Piaget's Theory

- The first "cognitive" theory, developed by Jean Piaget beginning about 1920.
- Piaget observed and described children at different ages.
- His theory is very broad, from birth through adolescence, and includes concepts of language, scientific reasoning, moral development, and memory.

Piaget's Assumptions About Children

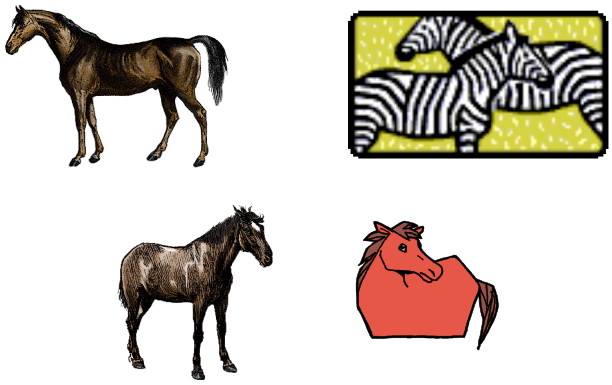
- Children **construct their own knowledge** in response to their experiences.
- Children learn many things **on their own** without the intervention of older children or adults.
- Children are **intrinsically motivated to learn** and do not need rewards from adults to motivate learning.

Nature vs. Nurture

- **Nature and nurture** interact to produce cognitive development.
- Nature: maturation of brain and body; ability to perceive, learn, act; motivation
- Nurture:
  - **Adaptation**: Children respond to the demands of the environment in ways that meet their own goals.
  - **Organization**: Children integrate particular observations into a body of coherent knowledge.

Continuous vs. Discontinuous

- **Sources of continuity:**
  - **Assimilation**: People translate incoming information into a form they can understand.



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- **Sources of continuity:**
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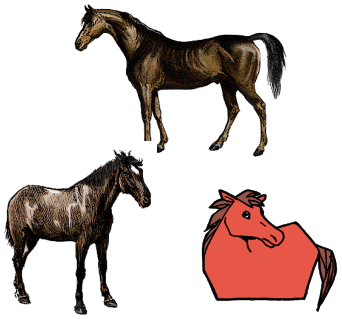


Continuous vs. Discontinuous

- **Sources of continuity:**
  - **Assimilation**: People translate incoming information into a form they can understand.
  - **Accommodation**: People adapt current knowledge structures in response to new experience.
  - **Equilibration**: People balance assimilation and accommodation to create stable understanding

Continuous vs. Discontinuous

- **Sources of discontinuity:** There are distinct stages of cognitive development, with the following properties.
  - **Qualitative change**: Children of different ages (and at different stages) think in different ways.
  - **Broad applicability**: The type of thinking at each stage pervades topic and content areas.
  - **Brief transitions**: Transitions to higher stages of thinking are not necessarily continuous.
  - **Invariant sequence**: The sequences of stages are stable for all people through all time. Stages are not skipped.

Piaget's Stages

- **Sensorimotor stage** (birth to 2 years)
  - Knowledge develops through sensory and motor abilities.

Piaget's Stages

- Sensorimotor stage (birth to 2 years)
- **Preoperational stage** (2 to 7 years)
  - Knowledge is represented by language, mental imagery, and symbolic thought.

Piaget's Stages

- Sensorimotor stage (birth to 2 years)
- Preoperational stage (2 to 7 years)
- **Concrete operational stage** (7 to 12 years)
  - Children can reason logically about concrete objects and events.

Piaget's Stages

- Sensorimotor stage (birth to 2 years)
- Preoperational stage (2 to 7 years)
- Concrete operational stage (7 to 12 years)
- **Formal operational stage** (12 years and up)
  - Children can think deeply about concrete events and can reason abstractly and hypothetically.

Piaget's Sensorimotor Stage

- Substage 1 (birth to 1 month)
  - Building knowledge through reflexes (grasping, sucking).

