of culture, will eventually menstruate and develop breasts that can lactate. Characteristics of gender, on the other hand, may vary greatly between different societies. For example, in American culture, it is considered feminine to wear a dress or skirt. However, in many Middle Eastern, Asian, and African cultures, dresses or skirts (often referred to as sarongs, robes, or gowns) can be considered masculine. Similarly, the kilt worn by a Scottish male does not make him appear feminine in his culture.

**Gender identity** *is a person's sense of self as a member of a particular gender. Individuals who identify with a role that corresponds to the sex assigned to them at birth (for example, they were born with male sex characteristics, were assigned as a boy, and identify today as a boy or man) are* **cisgender**. *Those who identify with a role that is different from their biological sex (for example, they were born with male sex characteristics, were assigned as a boy, but identify today as a girl, woman, or some other gender altogether) are often referred to as* **transgender.**

The term transgender encompasses a wide range of possible identities, including agender, genderfluid, genderqueer (signifying gender experiences that do not fit into a binary concept), androgynous, bigender, pangender, ambigender, non-gendered, and intergender, **Two-spirit** *is a modern umbrella term used by some indigenous North Americans to describe gender-variant individuals in their communities.*

Transgender is independent of sexual orientation; transgender people may identify as heterosexual, homosexual, bisexual, pansexual, polysexual, asexual, or any other kind of sexuality, just like cisgender people do. It is difficult to determine the prevalence of transgender people in society; however, it is estimated that 700,000 individuals in the United States (0.3%) are transgender (Gates, 2011).

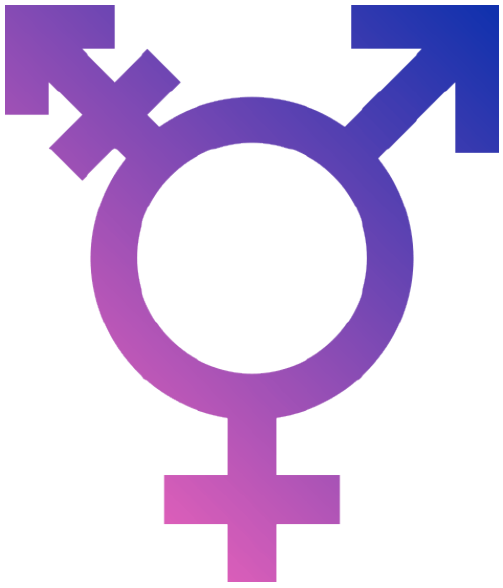


Figure 7.10. Source.

Some transgender individuals may alter their bodies through medical interventions, such as surgery and hormonal therapy, so that their physical being is better aligned with gender identity. Not all transgender individuals choose to alter their bodies or

physically transition. Many will maintain their original anatomy, but may present themselves to society as a different gender, often by adopting the dress, hairstyle, mannerisms, or other characteristics typically assigned to a certain gender. It is important to note that people who cross-dress, or wear clothing that is traditionally assigned to the opposite gender, such as transvestites, drag kings, and drag queens, do not necessarily identify as transgender (though some do). People often confuse the term **transvestite**, *which is the practice of dressing and acting in a style or manner traditionally associated with another sex*, with transgender. Cross-dressing is typically a form of self-expression, entertainment, or personal style, and not necessarily an expression about one's gender identity.

**Transgender Discrimination:** Transgender people are much more likely to experience harassment, bullying, and violence based on their gender identity; they also experience much higher rates of discrimination in housing, employment, healthcare, and education (National Center for Transgender Equality, 2015). Transgender individuals of color face additional financial, social, and interpersonal challenges, in comparison to the transgender community as a whole, as a result of structural racism. Specifically, black transgender people reported the highest level of discrimination among all transgender individuals of color. As members of several intersecting minority groups, transgender people of color, and transgender women of color in particular, are especially vulnerable to employment discrimination, poor health outcomes, harassment, and violence. Consequently, they face even greater obstacles than white transgender individuals and cisgender members of their own race.

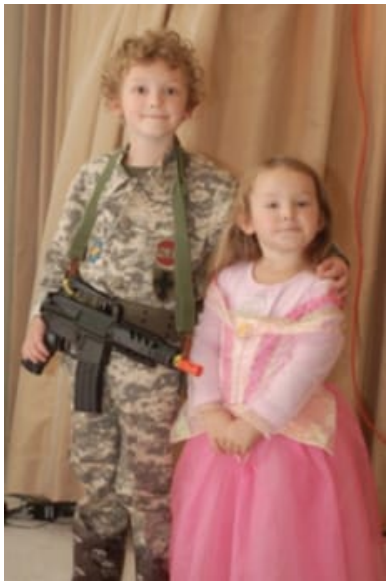


Figure 7.11.

**Gender Roles:** As we grow, we learn how to behave from those around us. In this socialization process, children are introduced to certain roles that are typically linked to their biological sex. The term **gender role** *refers to society's concept of how men and women are expected to act and behave*. Gender roles are based on norms, or standards, created by society. In American culture, masculine roles have traditionally been associated with strength, aggression, and dominance, while feminine roles have traditionally been associated with passivity, nurturing, and subordination.

The drive to adhere to masculine and feminine gender roles continues throughout life. Men tend to outnumber women in professions such as law enforcement, the military, and politics; women tend to outnumber men in care-related occupations such as childcare, healthcare, and social work. These occupational roles are examples of typical American male and female behavior, derived not from biology or genetics, but from our culture's traditions. Adherence to these roles demonstrates fulfillment of social expectations, but not necessarily personal preference (Diamond, 2002).

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# 7.9: Sexuality

**Human sexuality** *refers to people's sexual interest in and attraction to others, as well as their capacity to have erotic experiences and responses.* Sexuality may be experienced and expressed in a variety of ways, including thoughts, fantasies, desires, beliefs, attitudes, values, behaviors, practices, roles, and relationships. These may manifest themselves in biological, physical, emotional, social, or spiritual aspects. The biological and physical aspects of sexuality largely concern the human reproductive functions, including the human sexual-response cycle and the basic biological drive that exists in all species. Emotional aspects of sexuality include bonds between individuals that are expressed through profound feelings or physical manifestations of love, trust, and care. Social aspects deal with the effects of human society on one's sexuality, while spirituality concerns an individual's spiritual connection with others through sexuality. Sexuality also impacts, and is impacted by cultural, political, legal, philosophical, moral, ethical, and religious aspects of life.

