

Psychology 105
Chapter 9
Child Development

Reminders

No class April 3 - Spring Break

Exam 2 is on April 10; take-home part also due

If you want me to review the first draft of your term paper, turn it in no later than April 24

Spring 2008

Psychological Development - Outline

Developmental Psychology: Study of change throughout the life span: physical, biopsychological, cognitive, emotional and social change

- Prenatal influences
- The newborn infant
- Infants and toddlers
- Childhood
- Adolescence
- Adulthood - early, middle, late

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Over-arching questions

- **Nature vs. AND Nurture:** What are the relative contributions of heredity and environment to development over the lifespan?
- **Continuous vs. Discontinuous:** Does development take place as a continuous, gradual process, or in discrete step-wise stages?
- **Stability vs Change:** Can we describe ourselves with characteristics that are stable over our life spans, or do we change greatly over time?
- **Universality:** Is the course of development uniform around the world, or does it depend on culture and experience?

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Research Methods

- **Longitudinal:** studies a group of people over a long period of time, often from infancy through adulthood
 - + Each person serves as her own control - observations of the same individual
 - - Loss of data when people drop out
 - - Expensive and requires ongoing commitment of resources
- **Cross-sectional:** compares people at different ages or developmental levels at a single point in time (e.g. compares groups of 5-, 8-, 11- and 14-year olds on ability to solve different types of problems)
 - + Less expensive and time-consuming than longitudinal
 - - Can't be sure that groups are comparable on all variables except age
 - - **Cohort effect** - being a person raised at a particular point in time: historical/social background differs across age groups

Changing Views of Children



Job with 10 sons and daughters, 1372



Hogarth, House of Cards, 1730



Morland, Blind Man's Bluff, 1788



Roberts, Two Boys, ~2000

Prenatal Influences on brain and behavior

- **Teratogens:** agents, such as chemicals and viruses, that can reach the embryo or fetus prenatal development and cause harm
 - Include alcohol, cocaine, heroin, nicotine/tobacco components, German measles virus, flu virus?, radiation, Retin-A (used to treat severe acne), thalidomide, many other prescription, nonprescription and illegal drugs
- **Maternal nutrition** - impacts brain development and birth weight; poor nutrition can lead to a stingy metabolism (conserves calories, risk for obesity) in child
- **Maternal Stress** - risk of premature delivery and increased risk of stress-related diseases in child

Capabilities of Newborn Infants

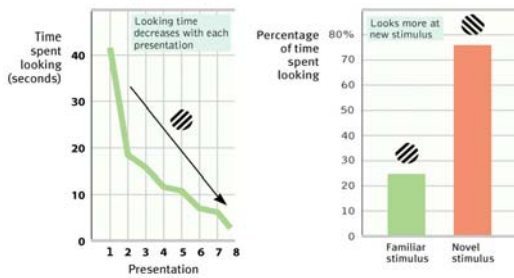
- William James: Newborns awoken to a world of "buzzing, blooming confusion."
 - But - later research has shown that newborns and infants have many capabilities, if we know how to ask:
 - Direction of gaze: assumes infant looks at stimulus that is more "interesting"
 - Habituation: ceasing response to a repeated stimulus (sucking is often used as measure)
 - Orienting: Turning head towards, away from stimulus; turn heads toward a novel or unexpected stimulus
- With all of above, if infant behavior reliably changes when stimulus changes, can assume that infant can discriminate Stimulus A from Stimulus B*
- EEG-type measures: note change in brain waves when stimulus is changed

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Habituation

➤ Decrease of response to repeated, successive stimuli: used to measure what newborn infants can remember and discriminate (Slater, A., et al., 1988)



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Myers, D. G. *Psychology*, 7e, p 139. New York: Worth

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Some Capabilities of Newborn Infants - 2

- Monitoring direction of gaze, habituation and orienting, research has shown that newborns (within week 1):
 - Can distinguish face-like figure from other figures; prefer mother's face most of all
 - Can distinguish and prefer mother's voice over other voices
 - Can distinguish and prefer smell of mother's milk over other women's milk
 - Can learn to kick in order to activate a crib mobile
- Can imitate human facial expressions (newborns)



[Imitation - video](#)

Bower, B. (2003) "Repeat After Me." *Science News*, Vol. 163, No. 21, p. 330.

