Chapter 2: The Causes of Childhood Disorders A Levels of Analysis Approach

# 2.1 Genetic and Epigenetic Influences on Development

## How Do Genes Affect Development?

* Each cell in our body contains 20,000 genes. Genes direct the creation of proteins which affect the structure and functioning of each person. Genes are organized into 23 pairs of chromosomes.
* Most cells reproduce is a process called mitosis, resulting in two identical daughter cells. Sex cells reproduce in a process called meiosis, resulting in daughter cells that are not genetically identical to their parent cell.
* Genes come in different versions, called alleles. The alleles we inherit from our parents can influence our physical attributes (e.g., eye and hair color) as well as our risk for developing certain disorders
* Behavioral geneticists conduct family, adoption, and twin studies to determine the heritability of intelligence, personality, and disorders.
* Molecular geneticists conduct linkage and association studies to identify specific genes that may underlie certain disorders.

## How Do Genes Interact with the Environment to Shape Development?

* The diathesis-stress model posits that both (1) a genetic risk and (2) an environmental stressor are necessary for a disorder to arise. The model is helpful in explaining multifinality, that is, why children with similar genes (e.g., siblings) or experiences have different outcomes.
* The gene-environment correlation model assumes that people’s genotpypes and their environments are not independent. Sometimes, people actively select environments that are conducive to their genes.
* There are three types of gene-environment correlations: passive, evocative, and active. Their relative importance changes with development.

## How Can Epigenetics Help Explain Children’s Development?

* Epidenetic structures include histones and other chemicals that can turn genes “on” or “off.” These structures, which are not part of the child’s genotype, can be changed by environmental factors and passed down from one generation to the next.
* Behavioral epigenetics is an emerging field of research that seeks to understand relationships between epigenetic structures and psychological traits or disorders.

# 2.2 The Brain & Neurotransmitters

## How is Neuroimaging Used to Study Childhood Disorders?

* MRIs provide information about brain structure, whereas fMRIs provide information about brain functioning while performing specific tasks.
* Neuroimaging studies often yield inconsistent findings because children show great variability in brain structure and functioning.

## How Does the Brain Change across Childhood and Adolescence?

* The brain consists of 100 billion neurons that form trillions of synaptic connections with each other. Neurons relay information within themselves electrically; however, they communicate between one another using chemical messengers called neurotransmitters.
* Brain development is characterized by periods of rapid neural growth followed by periods of neural pruning. Development begins in evolutionarily “older” brain regions (e.g., brain stem, limbic system, basal ganglia) and ends in regions responsible for higher order functions (e.g., cortex).

## How Can Experience Affect Brain Development?

* Some aspects of development are gene-driven; they are largely directed by biological factors (e.g., the physical maturation of the brain). Other aspects are experience-expectant; they require stimuli from the environment to emerge properly (e.g., the acquisition of language). Experience-expectant processes emerge during sensitive periods in development.
* Still other aspects of development are experience-dependent; environmental experiences can lead to synaptogenesis, the formation of new neural connections. Brain plasticity refers to the ability of the nervous system to reorganize based on experience.

# 2.3 Learning Theory

## How is Classical Conditioning Important to Understanding Childhood Disorders?

* Learning theory posits that behaviors are acquired through classical conditioning, operant conditioning, or modeling.
* Classical conditioning occurs when children learn to associated two stimuli together in time. Behaviors acquired through classical conditioning can be extinguished using gradual exposure or flooding.

## How is Operant Conditioning Important to Understanding Childhood Disorders?

* Operant conditioning occurs when children associate a behavior with a consequence in the environment.
* Reinforcement always increases the likelihood of future behavior, whereas punishment always decreases the likelihood of future behavior. Reinforcement and punishment can be positive (i.e., involve the presentation of a stimulus) or negative (i.e., involve the avoidance or removal of a stimulus).

## How is Social Learning Important to Understanding Childhood Disorders?

* Social learning occurs when children acquire behaviors through imitation or modeling.
* Modeling can be used to explain the acquisition of problematic behaviors or it can be used in treatment.

# 2.4 Cognition and Emotion-Regulation

## How Does Cognition Change Across Development?

* Piaget described four stages of cognitive development. These stages can be useful in understanding the emergence of childhood disorders involving problems with thinking, problem solving, or language.
* Social cognition refers to a child’s ability to think about social situations and solve interpersonal problems. Some childhood disorders are associated with social problem-solving biases or deficits.

## How Do Children’s Emotion-Regulation Skills Change Across Development?

* Early emotional development is chiefly concerned with emotional expression and accurately understanding the emotions of others. Children with Autism Spectrum Disorder often show problems in developing these skills.
* Later emotional development is characterized by greater capacity for emotion regulation; that is, the ability to recognize, label, and control emotional expression. Children with disruptive behavior and mood disorders often show difficulty with emotion regulation.

# 2.5 Parents, Families, and Friends

## What is temperament?

* Temperament is the way infants and young children organize their behavior in response to environmental stimuli. It is largely innate and influences personality development.
* Chess, Thomas, and Birch (1965) identified three district temperament clusters in infants across ethnic and socioeconomic groups: easy, difficult, and slow-to-war-up.
* The goodness-of-fit between the child’s temperament and his or her caregiver is important to the child’s social-emotional development.

## How Can Parents and Families Influence Children’s Development?

* Attachment refers to the emotional bond between caregiver and child that serves to promote safety and security. The development of attachment is innate; however, the quality of attachment can be secure or insecure depending on the sensitivity and responsiveness of the caregiver.
* Children form internal working models, or social-emotional schemas, based on their interactions with caregivers over the first few years of life. These models guide (and are influenced by) future interpersonal relationships.
* Four patterns of attachment have been identified using the strange situation: secure, insecure-avoidant, insecure-ambivalent, and insecure-disorganized/disoriented. Whereas secure attachment promote social-emotional competence later in development, insecure attachment can contribute to problems in some children.
* Baumrind identified four parenting types each associated with different developmental outcomes in children: authoritative, authoritarian, indulgent, and uninvolved.

## How Do Peers Influence Children’s Development?

* Sullivan believed that intimate friendships are critical to feelings of security and social-emotional competence. Friendships in childhood form the basis for future adult relationships based on mutuality, closeness, and love.
* Peer acceptance depends on cognitive, emotional, behavioral, and social competence. Problems in any area can contribute to peer rejection and psychological problems.

# 2.6.Culture & Society

## How Can Culture and Society Shape Children’s Development?

### What is Bronfenbrenner’s Bioecological Systems Theory?

* Risk factors can be proximal or distal. Distal risk factors include the broader social and cultural influences that affect children indirectly, usually though parents, other family members, schools, and peers.
* Bronfenbrenner’s bioecological systems theory views child development as occurring with a series of nested social systems ranging from the microsystem (e.g., immediate influences) to the macrosystem (e.g., distal, indirect influences).
* Development also occurs in the context of time (i.e., the chronosystem).