**The Sexual Response Cycle:** *Sexual motivation, often referred to as* **libido**, *is a person's overall sexual drive or desire for sexual activity.* This motivation is determined by biological, psychological, and social factors. In most mammalian species, sex hormones control the ability to engage in sexual behaviors. However, sex hormones do not directly regulate the ability to copulate in primates (including humans); rather, they are only one influence on the motivation to engage in sexual behaviors. Social factors, such as work and family also have an impact, as do internal psychological factors like personality and stress. Sex drive may also be affected by hormones, medical conditions, medications, lifestyle stress, pregnancy, and relationship issues.

The **sexual response cycle** *is a model that describes the physiological responses that take place during sexual activity.* According to Kinsey, Pomeroy, and Martin (1948), the cycle consists of four phases: excitement, plateau, orgasm, and resolution. The excitement **phase** *is the phase in which the intrinsic (inner) motivation to pursue sex arises.* The plateau **phase** *is the period of sexual excitement with increased heart rate and circulation that sets the stage for orgasm.* Orgasm *is the release of tension*, and the resolution **period** *is the unaroused state before the cycle begins again.*

**The Brain and Sex:** The brain is the structure that translates the nerve impulses from the skin into pleasurable sensations. It controls nerves and muscles used during sexual behavior. The brain regulates the release of hormones, which are believed to be the physiological origin of sexual desire. The cerebral cortex, which is the outer layer of the brain that allows for thinking and reasoning, is believed to be the origin of sexual thoughts and fantasies. Beneath the cortex is the limbic system, which consists of the amygdala, hippocampus, cingulate gyrus, and septal area. These structures are where emotions and feelings are believed to originate, and are important for sexual behavior.

The **hypothalamus** is the most important part of the brain for sexual functioning. *This is the small area at the base of the brain consisting of several groups of nerve-cell bodies that receives input from the limbic system.* Studies with lab animals have shown that destruction of certain areas of the hypothalamus causes complete elimination of sexual behavior. One of the reasons for the importance of the hypothalamus is that it controls the pituitary gland, which secretes hormones that control the other glands of the body.

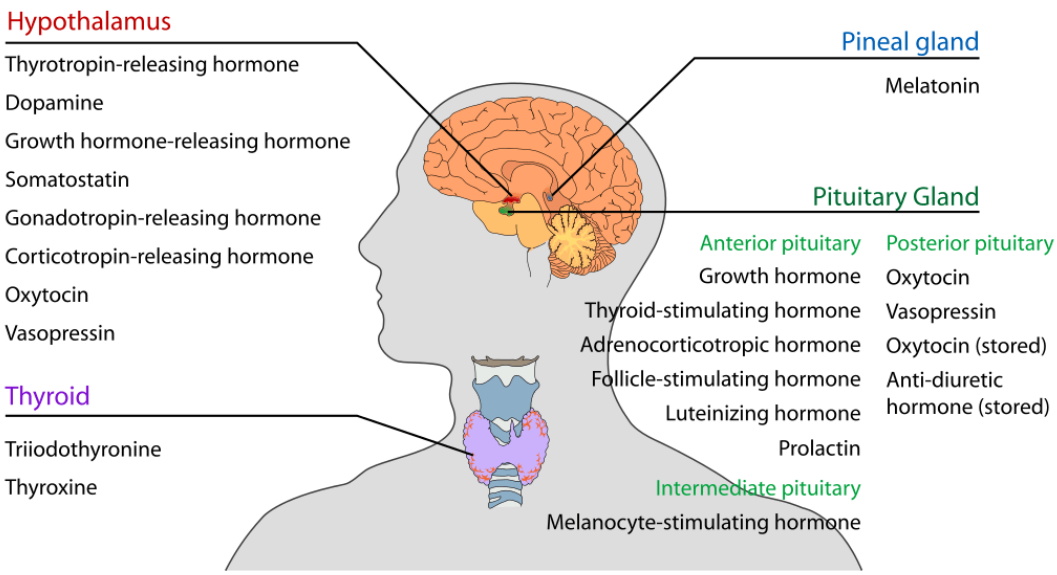



Figure 7.12. Source.

**Hormones:** Several important sexual hormones are secreted by the pituitary gland. Oxytocin**,** also known as the hormone of love*, is released during sexual intercourse when an orgasm is achieved*. Oxytocin is also released in females when they give birth or are breast feeding; it is believed that oxytocin is involved with maintaining close relationships. Both prolactin and oxytocin stimulate milk production in females. Follicle-stimulating hormone (FSH) *is responsible for ovulation in females by triggering egg maturity; it also stimulates sperm production in males*. Luteinizing hormone (LH) *triggers the release of a mature egg in females during the process of ovulation*.

In males, testosterone appears to be a major contributing factor to sexual motivation. Vasopressin *is involved in the male arousal phase*, and the increase of vasopressin during erectile response may be directly associated with increased motivation to engage in sexual behavior.

The relationship between hormones and female sexual motivation is not as well understood, largely due to the overemphasis on male sexuality in Western research. Estrogen and progesterone typically *regulate motivation to engage in sexual behavior for females, with estrogen increasing motivation and progesterone decreasing it*. The levels of these hormones rise and fall throughout a woman's menstrual cycle. Research suggests that testosterone, oxytocin, and vasopressin are also implicated in female sexual motivation in similar ways as they are in males, but more research is needed to understand these relationships.

**Sexual Responsiveness Peak:** Men and women tend to reach their peak of sexual responsiveness at different ages. For men, sexual responsiveness tends to peak in the late teens and early twenties. Sexual arousal can easily occur in response to physical stimulation or fantasizing. Sexual responsiveness begins a slow decline in the late twenties and into the thirties, although a man may continue to be sexually active. Through time, a man may require more intense stimulation in order to become aroused. Women often find that they become more sexually responsive throughout their 20s and 30s and may peak in the late 30s or early 40s. This is likely due to greater self-confidence and reduced inhibitions about sexuality.

