



Development

Chapter 5

Defining Terms

- Developmental Psychology
 - Branch of psychology that specifically examines the physiological, cognitive, and emotional changes in an organism from conception to death.
 - How do Developmental Psychologists study individuals and groups?

Cross-Sectional Study

Study people of different ages at the same point in time

- Advantages
 - Inexpensive
 - Can be completed quickly
 - Low attrition (drop-out)
- Disadvantages
 - Different age groups are not necessarily much alike- generational differences?
 - Differences may be due to group differences rather than age

Longitudinal Study

- Study the same group of people over time
 - Advantages
 - Detailed information about subjects
 - Developmental changes can be studied in detail
 - Eliminates cohort differences
 - Disadvantages
 - Expensive and time consuming
 - Potential for high attrition
 - Differences over time may be due to assessment tools and not age

Prenatal Development

- Prenatal - period of time from conception to birth
- Zygote – a fertilized egg with full set of genes
- Embryo
 - From about two weeks after conception to three months after conception (most of first trimester)
 - Organs begin to form; heartbeat
- Fetus
 - Three months after conception to birth (second and third trimesters)
 - Organs continue to form; response to sounds

Prenatal Development

Placenta

- Connects fetus to mother
- Brings oxygen and nutrients and takes away wastes

Teratogens

- Any agent that causes a structural abnormality following fetal exposure during pregnancy
- Fetal alcohol syndrome
 - Occurs in children of women who consume large amounts of alcohol during pregnancy
 - Symptoms include facial deformities, heart defects, stunted growth, and cognitive impairments

The Newborn Baby

aka *NEONATE*



The Competent Newborn:

Reflexes

Rooting

Baby turns its head toward something that brushes its cheek and gropes around with mouth

Sucking

Newborn's tendency to suck on objects placed in the mouth

Swallowing

Enables newborn babies to swallow liquids without choking

Grasping

Close fist around anything placed in their hand

Stepping

Stepping motions made by an infant when held upright

Babinski

Stroke bottom of foot – toes fan and curl

Moro

Drop baby unexpectedly (?!) or make loud noise and it will throw arms out, arch back and then grasp for something

Crawling

Place neonate on stomach and press down on soles of feet – arms and legs move rhythmically

The Competent Newborn: Sensory Learning

- In addition to reflexes present at birth, neonates also have the ability to *learn*
- **Habituation** - basic type of learning involving decreased response to a stimulus judged to be of no importance/novelty
- Visual learning – focus on FACES
- Olfactory learning – fully functioning; smell of mother
- Auditory learning – response to mother’s voice
- Taste – Fully functioning; preference for sweets!

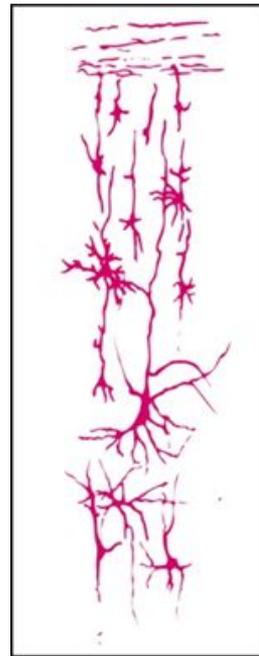


Infancy and Childhood

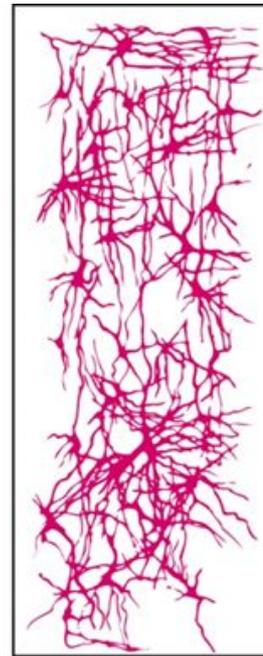
Liam (newborn and
and Molly Jean

Physical Development

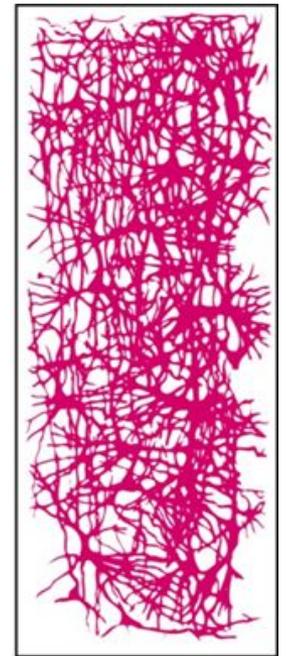
- Brain Development
 - In-utero the brain forms nerve cells at nearly one quarter million per minute
 - As you grow and learn neural pruning occurs



At birth



3 months



15 months

Physical Development: Body and Brain

- With few exceptions physical development occurs universally- babies roll over before they sit, they crawl before they walk...
- **Maturation** must occur first- cerebellum must develop before walking, muscle control must develop before potty training
 - **Automatic biological unfolding of development in an organism as a function of passage of time**
 - Relatively uninfluenced by experience

Memory Development

- Memory not solidified until after 3rd birthday
 - Known as “infantile amnesia”
 - Development of hippocampus?





When you teach a child something
you take away forever his chance of
discovering it for himself.

— *Jean Piaget* —

AZ QUOTES

Piaget's Stages of Cognitive Development

Cognitive Development

- **Cognition** – all mental activities associated with thinking, knowing, remembering and communicating
- **Jean Piaget**
 - Cognitive developmental psychologist who studied intellectual development in children
 - Stage-based theory of cognitive development



How do children grow intellectually?

- Intellectual growth as a process of **adaptation** (adjustment) to the world. This happens through
 - Formation of **schemas** – mental frameworks
 - **Assimilation** – using an existing schema to understand a new situation
 - **Accommodation** – modifying schemas to incorporate new information

Assimilation

AMERICAN



Ball



Ball



Ball



Ball

Accomodation

AMERICAN



Face



Basketball



Baseball



Wheel

Piaget's Stages of Development

- Sensorimotor Stage (birth to 2 years)
 - Take in world through senses
 - Stranger Danger
 - Object permanence and the A not B error
 -



Piaget's Stages of Development

- Preoperational Stage (2-7 years)
 - **Animism:** the attribution of a soul to plants, inanimate objects, and natural phenomena
 - **Pretend Play**
 - Moving from **Egocentrism**- “everyone feels like I do” into developing of a **theory of mind**, others feel differently than I do, they see and experience the world for themselves
 - ****DVD**



Piaget's Stages of Development

- Concrete Operations (7-11 years)
 - Logical reasoning about concrete events
 - Fully formed theory of mind
 - Conservation
- Formal Operations (12 through adulthood)
 - Hypothetical problems solving
 - Understand abstract ideas