Bower, B. (2006). "Copycat Monkeys." *Science News*, Vol. 170, No. 11, p. 163

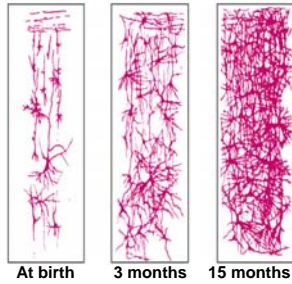
<http://www.youtube.com/watch?v=5kzrnLIRdxw>

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Infants and Toddlers

▪ Maturation

- biological growth processes that enable orderly changes in behavior
- relatively uninfluenced by experience
- Similar progression for most children



Growth of neurons in cortex show maturation process

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Myers, D.G. *Psychology*, 8e, p 144. New York: Worth

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Behavior development and maturation - examples

Most infants follow the same sequence of development, with milestones occurring within a narrow range of a few months.

- Physical: hold up head, sit without support, crawl, stand, walk, run; replace many reflexive movements with voluntary, purposive movements
- Vocalizations: become more and more varied
 - Infants in 1st 10 months utter most phonemes* from most human languages, but more from language of main caregivers
 - Prune phonemes to match sounds of main caregivers
 - Utter word-like sounds: "begin to talk"
- Fear of strangers develops starting around 8 months

*phoneme – smallest unit of sound that can convey a difference in meaning, like *b* in *bat* vs *c* in *cat* (buh vs kuh), or *i* in *sit* vs *e* in *set* (ih vs eh), or *r* in *rice* vs *l* in *lice* (ruh vs luh)

Known languages all have phonemes, but they don't all have the same ones or the same numbers of them:

Rotokas (11 phonemes); !Xóó (112); English (42)

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Childrens' Temperaments

- **Temperament** – a person's characteristic style, tempo and mood of behavior, emotional reactivity and intensity
- New York Longitudinal Study of Temperament (Chess and Thomas, 1996)
 - Studied children from infancy on
 - identified four categories of temperament
 - Easy children (40%)
 - Difficult children (~10%)
 - Slow-to-warm-up children (15%)
 - Mixed, not easily classified (~35%)

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Attachment

- **Attachment:** emotional bond infants and children develop for their caregivers
- **Bonding:** parents' tie to infant that develops within hours of birth
- **Imprinting:** infant animals' formation of attachment within hours of birth, following first moving thing that they see
- **Why do infants develop intense attachment to caregivers?**
 - Because they provide food?
 - Other reasons?
 - Harry Harlow: demonstrated importance of "contact comfort" over food in infant monkeys
 - Cloth vs. Wire mothers
[12A Harlow wire cloth mother.MPG](#)
 - Response to fear-provoking stimulus
[12B Harlow frightening stimulus.MPG](#)
 - Exploration of a strange place
[12C Harlow exploration.MPG](#)

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Attachment

- **Bowlby:** the type of attachment formed w/ parent depends on quality of care given during first year
- **Ainsworth:** studied development and types of attachment using "strange situation" in which mother of 1-yr old leaves infant and periodically returns: infant's behaviors are observed
- **Types of attachment**
 - Secure (majority of infants, across cultures)
 - Insecure-avoidant (~20%) [Attachment – video clip](#)
 - Insecure-resistant (~10%) http://www.youtube.com/watch?v=v6725Sw_4Cs
 - Disorganized-disoriented
- **Securely attached infants are more likely to be confident, emotionally-adjusted adults**
- **Van den Bloom:** found that temperamentally difficult infants became securely attached if their mothers were given training in sensitive responding (68%); if mothers were given no training, only 28% became securely attached.

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Parenting Style

- **Influence of Parenting Style (Baumrind)**
 - **Authoritarian**
 - Impose rules and expect obedience
 - Rigid and controlling, impose harsh discipline
 - "Don't interrupt." "Why? Because I said so."
 - Children likely to be distrustful, inhibited, moody, withdrawn
 - **Permissive**
 - submit to children's desires, lax in setting limits, make few demands, use little punishment
 - Children likely to be impulsive, lack self control, poor interpersonal skills
 - **Authoritative**
 - both demanding and responsive
 - set rules, but explain reasons and encourage open discussion
 - Children likely to have high self-esteem, be popular with peers, self-reliant, competent, respectful and assertive

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Erikson's Stages of Psychosocial Development

Approx. age	Stage	Outcomes
Infant (1st year)	Trust vs. mistrust towards social env.	If needs are dependably met, infants develop a sense of basic trust .
Toddler (2nd year)	Autonomy vs. shame and doubt	Self-control and independence , or self-doubt if parents demand too much
Preschooler (3-5 years)	Initiative vs. guilt	Preschoolers learn to initiate tasks and carry out plans , or they may feel guilty about efforts to be independent if ridiculed and criticized
Elementary Schooler (6-12 yrs)	Industry (competence) vs. inferiority	Children learn the pleasure of applying themselves to tasks , or they feel inferior if they experience too many failures