**Sexually Transmitted Infections: Sexually transmitted infections (STIs),** also referred to as sexually transmitted diseases (STDs) or venereal diseases (VDs), *are illnesses that have a significant probability of transmission by means of sexual behavior, including vaginal intercourse, anal sex, and oral sex*. Some STIs can also be contracted by sharing intravenous drug needles with an infected person, as well as through childbirth or breastfeeding.

Common STIs include:

- Chlamydia;
- Herpes (HSV-1 and HSV-2);
- Human papillomavirus (HPV);
- Gonorrhea;
- Syphilis;
- Trichomoniasis;
- HIV (human immunodeficiency virus) and AIDS (acquired immunodeficiency syndrome).

According to the Centers for Disease Control and Prevention (CDC) (2014), there was an increase in the three most common types of STDs in 2014. These include 1.4 million cases of chlamydia, 350,000 cases of gonorrhea, and 20,000 cases of syphilis. Those most affected by STDS include those younger, gay/bisexual males, and females. The most effective way to prevent transmission of STIs is to practice safe sex and avoid direct contact of skin or fluids which can lead to transfer with an infected partner. Proper use of safe-sex supplies (such as male condoms, female condoms, gloves, or dental dams) reduces contact and risk and can be effective in limiting exposure; however, some disease transmission may occur even with these barriers.

**Societal Views on Sexuality:** Society's views on sexuality are influenced by everything from religion to philosophy, and they have changed throughout history and are continuously evolving. Historically, religion has been the greatest influence on sexual behavior in the United States; however, in more recent years, peers and the media have emerged as two of the strongest influences, particularly among American teens (Potard, Courtois, & Rusch, 2008).

Mass media in the form of television, magazines, movies, and music continues to shape what is deemed appropriate or normal sexuality, targeting everything from body image to products meant to enhance sex appeal. Media serves to perpetuate a number of social scripts about sexual relationships and the sexual roles of men and women, many of which have been shown to have both empowering and problematic effects on people's (especially women's) developing sexual identities and sexual attitudes.

**Cultural Differences:** In the West, premarital sex is normative by the late teens, more than a decade before most people enter marriage. In the United States and Canada, and in northern and eastern Europe, cohabitation is also normative; most people have at least one cohabiting partnership before marriage. In southern Europe, cohabiting is still taboo, but premarital sex is tolerated in emerging adulthood. In contrast, both premarital sex and cohabitation remain rare and forbidden throughout Asia. Even dating is discouraged until the late twenties, when it would be a prelude to a serious relationship leading to marriage. In cross-cultural comparisons, about three fourths of emerging adults in the United States and Europe report having had premarital sexual relations by age 20, versus less than one fifth in Japan and South Korea (Hatfield & Rapson, 2006).

**Sexual Orientation:** A person's **sexual orientation** *is their emotional and sexual attraction to a particular sex or gender.* It is a personal quality that inclines people to feel romantic or sexual attraction (or a combination of these) to persons of a given sex or gender. According to the American Psychological Association (APA) (2016), sexual orientation also refers to a person's sense of identity based on those attractions, related behaviors, and membership in a community of others who share those attractions.

**Sexual Orientation on a Continuum:** Sexuality researcher Alfred Kinsey was among the first to conceptualize sexuality as a continuum rather than a strict dichotomy of gay or straight. To classify this continuum of heterosexuality and homosexuality, Kinsey et al. (1948) created a seven-point rating scale that ranged from exclusively heterosexual to exclusively homosexual. Research done over several decades has supported this idea that sexual orientation ranges along a continuum, from exclusive attraction to the opposite sex/gender to exclusive attraction to the same sex/gender (Carroll, 2016).



Figure 7.13a. Source.

However, sexual orientation now can be defined in many ways. **Heterosexuality**, which is often referred to as being straight, *is attraction to individuals of the opposite sex/gender*, while **homosexuality**, being gay or lesbian, *is attraction to individuals of*

*one's own sex/gender*. **Bisexuality** *was a term traditionally used to refer to attraction to individuals of either male or female sex, but it has recently been used in nonbinary models of sex and gender* (i.e., models that do not assume there are only two sexes or two genders) to refer to attraction to *any* sex or gender. Alternative terms such as **pansexuality** and **polysexuality** have also been developed, *referring to attraction to* ***all*** *sexes/genders and attraction to multiple sexes/genders, respectively* (Carroll, 2016).



Figure 7.13b. Source.

**Asexuality** *refers to having no sexual attraction to any sex/gender*. According to Bogaert (2015) about one percent of the population is asexual. Being asexual is not due to any physical problems, and the lack of interest in sex does not cause the individual any distress. Asexuality is being researched as a distinct sexual orientation.

**Development of Sexual Orientation:** According to current scientific understanding, individuals are usually aware of their sexual orientation between middle childhood and early adolescence. However, this is not always the case, and some do not become aware of their sexual orientation until much later in life. It is not necessary to participate in sexual activity to be aware of these emotional, romantic, and physical attractions; people can be celibate and still recognize their sexual orientation. Some researchers argue that sexual orientation is not static and inborn, but is instead fluid and changeable throughout the lifespan.

There is no scientific consensus regarding the exact reasons why an individual holds a particular sexual orientation. Research has examined possible biological, developmental, social, and cultural influences on sexual orientation, but there has been no evidence that links sexual orientation to one factor (APA, 2016). Biological explanations, that include genetics, hormones, and birth order, will be explored further.



Figure 7.14. Source.

Using both twin and familial studies, heredity provides one biological explanation for sexual orientation. Bailey and Pillard (1991) studied pairs of male twins and found that the concordance rate for identical twins was 52%, while the rate for fraternal twins was only 22%. Bailey, Pillard, Neale, and Agyei (1993) studied female twins and found a similar difference with a concordance rate of

48% for identical twins and 16% for fraternal twins. Schwartz, Kim, Kolundzija, Rieger, and Sanders (2010) found that gay men had more homosexual male relatives than heterosexual men, and sisters of gay men were more likely to be lesbians than sisters of straight men.

Excess or deficient exposure to hormones during prenatal development has also been theorized as an explanation for sexual orientation. One-third of females exposed to abnormal amounts of prenatal androgens, a condition called congenital adrenal hyperplasia (CAH), identify as bisexual or lesbian (Cohen-Bendahan, van de Beek, & Berenbaum, 2005). In contrast, too little exposure to prenatal androgens may affect male sexual orientation by not masculinizing the male brain (Carlson, 2011).

