Chapter 9
Early Childhood:
Cognitive Development

Childhood and Adolescence: Voyages in Development, First Canadian Edition
Spencer A. Rathus & Christina M. Rinaldi
Chapter 9
Piaget- preoperational stage (2-7 yrs.)

• Characterized by symbolic thought and play
• Pretend play
  - 12-13 months - familiar activities; i.e. feed themselves
  - 15-20 months - focus on others; i.e. feed doll
  - 30 months - others take active role; i.e. doll feeds itself
• Imaginary Friends
  - More common among first-born and only children
How do we characterize the logic of the preoperational child?

- Lack of logical operations
  - No flexible or reversible mental operations
- Egocentrism
  - Only view the world through their own perspective
  - Three-mountain test
Figure 9.1 The Three-Mountains Test
How do we characterize the logic of the preoperational child cont’d?

• Causality
  – Influenced by egocentrism
    • Caused by will
  – Precausal thinking
    • Transductive reasoning
    • Animism
    • Artificialism

• Confusion between mental and physical phenomena
  – Believe their thoughts reflect external reality
  – Believe dreams are true
What is conservation?

• Properties remain the same even if you change the shape or arrangement
• Preoperational children fail to demonstrate conservation
  – Centration
  – Irreversibility
Figure 9.3 Conservation of Number

Child is shown two rows of pennies.

Experimenter moves pennies in one row.
What is class inclusion?

• Including new objects/categories in broader mental classes
  - Requires child focus on more than one aspect of situation at once
Figure 9.4 Class Inclusion
Lessons in Observation: Piaget’s Preoperational Stage

[Image of a child playing with a toy]

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Evaluation of Piaget

- Piaget underestimated preschoolers abilities
  - Three-mountain test
    - Errors attributed to demands on child and language development
  - Causality
    - Logical understanding appears more sophisticated
  - Conservation
    - Approach may mislead child
Vygotsky and cognitive development in early childhood

Vygotsky: 4 Basic Principles
1. Children construct knowledge
2. Development cannot be separated from its social context
3. Learning can lead development
4. Language plays a central role in mental development

- Scaffolding
- Zone of Proximal Development
The Effect of the Home Environment

• Home observation for the measurement of the environment
  - Observe parent-child interaction in the home
  - Predictor of IQ scores
• Parental responsiveness, stimulation, independence
  - Connected with higher IQ and school achievement
The Effect of Early Childhood Education

• Preschool enrichment programs for children of poverty
  - *Designed to increase school readiness*
    • Enhance cognitive development
    • Parental involvement
    • Provide health care and social services to children and families
  - *Programs have shown benefits*
    • Positive influence on IQ scores
    • Better graduation rates
    • Less likely to be delinquent, unemployed or on welfare

• Preschool enrichment for middle-class children
  - *High parental academic expectations*
    • Increased preschool academic skills (until kindergarten!)
    • Children less ; More anxious
    • Think less positively about school
The effect of television on cognitive development

- Contradictory evidence
  - Sesame Street – most successful educational TV show
    - Regular viewing = increased skill in numbers, letters, sorting, classification
    - Positive impact on vocabulary
  - Impulse control
    - Heavy TV viewing negatively effects impulse control
    - Exposure to educational TV may have positive effect

- Commercials

- Couch-Potato Effects
Theory of Mind
Development of “Theory of Mind...”

Is identified as a major shift in a child’s social-emotional development... and in their ability to understand emotions in their selves and others

ToM underlies the understanding of human behavior and provides a foundation for social interactions and cognitive functions

In fact, Frye and Moore (1991) suggest that the “Effects of the child’s theory of mind spread across cognitive, language, and social development” (p. vii).
“Theory of Mind” Defined

“In saying the individual has a theory of mind, we mean that the individual imputes mental states to himself and to others (either to conspecifics or to other species as well)... such states are not directly observable, and... can be used to make predictions, specifically about the behavior of other organisms”

(Premack & Woodruff, 1978, p.515)
Mental States

- Purpose or intention
- Knowledge
- Belief
- Thinking
- Feeling
- Guessing
- Doubt
- Pretending
- Trusting
- Deceit
Common mental state inferences:

“John **believes in ghosts**;
he **thinks** he has a fair chance of winning;
Paul **knows** that I don’t like roses;
she is **guessing** when she says that;
I **doubt** that Mary will come;
Bill is only **pretending**.”

(Premack & Woodruff, 1978, p. 515)
“Theory of Mind” also referred to as:

- Mind-reading
- Mentalization
- Mental state attribution
- Reflective function
A Brief Look at the History of ToM

Prior to the empirical study of ToM Piagetian view dominated cognitive developmental theory...

Children egocentric and don’t take another’s perspective until 7-9 years
“Does the chimpanzee have a theory of mind?”

Landmark study by David Premack and Guy Woodruff (1978)
Premack & Woodruff (1978) believed:

- ToM was universal in human adults
- Allows one to take another’s perspective
- Its occurrence depends on some form of experience not immediately apparent...

Not taught directly like math & reading
...But acquired like walking & speech
Sarah’s ToM

Premack and Woodruff: Chimpanzee theory of mind
• Their experimental data showed

  ➢ that non-human primates have intentional understanding of their social world
  ➢ and it is possible to investigate ToM as a biological endowment, independent of language

• Prior to their work, ToM was commonly believed to be dependent on linguistic abilities
Theory of mind has developed in Children when they...

- Can separate their beliefs from another who has false knowledge of a situation.
- Ability to deceive

TOM
- Evident by age 4 or 5, sometimes even at age 3
- Assessed using the False Belief Task
The False-belief task

Wimmer & Perner (1983)

- Children invited to make predictions about a doll protagonist that was mistaken about the current location of an object
  (For example, Sally-Anne task)
Sally places her marbles in basket.

Sally enters Sally's marbles to box.

Where will Sally look for her marbles?
The False-belief Task

- Important step in understanding ToM

- Children 3-9 years studied
  - surprising initial finding...children able to succeed in task around 5 years... about 2-3 years earlier than Piaget’s prevailing view
Passing the False-belief task

...Means the child has developed a representational ToM

“By 4 or 5, children realize that people talk and act on the basis of the way they think the world is, even when their thoughts do not reflect reality” (Astington, 1998, p. 47)
Conclusion

“Mind-reading: An essential human skill develops by around 5 years of age. Most of us don’t know we are doing it, but without it we are unable to have relationships. It allows us to imagine what other people are thinking and feeling”

“It is a long journey before children learn to read others minds... one that researchers are actively trying to understand”

(TLC: A Child’s World: Mind Games)