Stinkin' Pigs Can't Fly

Sensorimotor



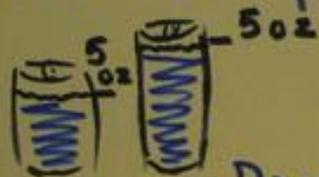
Object Permanence · Separation Anxiety

Preoperational



Animism: Egocentrism
Centration

Concrete Operational



Reversibility: Logic
Conservation: Theory of Mind

Formal Operational



Abstract Thought
Hypothetical Thought

Piaget's Stages - Summary

TABLE 5.1

PIAGET'S STAGES OF COGNITIVE DEVELOPMENT

Typical Age Range	Description of Stage	Developmental Phenomena
Birth to nearly 2 years	<i>Sensorimotor</i> Experiencing the world through senses and actions (looking, hearing, touching, mouthing, and grasping)	<ul style="list-style-type: none">• Object permanence• Stranger anxiety
2 to about 6 or 7 years	<i>Preoperational</i> Representing things with words and images; using intuitive rather than logical reasoning	<ul style="list-style-type: none">• Pretend play• Egocentrism
About 7 to 11 years	<i>Concrete operational</i> Thinking logically about concrete events; grasping concrete analogies and performing arithmetical operations	<ul style="list-style-type: none">• Conservation• Mathematical transformations
About 12 through adulthood	<i>Formal operational</i> Abstract reasoning	<ul style="list-style-type: none">• Abstract logic• Potential for mature moral reasoning



Social Development

Criticisms of Piaget's Theory

- Many developmental theorists such as **Vygotsky** questioned the assumption that there are distinct stages in cognitive development
- Criticism of notion that infants do not understand world
- Piaget may have underestimated influence of social interaction in cognitive development

Lev Vygotsky

- Russian psychologist, contemporary of Piaget but his work not published in English until much later (1970's)
- Focused on the role of *culture* on cognitive development



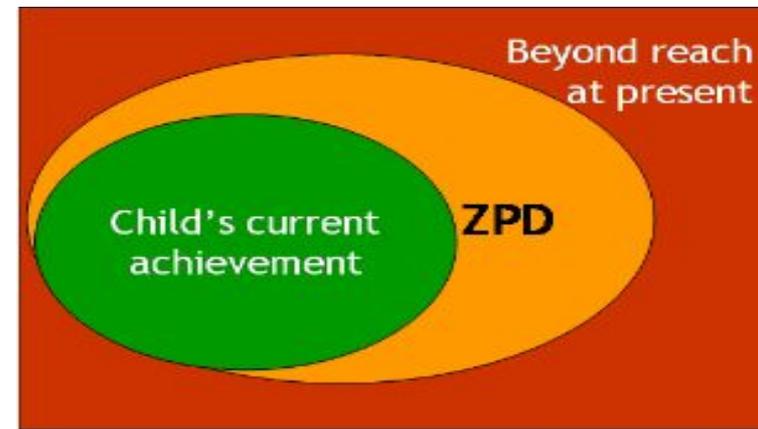
Vygotsky's Theory

- Cognitive development = active internalization of problem-solving processes as a result of interaction with others (“social constructivism”)
 - ie, learning is ACTIVE, SOCIAL, and CREATIVE
- Children learn how to think through their interactions with others
- Where Piaget saw the child as a *scientist*, Vygotsky saw the child as an *apprentice*

Zone of Proximal Development

- In one of your subjects/hobbies/interests, think of...
 - One thing you can do well on your own
 - One thing you can do if someone helps you
 - One thing you can't do at all

Zone of Proximal Development (ZPD)



- The gap between what a child can do on their own and what a child can do with support
- The child will not be able to take the next step in their development unless they are supported in the ZPD
- This support is known as **scaffolding** and is seen as the main role of adults/teachers

Zone of Proximal Development

- Vygotsky's view:

“...what a child can do with assistance today she will be able to do by herself tomorrow.” (Vygotsky, 1978)

- Contrast with Piaget:

“Every time we teach a child something, we keep him from inventing it himself. On the other hand, that which we allow him to discover for himself will remain with him visible for the rest of his life.” (Piaget, in Piers, 1972)

Social Development: Attachment



Stranger Anxiety

Appears around 8 months –mobility

Protective mechanism

Attachment through Contact

Humans form a bond with those who care for them- Based upon interaction with caregiver

Harry Harlow's work: role of physical contact in attachment

Attachment through Familiarity

Imprinting (Lorenz): tendency to follow the first moving thing seen as the basis of attachment

Occurs in many species of animals in a critical period

Top: Harlow's experiment;
Bottom: Lorenz and
imprinting

Social Development: Attachment

- Attachment Differences
 - Mary Ainsworth's Strange Situation
 - Measured Types of Attachment
 - Secure attachment: Child explores freely while the mother is present, will engage with strangers, will be visibly upset when the mother departs, and happy to see the mother return.

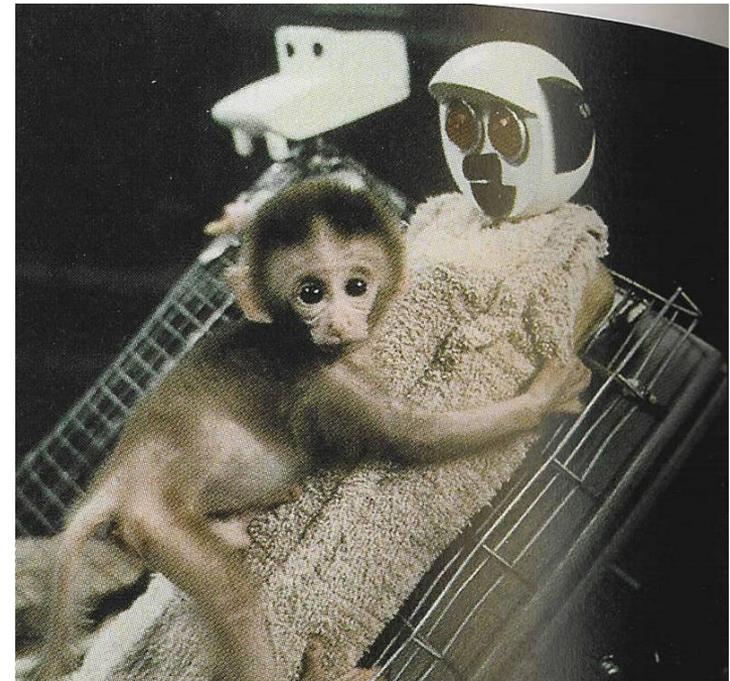
Types of Attachment

Insecure Attachment Types:

- Ambivalent Attachment- child becomes distressed when parent leaves, cannot depend on caregiver to be there when needed
- Avoidant Attachment- tends to avoid caregiver, when offered a choice shows no preference between caregiver and complete stranger

Deprivation of Attachment

- Impact of denying infant monkeys physical comfort from their mother
- Cases of “Genie” & “Victor”
- Daycare?