Another explanation attempts to explain why gay men tend to have a greater number of older brothers than heterosexual men (Blanchard, 2001). This difference is explained by the **maternal immune hypothesis** which proposes *"a progressive immunization to male-specific antigens after the birth of successive sons in some mothers, which increases the effect of anti-male antibodies on the sexual differentiation of the brain in the developing fetus"* (Carroll, 2016, p. 264). Consequently, in some families with multiple brothers, those born later have demonstrated higher rates of homosexuality.

**Sexual Orientation Discrimination:** The United States is **heteronormative**, *meaning that society supports heterosexuality as the norm*. Consider, for example, that homosexuals are often asked, "When did you know you were gay?" but heterosexuals are rarely asked, "When did you know you were straight?" (Ryle, 2011). Living in a culture that privileges heterosexuality has a significant impact on the ways in which non-heterosexual people are able to develop and express their sexuality.



Figure 7.15. Source.

Open identification of one's sexual orientation may be hindered by **homophobia** *which encompasses a range of negative attitudes and feelings toward homosexuality or people who are identified or perceived as being lesbian, gay, bisexual, or transgender (LGBT).* It can be expressed as antipathy, contempt, prejudice, aversion, or hatred; it may be based on irrational fear and is sometimes related to religious beliefs (Carroll, 2016). Homophobia is observable in critical and hostile behavior, such as discrimination and violence on the basis of sexual orientations that are non- heterosexual. Recognized types of homophobia include institutionalized homophobia, *such as religious and state-sponsored homophobia*, and internalized homophobia *in which people with same-sex attractions internalize, or believe, society's negative views and/or hatred of themselves.*

Gays, lesbians, and bisexual people regularly experience stigma, harassment, discrimination, and violence based on their sexual orientation (Carroll, 2016). Research has shown that gay, lesbian, and bisexual teenagers are at a higher risk of depression and suicide due to exclusion from social groups, rejection from peers and family, and negative media portrayals of homosexuals (Bauermeister et al., 2010). Discrimination can occur in the workplace, in housing, at schools, and in numerous public settings. Much of this discrimination is based on stereotypes and misinformation. Major policies to prevent discrimination based on sexual orientation have only come into effect in the United States in the last few years.

The majority of empirical and clinical research on lesbian, gay, bisexual, and transgender (LGBT) populations are done with largely white, middle-class, well-educated samples. This demographic limits our understanding of more marginalized sub-populations that are also affected by racism, classism, and other forms of oppression. In the United States, non-Caucasian LGBT individuals

may find themselves in a double minority, in which they are not fully accepted or understood by Caucasian LGBT communities, and are also not accepted by their own ethnic group (Tye, 2006). Many people experience racism in the dominant LGBT community where racial stereotypes merge with gender stereotypes.

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# 7.10: Types of Love



## Sternberg's Triangle of Love: Three Components

Sternberg (1988) suggests that there are three main components of love: passion, intimacy, and commitment. Love relationships vary depending on the presence or absence of each of these components. Passion refers to the intense, physical attraction partners feel toward one another. Intimacy involves the ability the share feelings, personal thoughts and psychological closeness with the other. Commitment is the conscious decision to stay together. Passion can be found in the early stages of a relationship, but intimacy takes time to develop because it is based on knowledge of the partner. Once intimacy has been established, partners may resolve to stay in the relationship. Although many would agree that all three components are important to a relationship, many love relationships do not consist of all three. Let's look at other possibilities.

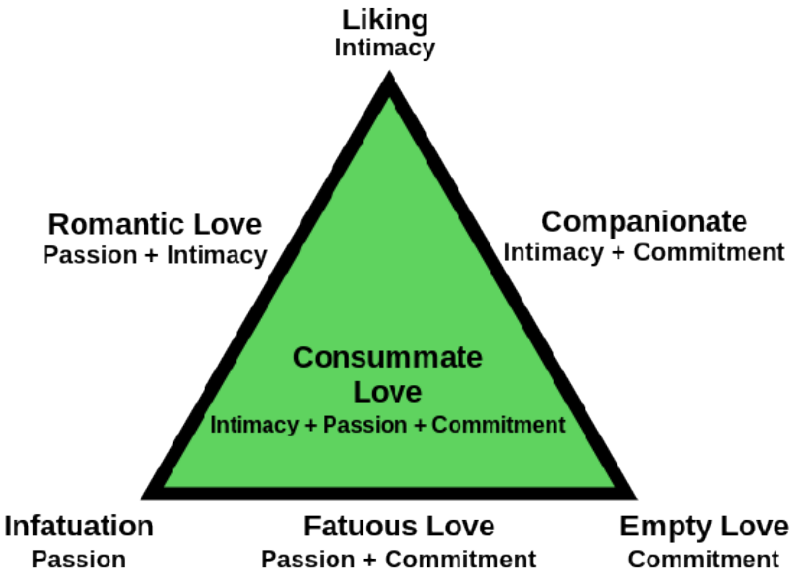



*Image shows the 3 properties of love and how it creates the 7 different loves according to theory. (Public Domain; AnonMoos).*

**Liking**: In this relationship, intimacy or knowledge of the other and a sense of closeness is present. Passion and commitment,

however, are not. Partners feel free to be themselves and disclose personal information. They may feel that the other person knows them well and can be honest with them and let them know if they think the person is wrong. These partners are friends. However, being told that your partner 'thinks of you as a friend' can be a devastating blow if you are attracted to them and seek a romantic involvement.

**Infatuation**: Perhaps, this is Sternberg's version of "love at first sight". Infatuation consists of an immediate, intense physical attraction to someone. A person who is infatuated finds it hard to think of anything but the other person. Brief encounters are played over and over in one's head; it may be difficult to eat and there may be a rather constant state of arousal. Infatuation is rather short-lived, however, lasting perhaps only a matter of months or as long as a year or so. It tends to be based on chemical attraction and an image of what one thinks the other is all about.