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Erikson's Stages - 2

Approximate age	Stage	Outcomes
Adolescence (teens into 20's)	Identity vs. role confusion	Teenagers work at refining a sense of self by testing roles and then integrating them to form a single identity , or they become confused about who they are.
Young Adult (20's to early 40's)	Intimacy vs. isolation	Young adults struggle to form close relationships and to gain the capacity for intimate love , or they feel socially isolated.
Middle Adult (40's to 60's)	Generativity vs. stagnation	The middle-aged discover a sense of contributing to the world , usually through family and work, or they may feel a lack of purpose.
Late Adult (late 60's and up)	Integrity vs. despair	When reflecting on his or her life, the older adult may feel a sense of satisfaction or failure.

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- ### Erikson's Stages - critique
- Stages are useful in "explaining" how a present state came about (retrospective explanation), less useful in predicting a future state
 - Work based on theory and case studies - interesting framework, but need to look at supporting and contradicting data, especially for proposition that people can get 'stuck' in a stage if they don't successfully work through its challenges
 - Critics of identity theory point to cases where adults rediscover themselves and adapt with a new life understanding
 - Major contribution: Erikson extended the perspective of "development" to encompass the entire life span
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Influences on Personality and Social Development

Genetics vs. Parents vs. Peers

- Genes largely responsible for basic temperament
- Parents make major contributions to the development of personality and social adjustment, attitudes, moral behavior... or are they?
- Judith Harris: Peers are as or more important than parents in influencing their childrens' attitudes and moral behavior
 - sparked large controversy a few years ago

Childhood - Cognitive Development

Some vocabulary -

- **Schema** - a concept or framework that organizes and interprets information and enables interaction with the world
- **Adaptation** - adjustment allowing better interacting with environment
 - **Assimilation** - interpreting and incorporating one's new experience in terms of one's existing schemas
 - **Accommodation** - adapting one's current understandings (schemas) to incorporate new information
- During early childhood, children learn ways of organizing, associating and categorizing information, to discriminate between members of categories, and to classify as "same" category members that appear different (cars, different models)

Piaget's Stages of Cognitive Development

Typical Ages	Description of Stage	Developmental Phenomena
Birth - 2 years	Sensorimotor Experiencing the world through senses and actions (looking, touching, mouthing); discovering relationship between body and environment	<ul style="list-style-type: none"> •Manipulating objects •Object permanence •Stranger anxiety •Building schemas
2 - 6 years	Preoperational Representing things with words and images but lacking logical reasoning; recognition of differences in thinking between self and others	<ul style="list-style-type: none"> •Pretend play •Egocentrism •Language Development •Beginning conservation •Elaborating schemas •Theory of mind
7 - 11 years	Concrete operational Thinking logically about concrete events; grasping concrete analogies and performing arithmetical operations	<ul style="list-style-type: none"> •Conservation •Concrete logical transformations •Less egocentric
12 - adult	Formal operational Abstract reasoning	<ul style="list-style-type: none"> •Abstract logic •Potential for moral reasoning

Sensorimotor Stage - Object Permanence

- **Object Permanence** - the awareness that things continue to exist even when they are not visible
- Seen in babies starting around 8 months of age

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Young infants lose interest when a toy is hidden behind paper

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Older infants will search for toy after it is hidden

[Video clip – no object permanence](http://www.youtube.com/watch?v=nwXd7WvWNHY)
<http://www.youtube.com/watch?v=nwXd7WvWNHY>

[Video clip – object permanence](http://www.youtube.com/watch?v=IKZ9IPRkKkU)
<http://www.youtube.com/watch?v=IKZ9IPRkKkU>

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Preoperational Stage

- Use of language symbolically to represent objects, lacking logical reasoning
- Concrete representations and play
- Concept of conservation of number develops earlier...
 - ... than concept of conservation of substance (end of preoperational or beginning of operational stage)



> ? <



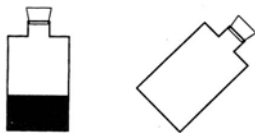
Which glass has the most water? (centration and irreversibility)

[Conservation – video clip](http://www.youtube.com/watch?v=MpREJIrpgv8)
<http://www.youtube.com/watch?v=MpREJIrpgv8>

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Conservation: Water Bottle Task

- The upright bottle on the left is partially filled with liquid. Draw a line on the tilted bottle on the right to show where the liquid line would appear.



