

**General Psychology**

**Development: Conception to Childhood**  
**Chapter 11**  
**Jeffrey D. Leitzel, Ph.D.**

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**Chapter Outline**

- A family developmental perspective
- Bronfenbrenner's Ecological Systems Theory
- Development "BIG issues"
- Research methods in developmental psychology
- Heredity and DNA
- Theories
  - Cognitive development – Piaget
  - Psychosocial development
    - Attachment
    - Parenting style
    - Erikson's stages of psychosocial development

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**Developmental Psychology**

- Developmental Psychology: Study of physical, cognitive, and social development throughout the lifespan
- What physical, cognitive, and social changes occur during childhood, adolescence, and adulthood?
- Do changes occur at discrete stages or do they occur more gradually?
- Are changes the result of our genetic programming or our environmental experiences?
- Are there sensitive or critical periods during which certain developmental tasks must occur?

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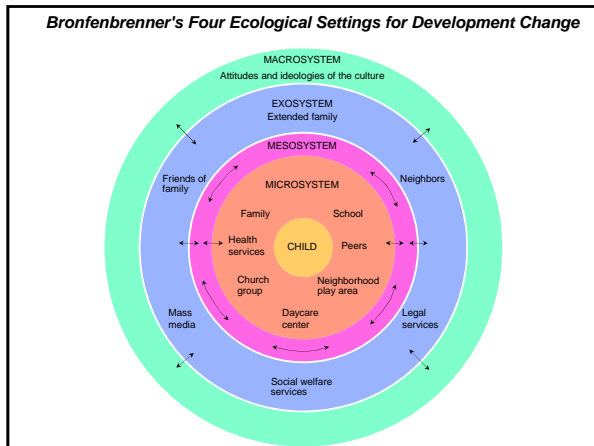
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### Reciprocal Interactions

- We impact on our environment and the environment, in turn having a changing influence on us
- Endless succession of influences.
- Biopsychosocial model
  - Very complex - potential influences & combinations
- Biopsychosocial
  - interplay of biological, psychological, and social aspects of development
  - reminds us of complicated causal forces that produce our individuality
  - different factors will be of most importance at different stages of life

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### Continuity vs. discontinuity

- Continuity = slow, constant progression
- Discontinuity = discrete stages
- some polarization
- both are necessary

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## Nature vs. nurture

- biology vs. environment debate
- both important and the effects of each are very difficult to separate
- biology probably dictates boundaries and our experiences and environment where we will fall

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## Research Methods

- Longitudinal- same individuals are studied over long periods of time
  - problems: subject attrition, practice effects
- Cross-Sectional- people of different ages are studied at the same time
  - problem: cohort effects- differences due to different life experiences
- Cross-Sequential- persons of different ages are studied over long periods of time

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## Heredity & DNA

The human body contains about 100 trillion cells.

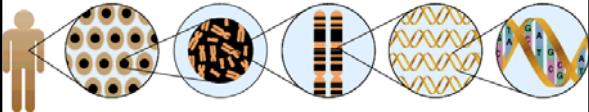
There is a nucleus inside each human cell (except red blood cells).

Each nucleus contains 46 chromosomes, arranged in 23 pairs.

One chromosome of every pair is from each parent.

The chromosomes are filled with tightly coiled strands of DNA.

Genes are segments of DNA that contain instructions to make proteins—the building blocks of life.



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## Genes

- 20,500 different genes
- same in every cell in each person
- no exact number yet
- all have complete set of genes
- few at work in any one cell

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## Functions of genes

- direct "housekeeping" chores
- metabolic functions
- few hundred carry codes for proteins only for that type of cell
- Twins
  - monozygotic
  - dizygotic
  - genetic relatedness of MZ and DZ twins?

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## Genetic Inheritance

- Gregor Mendel (1822-1884)
- discovery in the 1860's
- ignored until "rediscovered" around 1900
- Heredity transmitted in discrete units
  - not via "blending" mom and dad's traits
  - children resemble their parents
  - attributed to "blending of bloods"
  - origin of "bloodlines" & "in the blood"

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## Mendel's work

- pea plants
- traits that came in pairs of alleles
- simple pairs of traits.
- tall vs. short; purple vs. white flowers; wrinkled vs. smooth peas
- offspring always one or the other

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## Cross breeding

- a short and a tall plant, where:
- both parents the same as their parents
- 100% tall plants
- two of these tall offspring
- 75% tall and 25% short plants (roughly)
- Mendel concluded (correctly)
  - each parent carries 2 units of heredity governing each trait
  - sex cells only carry one unit of heredity each; sperm and egg each contribute one unit to pair
  - when combined in offspring, one may dominate the other

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## Genetics continued

- In the pea plant
  - "tall" genes dominate "short"
  - 1 tall and 1 short gene = no blending
  - the plant grows tall
  - short or second gene doesn't matter
- Recessive genes
  - can emerge to take control in subsequent generations
  - dominant - recessive status of human characteristics
- Genotype and Phenotype
  - Genotype: Set of genes a person inherits
  - Phenotype: Set of traits a person actually displays

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## Pea plant third generation

- Remember, both of the parents are tall plants that were the offspring of a tall and a short plant that were the same as their parents.
- So they came from parents that were TT and tt

		Parent #1 Tall	
		T	T
Parent #2 Short	t	tT Tall	tT Tall
	t	tT Tall	tT Tall

		Parent #1	
		T	t
Parent #2	T	TT Tall	Tt Tall
	t	tT Tall	tt Short

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## Risk of Selected Genetic Disorders