**Fatuous Love**: However, some people who have a strong physical attraction push for commitment early in the relationship. Passion and commitment are aspects of fatuous love. There is no intimacy and the commitment is premature. Partners rarely talk seriously or share their ideas. They focus on their intense physical attraction and yet one, or both, is also talking of making a lasting commitment. Sometimes this is out of a sense of insecurity and a desire to make sure the partner is locked into the relationship.

**Empty Love**: This type of love may be found later in a relationship or in a relationship that was formed to meet needs other than intimacy or passion (money, childrearing, status). Here the partners are committed to staying in the relationship (for the children, because of a religious conviction, or because there are no alternatives perhaps), but do not share ideas or feelings with each other and have no physical attraction for one another.

**Romantic Love**: Intimacy and passion are components of romantic love, but there is no commitment. The partners spend much time with one another and enjoy their closeness but have not made plans to continue 'no matter what'. This may be true because they are not in a position to make such commitments or because they are looking for passion and closeness and are afraid it will die out if they commit to one another and start to focus on other kinds of obligations.

**Companionate Love**: Intimacy and commitment are the hallmarks of companionate love. Partners love and respect one another and they are committed to staying together. But their physical attraction may have never been strong or may have just died out. This may be interpreted as 'just the way things are' after so much time together or there may be a sense of regret and loss. Nevertheless, partners are good friends committed to one another.

**Consummate Love**: Intimacy, passion, and commitment are present in consummate love. This is often the ideal type of love. The couple shares passion; the spark has not died, and the closeness is there. They feel like best friends as well as lovers and they are committed to staying together.

## Types of Lovers

Lee (1973) offers a theory of love styles or types of lovers derived from an analysis of writings about love through the centuries. As you read these, think about how these styles might become part of the types of love described above.

- **Pragma** is a style of love that emphasizes the practical aspects of love. The pragmatic lover considers compatibility and the sensibility of their choice of partners. This lover will be concerned with goals in life, status, family reputation, attitudes about parenting, career issues and other practical concerns.
- **Mania** is a style of love characterized by volatility, insecurity, and possessiveness. This lover gets highly upset during arguments or breakups, may have trouble sleeping when in love, and feels emotions very intensely.
- **Agape** is an altruistic, selfless love. These partners give of themselves without expecting anything in return. Such a lover places the partner's happiness above their own and is self-sacrificing to benefit the partner.
- **Eros** is an erotic style of loving in which the person feels consumed. Physical chemistry and emotional involvement are important to this type of lover.
- **Ludus** refers to a style of loving that emphasizes the game of seduction and fun. Such a lover stays away from commitment and often has several love interests at the same time. This lover does not self-disclose and in fact may prefer to keep the other guessing. This lover can end a relationship easily.
- **Storge** is a style of love that develops slowly over time. It often begins as a friendship and becomes sexual much later. These partners are likely to remain friends even after the breakup.

## Frames of Relationships

| A | H | M |
|---|---|---|

Another useful way to consider relationships is to consider the amount of dependency in the relationship. Davidson (1991) suggests three models. The **A-frame** relationship is one in which the partners lean on one another and are highly dependent on the other for survival. If one partner changes, the other is at risk of 'falling over'. This type of relationship cannot easily accommodate change and the partners are vulnerable should change occur. A breakup could be devastating.

The **H-frame** relationship is one in which the partners live parallel lives. They rarely spend time with one another and tend to have separate lives. What time they do share is usually spent meeting obligations rather than sharing intimacies. This independent type of relationship can end without suffering emotionally.

The **M-frame** relationship is interdependent. Partners have a strong sense of connection but also are able to stand alone without suffering devastation. If this relationship ends, partners will be hurt and saddened, but will still be able to stand alone. This ability comes from a strong sense of self-love. Partners can love each other without losing a sense of self. And each individual has self-respect and confidence that enriches the relationship as well as strengthens the self.

We have been looking at love in the context of many kinds of relationships. In our next lesson, we will focus more specifically on marital relationships. But before we do, we examine the dynamics of falling in and out of love.

## The Process of Love and Breaking Up

Reiss (1960) provides a theory of love as process. Based on the wheel theory of love, love relationships begin with the establishment of rapport.

Rapport involves sharing likes, preferences, establishing some common interests. The next step is to begin to disclose more personal information through self-revelation. When one person begins to open up, the social expectation is that the other will follow and also share more personal information so that each has made some risk and trust is built. Sexual intimacy may also become part of the relationship. Gradually, partners begin to disclose even more about themselves and are met with support and acceptance as they build mutual dependency. With time, partners come to rely on each other for need fulfillment. The wheel must continue in order for love to last. It becomes important for partners to continue to establish rapport by discussing the day's events, communicating about their goals and desires, and showing signs of trust. Partners must continue to rely on one another to have certain needs fulfilled. If the wheel turns backward, partners talk less and less, rely less on one another and are less likely to disclose.

## Process of Disaffection: Breaking Up

When relationships are new, partners tend to give one another the benefit of the doubt and focus on what they like about one another. Flaws and imperfections do not go unnoticed; rather, they are described as endearing qualities. So, for example, the partner who has a very large nose is described as 'distinguished' or as having a 'striking feature.' This is very exhilarating because features that someone may have previously felt self-conscious about are now accepted or even appreciated. However, once partners begin the process of breaking up, these views are abandoned and questionable qualities are once again flaws and imperfections.

Kersten (1990) provides a look at the dynamics of breaking up. Although this work is primarily about divorce, the dynamics of dissolving any long-term relationship are similar. The beginning phase of breaking up involves seeing imperfections in the relationship but remaining hopeful that things will improve. This improvement will require the partner's cooperation because they are primarily at fault. So, as long as the offending partner makes the necessary changes, and of course the offended partner will provide the advice, support, and guidance required, the relationship will continue. (If you are thinking that this is not going to work-you are right. Attempts to change one's partner are usually doomed to failure. Would you want your partner to try to change you?)

Once it becomes clear that efforts to change are futile, the middle phase is entered. This phase is marked by disappointment. Partners talk less and less, make little eye contact, and grow further apart. One may still try to make contact, but the other is clearly disengaged and is considering the benefits and costs of leaving the relationship.

In the end phase, the decision to leave has been made. The specific details are being worked out. Turning a relationship around is very difficult at this point. Trust has diminished, and thoughts have turned elsewhere. This stage is one of hopelessness.