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Preoperational Stage - 2

➤ **Theory of mind:** The ability to understand another's mental state (cognitions, emotions)

- Begins to develop between ages 3½ and 4½, typically
- Adults are normally very good at this
- Problem on the right probes such ability in children: Children under 3½ normally choose the blue cupboard, while children over 4½ normally choose the red cupboard
- People with autism often cannot infer the likely cognitions and emotions of others

Figure from Myers, D. G. (2007) *Psychology* 8e, p 151. New York: Worth

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Piaget - Concrete Operational Stage

- Thinks logically about concrete events
- Basic arithmetic operations
- Concepts of conservation understood

Piaget - Formal Operational Stage

- Can think abstractly and logically
 - "if, then, else"
 - If $A > B$ and $B > C$, is $A > C$?

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Piaget: Contributions and Criticisms

- + Orderly progression of children's cognitive development is seen in most cultures, and sequence he suggested is pretty accurate
- + Contributed to recognition that in yet another way, cognition, children are not simply small adults: most young children are not capable of using adult logic. Strong influence on education.
- Modern psychologists find evidence for more gradual transitions rather than discrete stages of cognitive development, and find great overlap between capabilities proposed in Piaget's successive stages; variation in ages is also seen in different cultures
- Underestimation of children's capabilities: found in contemporary research by reframing the question
- There are many adolescents and adults who cannot or do not use systematic logic and abstraction in their thinking; some cannot take the point of view of someone else, despite 'normal' intelligence

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Vygotsky: Sociocultural Theory of Development

Interested in integrating Marxist social theory with individual psychology

According to Vygotsky's theory:

- Social interaction and culture plays a fundamental role in the development of cognition; cognition develops out of social interactions
- Adults are 'experts' who teach children the fundamental skills, values, and behaviors of their culture
- Social learning takes place within a **Zone of Proximal Development (ZPD)** - the range of behaviors between those they currently perform and those they are able to learn with guidance
- Scaffolding: tailoring degree and type of instruction to child's current ability
- As competencies develop, less guidance and more instruction is needed
- Most of his work was in the area of language learning

Over-arching questions, revisited

- Nature vs. Nurture: What are the relative contributions of heredity and environment to development over the lifespan?
 - Both are important. When heredity is weak, environment assumes a more important role.
- Does development take place as a continuous, gradual process, or in discrete stages?
 - Both - stages are seen, but transitions are smooth and times of transition vary between people.
- Can we describe ourselves with characteristics that are stable over our life spans, or do we change greatly over time?
 - Both, depending on the characteristic in question.
- Is the course of development uniform around the world, or does it depend on culture and experience?
 - Both - maturation rates are fairly uniform, but culture and experience can impact ages and extent of development

Supplementary material

- More information on Kohlberg's Theory of Moral Development can be found on pp. 387 - 391

Kohlberg's Levels of Moral Development	
I. <u>Preconventional</u> 1: Punishment and Obedience 2: Self-Interest	"Right" - avoids punishment, gains rewards
	"Right" - I benefit, we both benefit
II. <u>Conventional</u> 3: Social Expectations 4: Law and Order	"Right" - conforms to social expectations
	"Right" - maintain law and order, respect authority
III. <u>Postconventional</u> 5: Legal Principles 6: Universal Moral Principles	"Right" - protects basic rights of society
	"Right" - self-chosen ethical principles, respect for ideals

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Applying Kohlberg's Levels to Politics - 1			
Level	Stage	Argument against War	Argument for War
I. Preconventional	1. Punishment and obedience	It would hurt our economy	Saddam has WMDs that can be used against us
	2. Self Interest	More money for domestic issues	More security of the oil supply
II. Conventional	3. Interpersonal Expectations	Don't want to appear too militaristic to the world	Don't want world to see us as weak
	4. Law and Order	War is killing and killing is against the law	UN has passed written resolutions which should be upheld

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Applying Kohlberg's Levels to Politics - 2			
Level	Stage	Argument against War	Argument for War
III. Postconventional	5. Legal Principles	Even though Iraqis may have WMDs, making war on people who have not attacked us is not allowed by international law	Situation is extreme enough that both the Iraqi and the global society's rights are threatened and must be defended against Saddam
	6. Universal Moral Principles	Atrocities have been committed, and threats exist, but it would be an even greater atrocity to wage war	Evil is on the march, and it would be morally wrong to allow it to continue

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