Adolescent Development

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Chapter 2: Cognitive Transitions

Outline/overview

- Five main changes in cognition
- Piaget on cognitive development
- Information processing perspective
- New perspectives
- Brain development
- Intelligence and IQ testing

Five Main Changes in Cognition (Thinking)

Main advantages over child’s thought?

(1)
(2)
(3)
(4)
(5)
Thinking about Possibilities

- Example: Ways in which their lives might be affected by different career choices
- Moves easily between the specific and the abstract to generate alternative possibilities
- Development of deductive reasoning
  - "If-then" thinking
  - Major intellectual accomplishment

Thinking about Abstract Concepts

- Ability to comprehend higher-order abstract logic inherent in puns, proverbs, metaphors, and analogies
- The growth of social thinking (social cognition) during adolescence is directly related to the young person's improving ability to think abstractly

Metacognition: Thinking about Thinking

- Monitoring one's own cognitive activity during the process of thinking
- Increased introspection
  - thinking about our own emotions
- Increased self-consciousness
  - Thinking about others thinking of us
- Increased intellectualization
  - Thinking about our own thoughts
Metacognition: potential problems

- Adolescent egocentrism
  - Extreme self-absorption
- Imaginary audience
  - Behavior is the focus of other's concern
- Personal fable
  - Experiences are unique

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Imaginary Audience or Personal Fable?

- Sally is going on a date and has a pimple on the end of her nose
- John is arguing with his parents at a restaurant when the girl he likes walks in
- Sylvia and Gerald decided to have sex even though they didn't have any birth control

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Imaginary Audience or Personal Fable?

- Molly is having her class picture taken and she just got braces the day before
- Elise broke up with her boyfriend, and when Mom tries to comfort her, Elise screams that she just doesn't understand
- Even though Cheryl is known for her reckless driving, Gordon decides to take a ride from her anyway
Thinking in Multiple Dimensions

- See things in complicated ways rather than one aspect at a time
- More sophisticated understanding of probability
- Ability to understand when someone is being sarcastic
- Can understand double-entendres

Adolescent Relativism

- Ability to see things as relative rather than as absolute
- Skepticism becomes common
- Everything may seem uncertain
- No knowledge seems completely reliable

Piagetian View of Adolescent Thinking

- Cognitive-developmental view
  - Interaction between biological change and environmental stimulation
  - Leads to intellectual growth
- Each stage is characterized by a particular type of thought

Jean Piaget
Piaget's Cognitive Developmental Theory

- Equilibrium – ultimate goal
  - Schemes – mental systems/operations
  - Adaptation – adjust schemes to maintain equilibrium
    - Assimilation – incorporate experience into existing scheme
    - Accommodation – scheme is extensively modified or new scheme created

Piagetian Cognitive-Developmental Theory

- Sensorimotor (birth-2)
  - Object permanence
- Preoperational (2-6)
  - Egocentrism profound
- Concrete operational stage (6-11)
  - Seriation & classification
- Formal operations (11 – adult)
  - Logical thought

Piagetian View of Adolescent Thinking

- Propositional logic
  - Based on formal principles of logic
  - Applies to abstract, complicated thinking as well as to concrete, literal thinking
- Competence-performance distinction
  - A large gap exists between what can be done and what is done in daily life
Information-Processing View of Adolescent Thinking

Question of Interest
- What is it about the ways that adolescents think about things that make them better problem solvers than children?

New Directions re: Adolescent Thinking

Robbie Case Integration
- Integrates findings on improvements in adolescents’ information-processing abilities within a cognitive-developmental framework similar to Piaget’s

Paul Kaczynski
- Two different cognitive systems at work
  - Analytic system using deductive reasoning
  - Intuitive system using heuristics and gut feelings

The Adolescent Brain

- Brain maturation linked to behavioral, emotional, and cognitive development during this period
- Limbic system - changes in levels of neurotransmitters, like dopamine, affect reward sensitivity
- Synaptic “pruning” and myelination of the prefrontal cortex improves the efficiency of information processing
Individual Differences in Intelligence in Adolescence

- Measurement of IQ
  - Intelligence quotient
  - First test developed in 1905
  - Most widely used – and misused - psychological instrument

Culture and Intelligence

- Culture-fair tests
  - Intelligence tests that attempt to reduce sources of ethnic or cultural bias
  - Based less on verbal skills
  - Oriented toward performance tasks