We will explore marriage, divorce, and cohabitation more fully in our next lesson.

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# 7.11: Love Attitude Scale

## Introduction

So what is your love style? Your authors discussed several types of love in the text, including John Lee's six love types. The Love Attitude Scale, created by Clyde Hendrick and Susan Hendrick, measures your attitudes about each of the styles.

## Directions

For each of the following statements, write the number (1-5) that most nearly describes your attitude or belief. Some of the items refer to a specific love relationship, while others refer to general attitudes and beliefs about love. Whenever possible, answer the questions with your current partner in mind. If you are not currently dating anyone, answer the questions with your most recent partner in mind. If you have never been in love, answer in terms of what you think your responses would most likely be.

For even more insight, make a copy of the questions and have your current partner complete them also. Answer the questions independently of each other and then compare your scores.

After looking at your style, type a paragraph in which you answer the following questions:

- Does these scores surprise you? Why or why not?
- What would you consider the advantages and disadvantages of these styles to be?
- What styles do you think would be most common in adolescence? Early adulthood? Adulthood? Why?

The code for the rating to be used for each statement is as follows:

| SD = STRONGLY disagree | D = Disagree | N = Neutral | A = Agree | SA = STRONGLY agree |
|---|---|---|---|---|
| SD | D | N | A | SA |
| 1 | 2 | 3 | 4 | 5 |

1. My lover and I were attracted to each other immediately after we first met
2. I try to keep my lover a little uncertain about my commitment to him/her.
3. It is hard to say exactly where friendship ends and love begins.
4. I consider what a person is going to become in life before I commit myself to him/her.
5. When things aren't right with my lover and me, my stomach gets upset.
6. I try to always help my lover through difficult times.
7. My lover and I have the right physical "chemistry" between us.
8. I believe that what my lover doesn't know about me won't hurt him/her.
9. Genuine love first requires caring for a while.
10. I try to plan my life carefully before choosing a lover.
11. When my love affairs break up, I get so depressed.
12. I would rather suffer myself than let my lover suffer.
13. Our lovemaking is very intense and satisfying.
14. I have sometimes had to keep two of my lovers from finding out about each other.
15. I expect to always be friends with the one I love.
16. It is best to love someone with a similar background.
17. Sometimes I get so excited about being in love that I can't sleep.
18. I cannot be happy unless I place my lover's happiness before my own.
19. I feel that my lover and I were meant for each other.
20. I can get over love affairs pretty easily and quickly.
21. The best kind of love grows out of a long friendship.
22. A main consideration in choosing a lover is how he/she reflects on my family.
23. When my lover doesn't pay attention to me, I feel sick all over.
24. I am usually willing to sacrifice my own wishes to let my lover achieve his/hers.

25. My lover and I became emotionally involved rather quickly.
26. My lover would get upset if he/she knew of some of the things I've done with other people.
27. Our friendship merged gradually into love over time.
28. An important factor in choosing a partner is whether or not he/she will be a good parent.
29. When I am in love, I have trouble concentrating.
30. Whatever I own is my lover's to use as he/she chooses.
31. My lover and I really understand each other.
32. When my lover gets too dependent on me, I want to back off a little.
33. Love is really a deep friendship, not a mysterious, mystical emotion.
34. One consideration in choosing a partner is how he/she will reflect on my career.
35. I cannot relax if I suspect that my lover is with someone else.
36. When my lover gets angry with me, I still love Him/her fully and unconditionally.
37. My lover fits my ideal standards of physical beauty/handsomeness.
38. I enjoy playing the "game of love" with a number is different partners.
39. My most satisfying love relationships have developed from good friendships.
40. Before getting very involved with anyone, I try to figure out how compatible his/her hereditary background is with mine in case we ever have children.
41. If my lover ignores me for a while, I do stupid things to get his/her attention back.
42. I would endure all things for the sake of my lover.

**Source**: Hendrick, C and Hendrick, S. (1986). "A theory and method of love." Journal of Personality and Social Psychology, 50, 2, 392-402. Reprinted with permission of the American Psychological Association.

## Love Attitude Scale — Scoring Instructions

The higher the score, the stronger you are on this love style

Scoring:

**Eros**: Add up all the numbers you circled for items 1, 7, 13, 19, 25, 31, and 37.

Eros Score: _____

**Ludus**: Add up all the numbers you circled for items 2, 8, 14, 20, 26, 32, and 38.

Ludus Score: _____

**Storge**: Add up all the numbers you circled for items 3, 9, 15, 21, 27, 33, and 39.

Storge Score: _____

**Pragma**: Add up all the numbers you circled for items 4, 10, 16, 22, 28, 34, and 40.

Pragma Score: _____

**Mania**: Add up all the numbers you circled for items 5, 11, 17, 23, 29, 35, and 41.

Mania Score: _____

**Agape**: Add up all the numbers you circled for items 6, 12, 18, 24, 30, 36, and 42.

Agape Score: _____

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# 7.12: Love Styles

After studying Lee's Love Styles, answer the Love Styles questionnaire you see in this week's lessons. Compute your scores and then answer the following questions. (Post your answers and respond to at least one other person.)

- Do these scores surprise you? Why or why not?
- What would you consider the advantages and disadvantages of these styles to be?
- What styles do you think would be most common in adolescence? Early adulthood? Adulthood? Why?

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# 7.13: Early Adulthood Activity



Choose two of the following:

1. Examine how cultural ideals and timing of puberty can affect an adolescent's body image.
2. Question Erikson's assertion about the focus on intimacy in early adulthood.
3. Apply Sternberg's theory of love to specific examples of relationships from song or media.
4. Discuss social problems facing youth such as suicide, juvenile delinquency, and victimization. What kinds of recommendations would you make to help reduce these problems?

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# 7.14: Early Adulthood Lecture

YouTube Video

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## Lecture Transcript

Here we are in early adulthood. This is the period of life when we are in our 20s and 30s.

First, a look at physical development.