Self Concept

Self Concept: understanding of who we are



If infants can achieve attachment, children must achieve a positive self concept

Develops gradually in first year (“Mirror Test”)

By 18 months, children know **THEY** are the image in the mirror, and that it is not another person

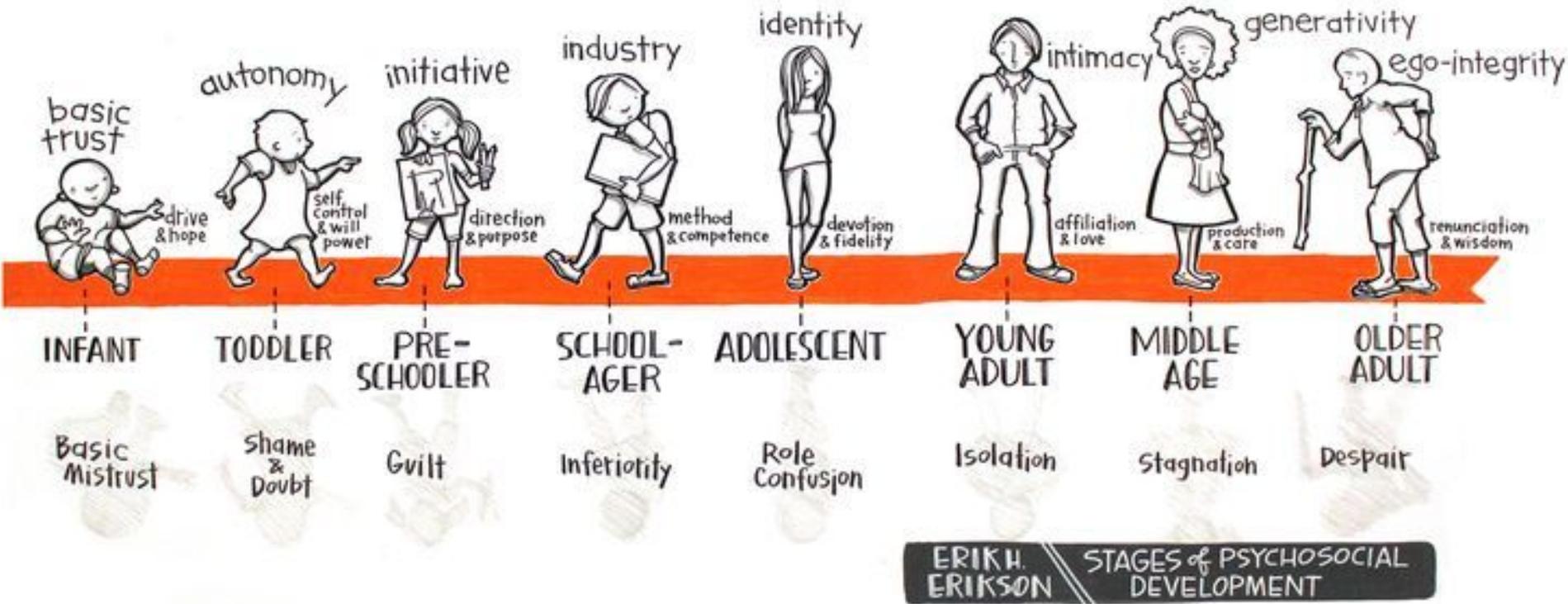
Children with a positive self concept are more confident, assertive, optimistic, and sociable, but how is this achieved?

Parenting Style

- Diana Baumrind's 4 Parenting Styles may help explain...
 - Authoritarian – demanding not responsive
 - Permissive – not demanding but responsive
 - Neglectful – not demanding, not responsive
 - Authoritative – demanding and responsive
- Impact of parenting styles on children?
 - Authoritative appears to be best, but...
 - Correlational NOT causal research!

Baumrind's Parenting Styles: Comparison

Parenting Styles	
<p>Authoritative</p> <p>Authoritative parents are demanding and responsive, controlling but not restrictive. This child-centered pattern includes high parental involvement, interest, and active participation in the child's life; open communication; trust and acceptance; encouragement of psychological autonomy; and awareness of where children are, with whom, and what they are doing</p>	<p>Authoritarian</p> <p>Authoritarian parents are demanding, but not responsive. They show little trust toward their children, and their way of engagement is strictly adult-centered. These parents often fear losing control, and they discourage open communication.</p>
<p>Permissive</p> <p>Permissive parents are responsive, warm, accepting, and childcentered, but non-demanding. They lack parental control.</p>	<p>Neglectful</p> <p>Neglectful parents are neither responsive nor demanding. They do not support or encourage their child's self-regulation, and they often fail to monitor or supervise the child's behavior. They are uninvolved.</p>



Erikson's Psychosocial Stages of Development

Stage 1 (birth - 1)

Trust vs. Mistrust

- Infants must rely on others for care
- Consistent and dependable caregiving and meeting infant needs leads to a sense of trust
- Infants who are not well cared for will develop mistrust
- Type of attachment is measured through separations with caregiver

Stage 2 (1-3 years)

Autonomy vs. Shame and Doubt

- Children are discovering their own independence
- Those given the opportunity to experience independence will gain a sense of autonomy
- Children that are overly restrained or punished harshly will develop shame and doubt

Stage 3 (3-5 years)

Initiative vs. Guilt

- Children are exposed to the wider social world and given greater responsibility
- Sense of accomplishment leads to initiative, whereas feelings of guilt can emerge if the child is made to feel too anxious or irresponsible

Stage 4 (5-12 years)

Industry vs. Inferiority

- Stage of life surrounding mastery of knowledge and intellectual skills
- Sense of competence and achievement leads to industry
- Feeling incompetent and unproductive leads to inferiority

Stage 5 (adolescence)

Identity vs. Confusion

- Developing a sense of who one is and where s/he is going in life
- Successful resolution leads to positive identity
- Unsuccessful resolution leads to identity confusion or a negative identity

Stage 6 (young adulthood)

Intimacy vs. Isolation

- Time for sharing oneself with another person
- Capacity to hold commitments with others leads to intimacy
- Failure to establish commitments leads to feelings of isolation

Stage 7 (middle adulthood) Generativity vs. Stagnation

- Caring for others in family, friends and work leads to sense of contribution to later generations
- Stagnation comes from a sense of boredom and meaninglessness

Stage 8 (late adulthood to death)

Integrity vs. Despair

- Successful resolutions of all previous crises leads to integrity and the ability to see broad truths and advise those in earlier stages
- Despair arises from feelings of helplessness and the bitter sense that life has been incomplete



Moral Development

Moral Development

- *Learning to understand & follow the rules of society*
- Two aspects of Moral Development:
 - **Moral Reasoning**
 - *How to think using rules/principles/emotion*
 - **Moral Conduct (prosocial, antisocial)**
 - *How to ACT*

MR. HEINZ AND THE DRUGGIST

A woman was near death from a very unusual kind of cancer. The doctors thought that one drug, a form of radium discovered by a pharmacist that lived in the same town might save her life. The pharmacist paid \$400 for the radium and charged \$4000 for a small dose of the drug. Mr. Heinz, the sick woman's husband, went to everyone he knew to borrow money, and tried every legal means to raise the money, but he could only raise \$2000, half the selling price.

Mr. Heinz pleaded with the pharmacist, explaining to him that his wife was dying. He presented several options to the pharmacist: sell the drug at a cheaper price, let Heinz pay for the drug in installments, or let Heinz pay at a later date. The pharmacist said, "No, I discovered the drug and I'm going to make money from it." Heinz is now considering breaking into the drug store and stealing the drug for his wife.

So what would you do?

- Question 1: Should Heinz steal the drug for his wife? why or why not?
- Question 2: Should Heinz steal the drug if the dying person is not a particularly close friend? why?

And the story continues...