**Chromosomal**  
 Down Syndrome 1/800  
 Klinefelter syndrome (XXY) 1/800 men  
 Fragile X syndrome 1/1,200 male births  
 1/2,000 female births  
 Turner syndrome (XO) 1/3,000 women

**Dominant Gene**  
 Polydactyly 1/300 - 1/100  
 Achondroplasia 1/2,300  
 Huntington disease 1/15,000 - 1/5,000

**Recessive Gene**  
 Cystic fibrosis 1/2,500 white persons (risk of being a carrier is 1/25)  
 Sickle-cell disease 1/625 African Americans (risk of being a carrier is 1/10)  
 Tay-Sachs disease 1/3,600 Eastern European Jews (risk of being a carrier is 1/30 - 1/300)

**X Linked**  
 Hemophilia 1/2,500 male babies

**Multifactorial**  
 Congenital heart disease 1/125  
 Neural tube defect 1 - 2/1,000  
 Cleft lip/cleft palate 1/1,000 - 1/5,000

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Sources: ACOG (1990); Blatt (1988); Diamond (1989); Hagerman (1996); Selekman (1993); Stratford (1994).

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## Inheritance of a Dominant Gene Disorder

		Affected Parent (Has the Disorder)	
		D	r
Normal Father	r	Dr Affected (25%)	rr normal (25%)
	r	Dr Affected (25%)	rr normal (25%)
		(50%)	(50%)

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### Inheritance of a Recessive Gene Disorder

		Carrier Mother	
		D	r
Carrier Father	D	DD Normal (25%)	Dr Normal (25%)
	r	Dr Normal (25%)	rr Affected (25%)

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### Inheritance of Hemophilia, a Sex-Linked Disorder

		Carrier Mother	
		X	X
Normal Father	X	XX Normal Daughter (25%)	XX Carrier Daughter (25%)
	Y	XY Normal Son (25%)	XY Hemophilic Son (25%)

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### Cognitive Development

- Watch a brief video - if time permits, will return to discuss.
- Piaget's Theory
  - adaptation- building mental representations of the world through direct interaction with it
    - assimilation- fit new info. into existing framework
    - accommodation- change existing framework to fit new info.
- Piaget's Stages
  - Sensorimotor- object permanence
  - Preoperational- symbolic play, egocentrism
  - Concrete Operations- conservation, logical thought
  - Formal Operations- deductive, abstract reasoning

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## Attachment

- Strong emotional bond between an infant and caregiver
- John Bowlby – evolutionary perspective
  - Strange-Situation Test (separation from caregiver)
    - secure- seek contact when caregiver returns
    - avoidant- avoid contact when caregiver returns
    - resistant- reject comfort when caregiver returns
    - disorganized- adopt odd postures when caregiver returns

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## Episodes in the Strange Situation

Episode	Event	Attachment behavior observed
1	Experimenter introduces parent and baby to playroom and then leaves.	
2	Parent is seated while baby plays with toys.	Parent as a secure base
3	Stranger enters, is seated, and talks to parent.	Reaction to unfamiliar adult
4	Parent leaves room. Stranger responds to baby and offers comfort if upset.	Separation anxiety
5	Parent returns, greets baby, and offers comfort if necessary. Stranger leaves room.	Reaction to reunion
6	Parent leaves room.	Separation anxiety
7	Stranger enters room and offers comfort.	Ability to be soothed by stranger
8	Parent returns, greets baby, offers comfort if necessary, and tries to reinterest baby in toys.	Reaction to reunion

Note: Episode 1 lasts about 30 seconds; the remaining episodes each last about 3 minutes. Separation episodes are cut short if the baby becomes very upset. Reunion episodes are extended if the baby needs more time to calm down and return to play.  
Source: Ainsworth et al., 1978.

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## Attachment

- Primary Drives Theory
- Attachment results from associating the satisfaction of primary drives with the being who satisfies them
- Harlow's Study: Tested primary drives theory in Rhesus monkeys
- 2 surrogate mothers:
  - a wire surrogate that fed the infant
  - a cloth surrogate that did not feed the infant

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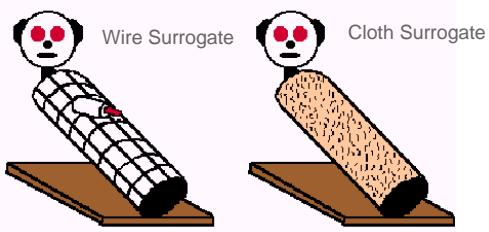
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## Harlow's Study



Results:

- Despite the wire surrogate being a source of food, the infant monkeys attached to the cloth surrogate mother

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## Diane Baumrind's parenting styles

- Parenting behavior
  - Demandingness
    - levels of control & maturity demands
  - Responsiveness
    - clarity of communication & nurturance
- Authoritarian parents
- Authoritative parents
- Permissive (Indulgent) parents
- Disengaged/Uninvolved (Neglectful)

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## Parenting styles

		Demandingness	
		High	Low
Responsiveness	High	Authoritative	Indulgent
	Low	Authoritarian	Indifferent

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## Erikson's Stages

Stage	Age
• Trust vs. Mistrust	0-1
• Autonomy vs. Shame & Doubt	1-3
• Initiative vs. Guilt	3-6
• Industry vs. Inferiority	6-Puberty
• Identity vs. Role Confusion	Adolescence
• Intimacy vs. Isolation	Young Adult
• Generativity vs. Self-absorption	Middle-Age
• Integrity vs. Despair	Old Age

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