If you are in your early 20s, you are enjoying your physiological peak. You may have more energy, endurance, and reproductive ability than at any other time in your life. Enjoy! In our 30s, we experience a slow, gradual decline in some abilities. One of the first noticeable signs of this is a loss of lung reserve capacity. If you exert yourself, you may notice that it takes longer to reach your normal breathing and heart rate than before. Most of this decline is due to a lack of exercise rather than aging alone, however. Busy lives in early adulthood sometimes means less time for working on physical fitness.

Men may reach their peak of sexual responsiveness in their late teens and early 20s. They can achieve an erection more easily at this period of life. Women may become more sexually responsive as they move through early adulthood. This may be because they become less self-conscious or more confident or comfortable than before.

About 10 to 15 percent of people who are of reproductive age experience infertility. Half of the time this may be due to the male having a low sperm count or not producing enough healthy sperm with enough motility to reach the egg. Half of the time the reason for infertility is because the female doesn't ovulate or has pelvic inflammatory disease or some other blockage in the reproductive tract. About a third of couples conceive eventually without treatment. Treatment helps couples conceive about half of the time.

Most fertility treatment is the use of drugs to stimulate ovulation. Five percent of fertility treatment involves in vitro fertilization where sperm cells fertilize the egg outside the body and the zygote is transferred to the uterus. In vitro fertilization has about a 5 to 30 percent success rate. The more closely the procedure can mimic normal fertilization, the higher the success rate. Gamete intra-fallopian transfer involves transferring sperm and egg into the fallopian tube where conception typically occurs. A small percentage of couples use zygote intra-fallopian transfer in which the fertilized egg is transferred to the fallopian tube to continue its journey to the uterus.

Even though early adulthood is a peak for physiological condition, it's also a time vulnerable to societal risks. Drug abuse peaks between 19 and 22 as people transition into adulthood. Rates fall after these years. However, the use of intoxicants is associated with acquaintance rape and contracting sexually transmitted infections. It also increases the risk of death due to homicide, motor vehicle accidents, and suicide.

Here are some comparisons of violent deaths by sex and ethnic category taken from the National Center for Health Statistics. We can see first that risk is higher for males than for females in all ethnic categories. Homicide rates are particularly high for black males and suicide rates are particularly high for Native American males.

The brain continues to develop during early adulthood. How does thinking change in this period?

Have you ever heard a conversation between a 14 year old and someone in their mid-thirties? If it's a parent and child, you may have heard the 14 year old enthusiastically describe a plan of action while the 35 year old was quick to explain why the plan was unreasonable. This practical, realistic approach is the hallmark of postformal thinking. Postformal thinking is abstract, realistic,

and personal. In early adulthood, we become less concerned with what our peers think and experience reveals what is likely to happen. Not just what is possible.

Dialectical thought is another feature of adult thought. While an adolescent may tend to think in either/or categories, the adult may begin to understand that there are strengths and weaknesses in both sides of an argument. Being able to take what is salient from both sides of opposing viewpoints and to synthesize the two into a personalized view is referred to as dialectical thought. Education promotes this when it entails exploring various positions on a topic. In our personal life, dialectical thought may result in greater tolerance of others with the recognition that no one is perfect.

One concern over higher education is its relationship to the workplace. Derek Bok, former president of Harvard University, suggests that colleges and the workplace should be more closely aligned. The workplace needs people who are aware of global issues, who have effective communicative skills, and who have a sense of integrity or moral reasoning to offer the workplace. Universities and colleges need to address these issues. Higher education has also been criticized for graduating students who do not have critical thinking skills or adequate writing skills.

Now we take a look at the social world of early adulthood.

Havighurst provides a list of developmental tasks in early adulthood. These include achieving a sense of independence or learning how to be on one's own, achieving a sense of identity, emotional stability, beginning a career, engaging in intimate relationships, learning how to participate in the community, establishing one's own residence, and perhaps becoming parents. If you are in this age group and you find you days quite busy or even exhausting, it's certainly understandable!

One reason for engaging in such busy demands is because we feel that in the future, all will pay off. Many of our decisions are designed to show benefits later in adulthood. Young adults hope to be taken seriously as mature individuals and therefore may emphasize how old or experienced they are. They may also make decisions in order to earn the respect of others and to be viewed as adults.

Daniel Levinson offered one of the first studies of adult transitions. In the late 1970s, he published his work entitled Seasons of a Man's Life in which he described the transitions men faced as they launched as young adults and moved through midlife. The early 20s was a time of adult transition and making plans for the future. These plans were implemented for the duration of the 20s, but were reevaluated as they approached their 30s. Some revisions might occur during this transition and carried out through a settling down period that followed. At midlife, these men compared what they thought their lives would be like, referred to as the dream, and how it really was. During the midlife transition, further adjustments such as career changes or changes in personal relationships could be made as well.

Erikson views early adulthood as a time of focusing on intimate relationships. Intimacy versus isolation.

Friendships can be one source of intimacy. Teens often have collections of friends of both sexes. But having opposite sexed friends becomes a bit more problematic once an intimate relationship has been established. As a result, males and females tend to have same-sex friendships. It's been suggested that the friendships that males share are focused on information sharing, debate, and problem-solving. But females are more likely to discuss personal problems and relationship issues. Do you think this is true in all cultures?

Cohabitation refers to partners living together in an intimate relationship without being married. It's estimated that there are about 7.5 million cohabiting couples in the United States. This reflects a 10 fold increase in the last 40 years. Of those, just under 800,000 are same-sex couples. In general, cohabiting relationships do not last as long as marriages. Cohabitation is a more permanent relationship in Europe. And with the decrease in remarriage rates and increase in cohabitation rates, the U. S. may become more similar to Europe in this regard. Younger partners tend to have shorter cohabiting relationships. Cohabitation continues to increase in the United States.

Why do people cohabit? Many cohabiting relationships are considered to be a temporary arrangement prior to marriage. These premarital cohabiting couples do intend to marry, but are living together prior to marriage for practical or emotional reasons. Dating cohabitation does not last very long. This cohabiting relationship is more like a long date where partners continue to spend time together as long as it is enjoyable. The trial marriage pattern is one in which partners try out a marital type of relationship by moving in together. They're not really evaluating a particular partner; rather they are trying out the relationship of marriage. Some couple substitute cohabitation for marriage and have no intentions of marrying. Cohabitation is their preference, perhaps because they've had failed marriages in the past, are philosophically opposed to marriage, or do not want to marry for other practical or financial reasons. These relationships tend to last longer.