Mr. Heinz decided to break into the store, steal the drug and give it to his wife. Officer Brown, a police officer who knows Heinz, remembered seeing Heinz in the vicinity of the drug store the night of the break-in. Brown wonders whether he should report that Heinz was the robber.

Question 3: Should Heinz' friend, Officer Brown, report Heinz to the police for stealing the drug? Why or why not?

And the story ends...

Officer Brown reports Heinz who is arrested and brought to court. A jury finds Heinz guilty of committing the crime. It is up to the judge to determine the punishment.

Question 4: Should the judge give Heinz a jail sentence or give him probation for stealing the drug? Why or why not?

The Heinz Dilemma

- Preconventional Morality
 - Avoid Punishment
 - Gain Reward
- Conventional Morality
 - Gains approval/avoids disapproval
 - Does duty to support society/avoids dishonor and guilt
- Postconventional Morality
 - Affirms agreed-upon rights
 - Abstract autonomous moral principles

Lawrence Kohlberg

Interviewed 72 boys (ages 10, 13, and 16), from both middle- and lower-class families in Chicago.

Posed nine moral dilemmas (like your Heinz) and analyzed subjects' reasoning.

Interviewed subjects every 3-4 years for 20 years.

Later added younger children, delinquents, and boys and girls from other cities and countries

Found that children move through predictable stages in moral reasoning.



Kohlberg's Theory of Moral Development

Stage 1 (*Pre-conventional*) children have not yet internalized moral rules (< 9 years old)

REWARDS AND PUNISHMENT

1. Fear of punishment

“Stealing is bad. (Why?) Because he will get punished.”

Heinz can steal it because he asked first and it's not like he stole something big; he won't get punished.”

2. Self-interest and exchange (different authorities have different expectations, so serve yourself).

“Heinz might steal the drug if he wanted his wife to live, but he doesn't have to if he want to marry someone younger and better-looking.”

“Heinz was right to steal the drug because the druggist was unwilling to make a fair deal; he was trying to rip Heinz off.”

“Heinz should steal for his wife because she might return the favor someday.”

Stage 2 (Conventional)

NORMS AND SOCIAL ORDER (> 9 years old)

3. Conforming to gain approval (“good girl/boy”)

- *“It was really the druggist’s fault, he was unfair, trying to overcharge and letting someone die. Heinz loved his wife and wanted to save her. I think anyone would. I don’t think they would put him in jail. The judge would look at all sides, and see that the druggist was charging too much”*

4. Maintaining order, fulfilling obligations, upholding laws

- *“If everybody did as he wanted to do, set up his own beliefs as to right and wrong, then I think you would have chaos. The only thing I think we have in civilization nowadays is some sort of legal structure which people are sort of bound to follow. [Society needs] a centralizing framework.*

Stage 3 (Post-Conventional)

RIGHTS AND PRINCIPLES

Must be formal operational (> adolescent)

5. Emphasis on basic human rights and democratic process.

- “It is the husband’s duty to save his wife. The fact that her life is in danger transcends every other standard you might use to judge his action. Life is more important than property. From a moral standpoint, Heinz should save the life of even a stranger, since to be consistent, the value of life means any life.”

6. Universal ethical principles

- Laws are only valid insofar as they are grounded in justice. In an ethical conflict (such as Heinz’s), if all parties could objectively look through the eyes of all other parties involved, the just thing to do would be evident because justice is not relative.

Name that Stage

The following are actual quotations from U.S. debates on a resolution supporting the administration's policy on Iraq's invasion of Kuwait.

Arguments Against U.S. Involvement:

1. "because we don't want to appear too militaristic..."
2. "We shouldn't consider war..." "because it would hurt our economy..."
3. "even though the situation is bad, war is damaging to people and property and society agrees that is bad..."
4. "because we'll have more money for domestic issues..."
5. "because war is killing and killing is against the law..."
6. "although atrocities have been committed, it would be an even greater atrocity to wage war..."

Arguments For U.S. Involvement

1. "We should consider war" "because our oil is threatened...."
2. "because the U.N. has laid down written resolutions which should be upheld..."
3. "the situation is extreme enough that society's rights are threatened and need to be defended..."
4. "because we can gain security of the oil supply..."
5. "because we don't want the world to see us as weak...."
6. "evil is on the march, and it would be morally wrong to allow it to continue...."

Criticism of Kohlberg's Theory

1. Level 6 is hypothetical. None of his subjects answered in this way.
2. Some non-western cultures place a greater emphasis on interdependence and the welfare of the group. By creating his hierarchy using westerners, he unfairly banished this ethic to a lower level.
3. Women also are more likely to have an ethic of care (Carol Gilligan). By creating his hierarchy with only males, he unfairly banished this female ethic to a lower level.



Carol Gilligan's Ethics of Care

Gilligan did a similar study with women subjects (ask pregnant women who were considering abortion their beliefs about the morality of abortion) and came up with her own scale:

Pre-conventional: moral behavior is self-serving

Conventional: moral behavior is self-sacrificing.

Post-conventional: moral behavior attempts to avoid harm to self and others.

- A. FOCUS ON SELF TO EXCLUSION OF OTHER
- B. FOCUS ON OTHER TO EXCLUSION, DETRIMENT OF SELF
- C. FOCUS ON ALL WHICH INCLUDES SELF