Same-sex couples can legally marry in Spain, Canada, Belgium, Argentina, Norway, Iceland, the Netherlands, South Africa, and Denmark. They can also legally marry in Massachusetts, Connecticut, Iowa, Vermont, New Hampshire, and the District of Columbia. The issues facing same-sex couples tend to be similar to those of heterosexual couples: concerns about money, household chores, leisure time, sex, and children. But they do have to face additional stressors of stigma from others. Same-sex partners tend to have a more equal distribution of power within the relationship than in heterosexual couples. And when couples break up, there is a greater likelihood of still having contact with the ex because of a closer same-sex community of friends.

Let's explore mate selection. Although the age at first marriage has been steadily increasing in the United States, 25 for females and 27 for males, many do still marry while in early adulthood. One way to look at the mate selection process is to think of the marriage market as a place where social currency is exchanged. You bring with you a certain amount of social currency or qualities that make you a good potential make. And these are weighed against those things that might make you a less than ideal partner. This is taken into account when looking for a partner. Most of us do not want a "good deal" when making the exchange. Rather, we look for a fair exchange. This is because in relationships, the person with the least interest in the relationship has the most power. So if you want an equal distribution of power, you want both parties to need the relationship equally. The majority of marriages are homogamous with respect to social class, race, age, and religion. This similarity of social characteristics is referred to as homogamy. This selection is guided by social rules of endogamy (the expectation that you will marry within certain groups such as race and class), exogamy (the expectation that you will marry outside of other groups such as your sex), and propinquity or nearness. We tend to marry those who are near because those are the people we meet and with whom we socialize.

Let's explore a few theories of love. Sternberg offers a triangular approach to love. Love has three elements, intimacy or psychological closeness, passion or physical attraction, and commitment or the conscious decision to stay together. Most of the problems people have in love relationships are about either intimacy, "We don't talk." passion, "We never hold each other anymore." or commitment, "I can't count on my partner to stay with me."

We can analyze love relationships as having one or more of these elements. Liking is intimacy only. Infatuation is a relationship based on passion alone. Empty love is based solely on commitment. Romantic love includes both intimacy and passion. Companionate love is based on commitment and intimacy. Fatuous love is characterized by passion and commitment, but no intimacy. What do we want? The ideal in the west is consummate love. We want passion, commitment, and intimacy.

John Lee explored types of love or love styles found in literature. You can look at your own style by taking the questionnaire at the end of this lesson.

Pragma is practical love based on sensible qualities. Agape is a selfless love that has the other's best interest at heart. Mania is possessive and insecure.

Eros is erotic love in which a person feels consumed. Ludus is carefree, nonpossessive, and based on seduction. Storge is based on friendship. What's your love style?

Another way to look at relationships is to examine the extent to which partners are dependent or independent of one another. In the A frame relationship, partners lean on one another and there is little room for growth or change.

The H frame relationship finds partners quite independent of one another. Their lives are parallel and there is little connection between the two. The M frame relationship is marked by interdependence. Partners have a close couple connection, but also a sense of self or individuality.

Ira Reiss suggests that love is not stagnant. Rather, it depends on continuous interaction and renewal to be sustained. As a relationship begins, partners find out about one another and their common interests as they establish rapport. This is deepened with mutual sharing of more personal information through self-revelation. The relationship progresses as partners become more dependent on one another in day to day life. Eventually, the partners begin to rely on one another to fulfill their needs. But it doesn't stop there. For love to continue, partners need to repeat the cycle and continue to establish rapport, engage in self-revelation, and be part of one another's lives. When partners break up, the wheel begins to turn in the other direction. Partners talk less and gradually become disengaged.

Kirsten looks at the process of disaffection or the psychological experience of breaking up. Before breaking up, couples may engage in "little fictions" or in maintaining little lies about one another in order to help the person feel good about themselves and the relationship. Flaws are seen as endearing. We're often quite forgiving and positive about our partners in the beginning. And what could be better than having someone love your flaws! But when undergoing the process of disaffection, partners become disenchanted with one another. Or perhaps, only one partner is becoming disappointed. In the beginning phase, this partner may begin to pull away psychologically or start to try to change the partner's flaws. There may still be optimism about the future of

the relationship . . . as long as the partner makes corrections. But in the middle phase, disappointment builds and there's less optimism about the future of the relationship. In the end, a sense of hopelessness creeps in and the disappointed partner may begin to plan their departure.

In our next lesson, we will look at middle adulthood and expand upon adult relationships.

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# 7.15: Early Adulthood PPT

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# 7.16: Early Adulthood Study Guide

## Adolescence and Emerging Adulthood

1. Define puberty. What kinds of changes occur during puberty?
2. What impacts the timing of puberty?
3. Describe the growth spurt.
4. Discuss changes in the teenage brain (review your notes over the film.)
5. Distinguish between primary and secondary sex characteristics and give examples of each.
6. What is spermarche? Menarche?
7. How do cultural ideals and timing impact adolescent body image?
8. Describe some nutritional concerns during adolescence.
9. What is anorexia? Bulimia?
10. What is the myth of mutuality? Who is most likely to suffer from sexual abuse?
11. Characterize teen drug use.
12. What is formal operational intelligence?
13. Define and give examples of adolescent egocentrism, the imaginary audience, the personal fable, and the invincibility fable.
14. How does Erikson characterize adolescence?
15. What is a psychosocial moratorium? What is foreclosure? Identity diffusion?
16. Contrast teens as offenders and as victims of crime.
17. Discuss teen suicide.
18. What do teens want from parents?
19. List the developmental tasks of early adulthood.
20. Explain how emerging adulthood is a health but risky time.
21. Explain Levinson's theory of adulthood.
22. What is postformal thought? What is dialectical thought? What factors promote this?
23. Characterize cohabitation and types of cohabitation.
24. What is the median age of first marriage?
25. Explain social exchange theory of mate selection.
26. What is the principle of least interest?
27. Explain Sternberg's dimensions of love.
28. List and describe Lee's love styles.
29. Characterize frames of relationships.
30. Explain the wheel theory of love.
31. What is the "process of disaffection"? What happens in each stage?

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