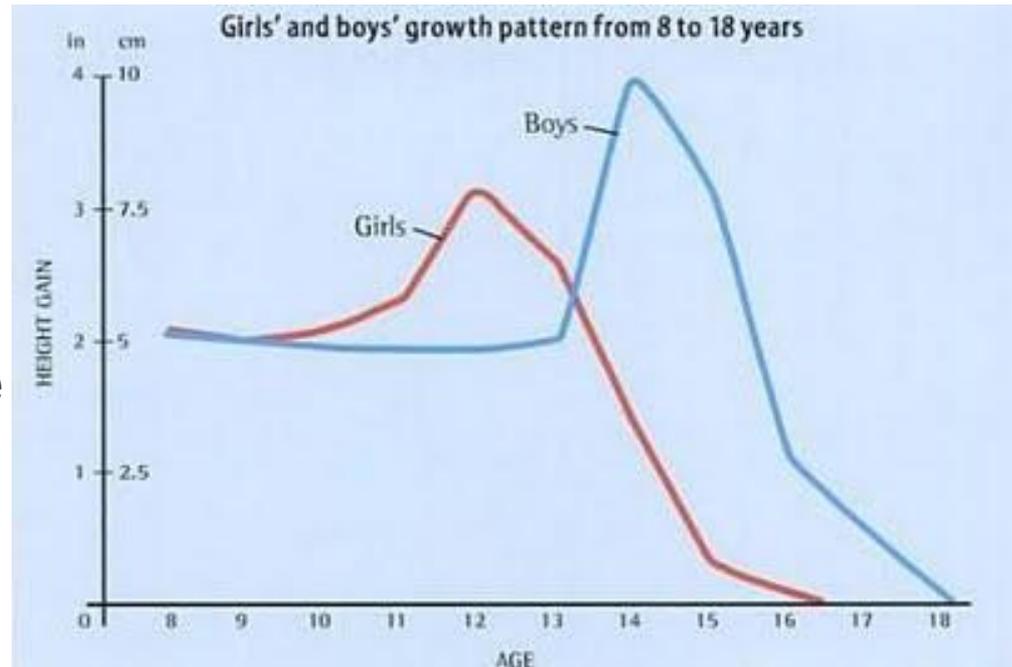


Biological Changes

Adolescence-
Adulthood

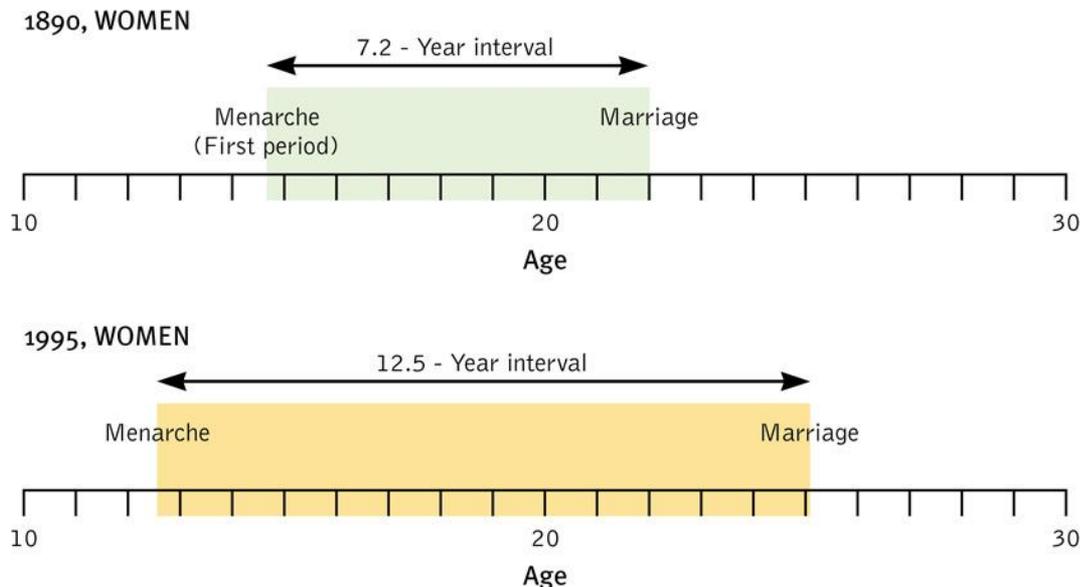
Puberty

- Period of sexual maturation, when a person becomes capable of reproducing
- Primary vs secondary sexual characteristics
 - Primary= body structures that make sexual reproduction possible (ovaries, testes)
 - Secondary= non-reproductive sexual characteristics (breasts, body hair)



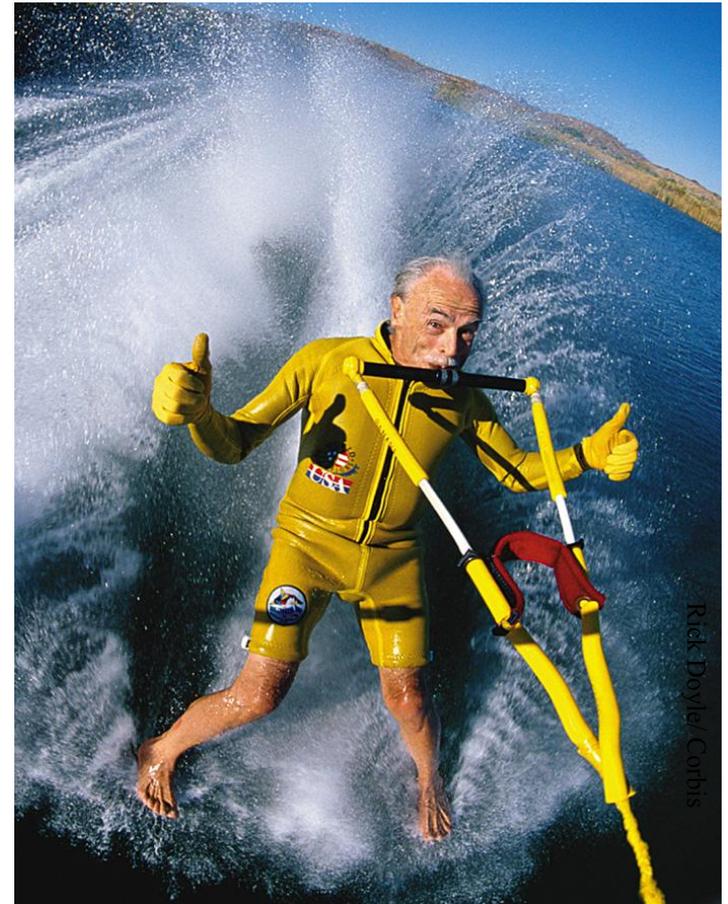
Emerging Adulthood

Emerging adulthood spans ages 18-25. During this time, young adults may live with their parents and attend college or work. On average, emerging adults marry in their mid-twenties.



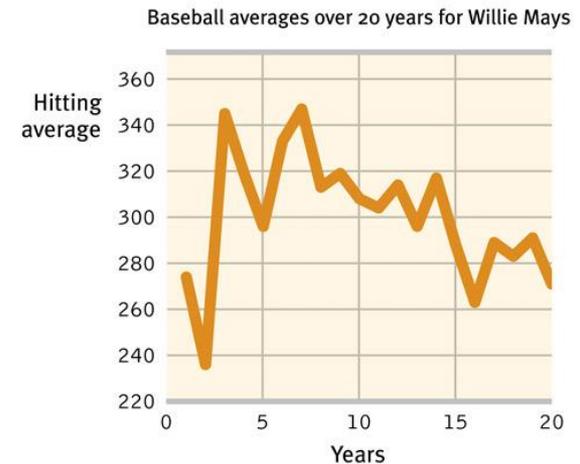
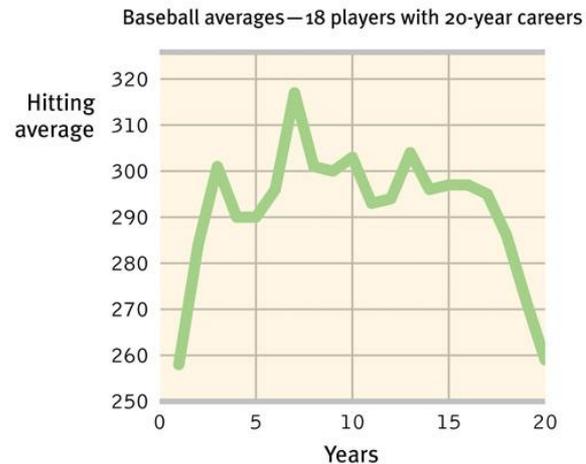
Adulthood

Although adulthood begins sometime after a person's mid-twenties, defining adulthood into stages is more difficult than defining stages during childhood or adolescence.



Middle Adulthood

Muscular strength, reaction time, sensory abilities and cardiac output begin to decline after the mid-twenties. Around age 50, women go through menopause, and men experience decreased levels of hormones and fertility.



Willie Mays batting performance.

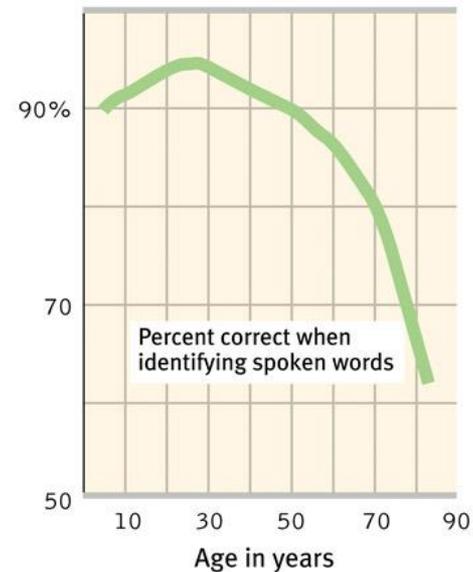
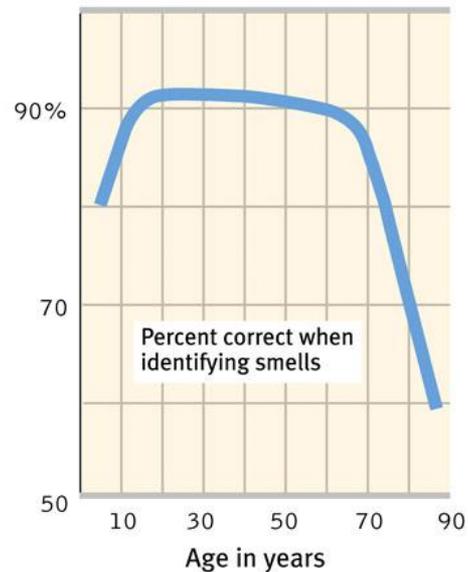
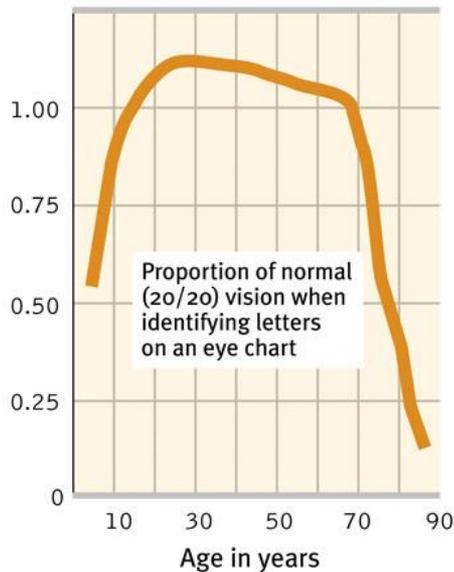
Old Age: Life Expectancy

Life expectancy at birth increased from 49% in 1950 to 67% in 2004 and to 80% in developed countries. Women outlive men and outnumber them at most ages.



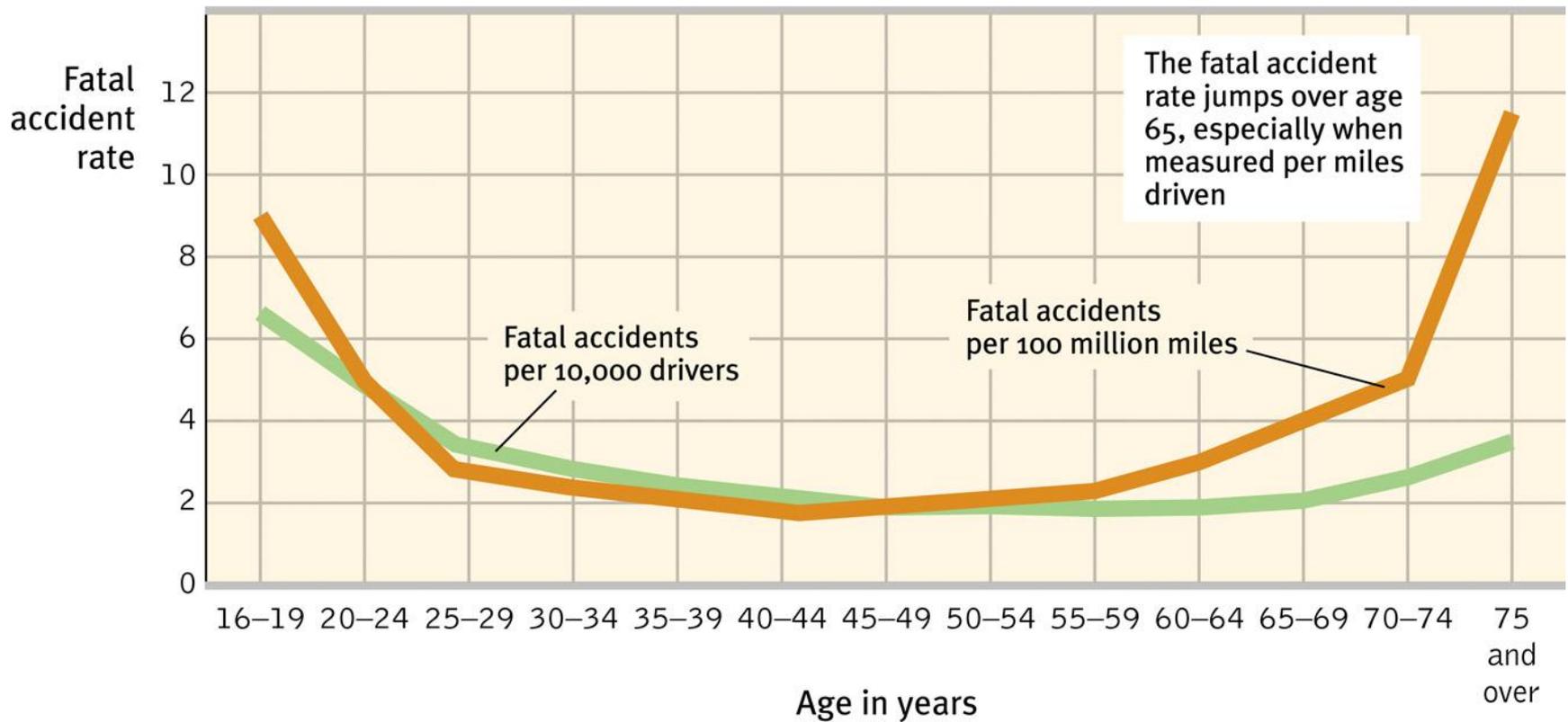
Old Age: Sensory Abilities

After age 70, hearing, distance perception, and the sense of smell diminish, as do muscle strength, reaction time, and stamina. After 80, neural processes slow down, especially for complex tasks.



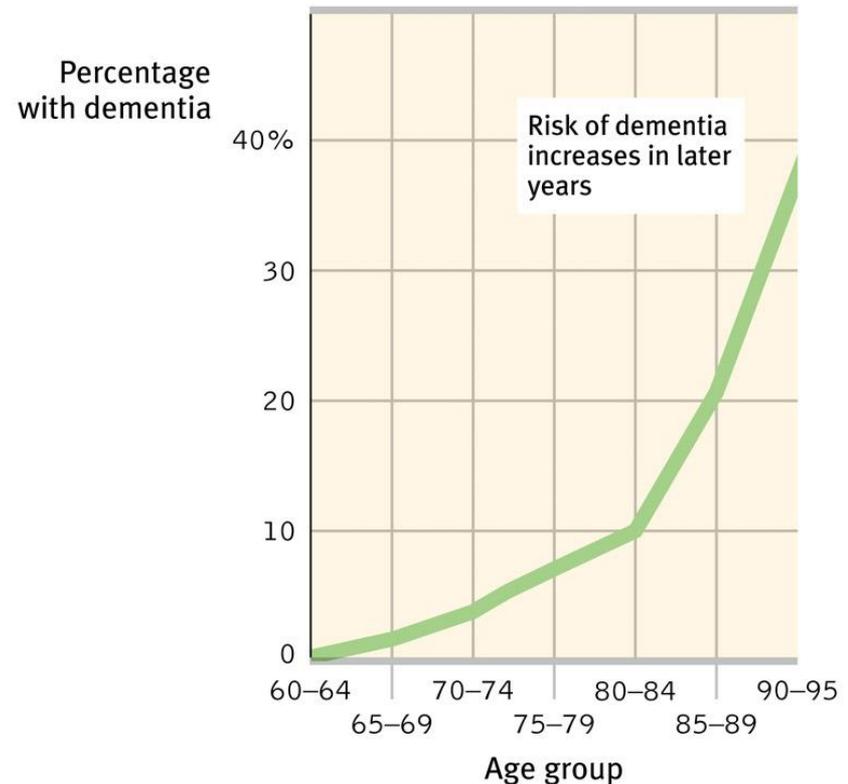
Old Age: Motor Abilities

At age 70, our motor abilities also decline. A 70-year-old is no match for a 20-year-old individual. Fatal accidents also increase around this age.



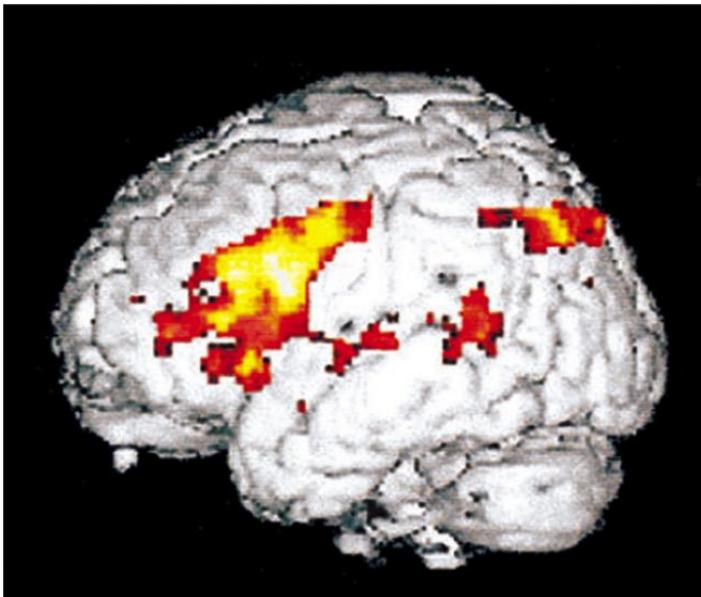
Old Age: Dementia

With increasing age, the risk of dementia also increases. Dementia is not a normal part of growing old.

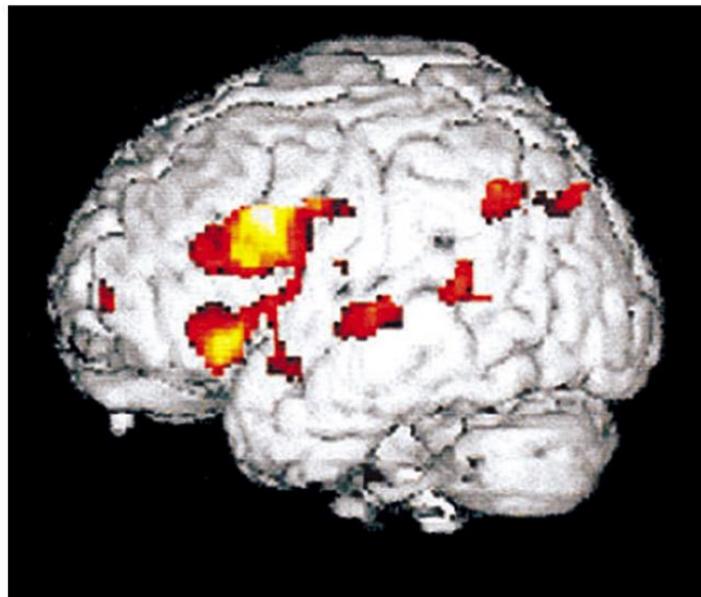


Old Age: Alzheimer's Disease

The risk for developing Alzheimer's disease also increases with age. Individuals who are in the early stages of this disease show more MRI activity in the brain than do normal individuals of the same age.



At risk Alzheimer



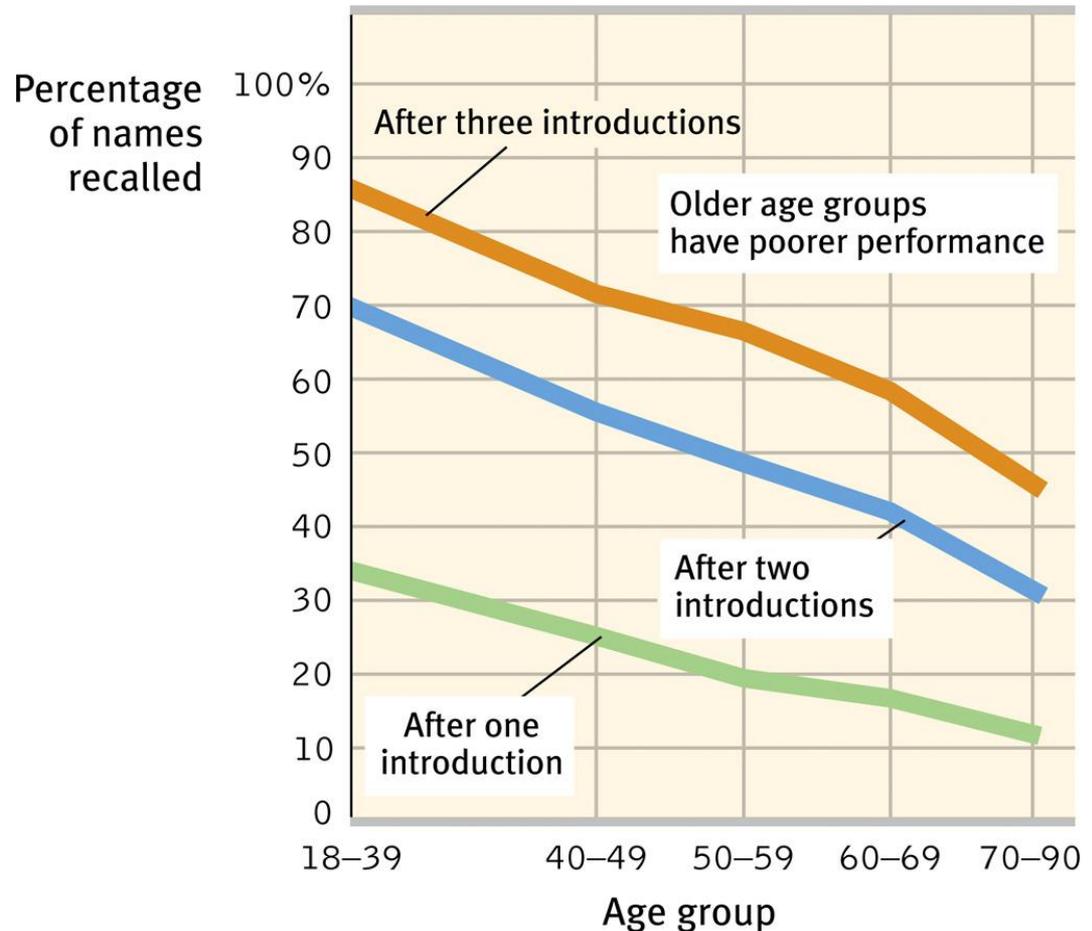
Normal

Cognitive Development

Do cognitive abilities like memory, creativity, and intelligence decline with age the same way physical abilities do?

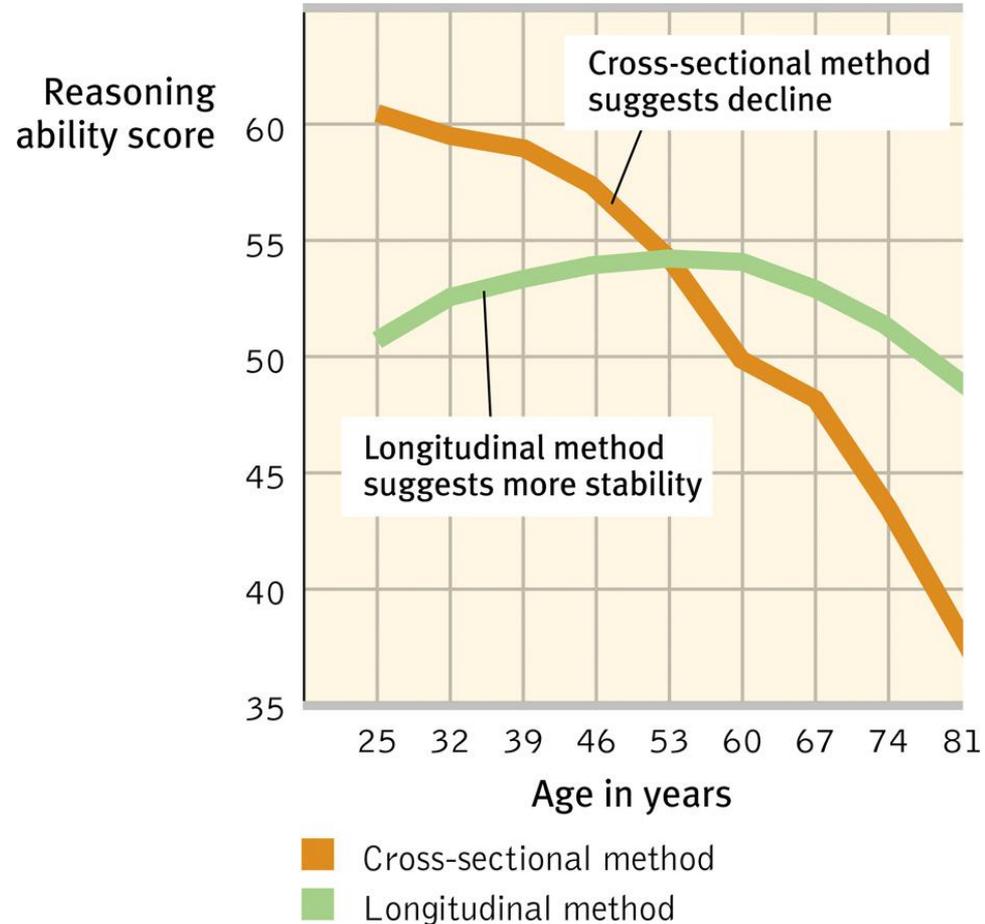
Aging and Memory

As we age, we remember some things well. These include recent past events and events that happened a decade or two back. However, recalling names becomes increasingly difficult.



Aging and Intelligence

Longitudinal studies suggest that intelligence remains relative as we age. It is believed today that fluid intelligence (ability to reason speedily) declines with age, but crystalline intelligence (accumulated knowledge and skills) does not.

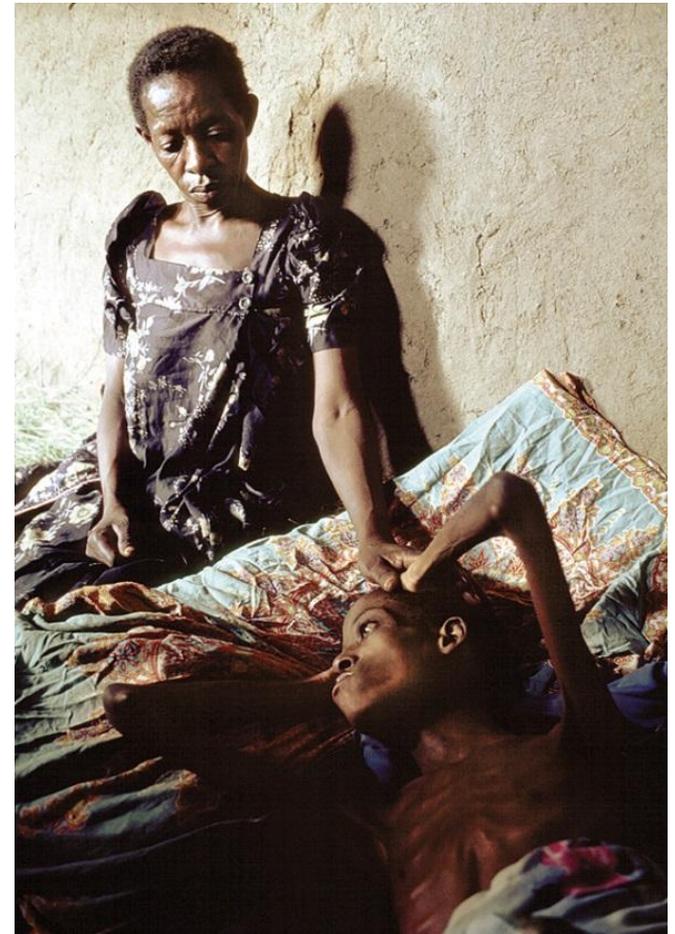


Social Development

Many differences between the young and old are not simply based on physical and cognitive abilities, but may instead be based on life events associated with family, relationships, and work.

Death and Dying

There is no “normal” reaction or series of grief stages after the death of a loved one. Grief is more sudden if death occurs unexpectedly. People who reach a sense of integrity in life (in Erikson’s terms) see life as meaningful and worthwhile.



Developmental Issues

Continuity and Stages

Researchers who view development as a slow, continuous process are generally those who emphasize experience and learning. Biologists, on the other hand, view maturation and development as a series of genetically predisposed steps or stages. These include psychologists like Piaget, Kohlberg and Erikson.

Developmental Issues

Stability and Change

Lifelong development requires both stability and change. Personality gradually stabilizes as people age. However, this does not mean that our traits do not change over a lifetime. Some temperaments are more stable than others.