Piaget's Sensorimotor Stage

- Substage 1 (birth to 1 month)
- Substage 2 (1 to 4 months)
  - Reflexes are organized into larger, integrated behaviors (grasping a rattle and bringing it to the mouth to suck).

Piaget's Sensorimotor Stage

- Substage 1 (birth to 1 month)
- Substage 2 (1 to 4 months)
- Substage 3 (4 to 8 months)
  - Repetition of actions on the environment that bring out pleasing or interesting results (banging a rattle).

Piaget's Sensorimotor Stage

- Substage 1 (birth to 1 month)
- Substage 2 (1 to 4 months)
- Substage 3 (4 to 8 months)
- Substage 4 (8 to 12 months)
  - Mentally representing objects when objects can no longer be seen, thus achieving "object permanence."

Piaget's Sensorimotor Stage

- Substage 1 (birth to 1 month)
- Substage 2 (1 to 4 months)
- Substage 3 (4 to 8 months)
- Substage 4 (8 to 12 months)
- Substage 5 (12 to 18 months)
  - Actively and avidly exploring the possible uses to which objects can be put: Banging a spoon or cup on high chair to make different sounds, get attention.

Sensorimotor Stage

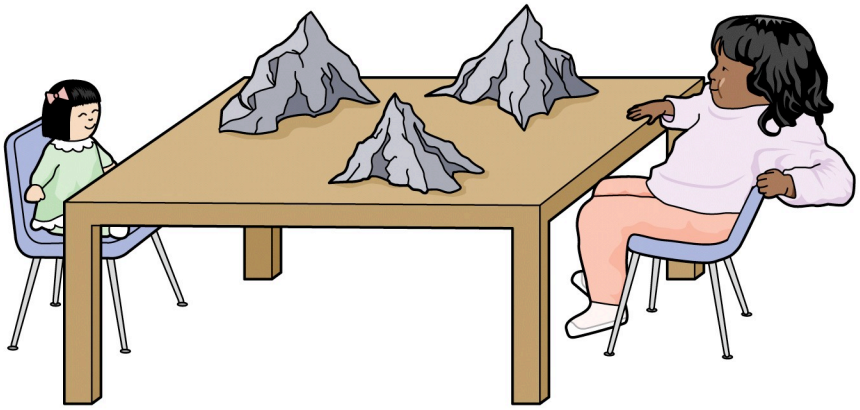
- Substage 1 (birth to 1 month)
- Substage 2 (1 to 4 months)
- Substage 3 (4 to 8 months)
- Substage 4 (8 to 12 months)
- Substage 5 (12 to 18 months)
- Substage 6 (18 to 24 months)
  - Able to form enduring mental representations, as demonstrated by "deferred imitation," the repetition of others' behaviors minutes, hours, or days after it has occurred.

Preoperational Stage

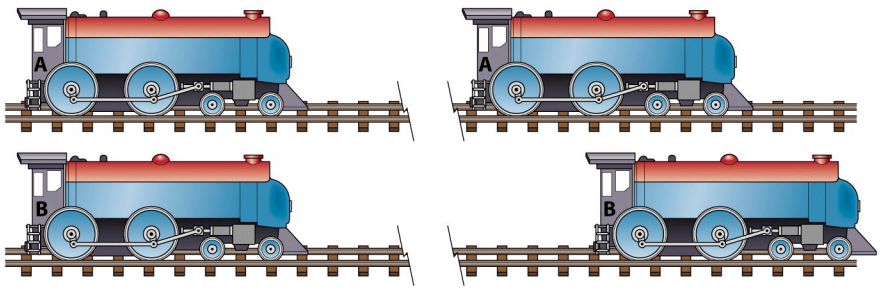
- **Symbolic representations** - the use of one object to stand for another.

- **Egocentrism**: Looking at the world only from one's own point of view.
- **Centration**: Focusing on one dimension of objects or events and on static states rather than transformations.

Egocentrism



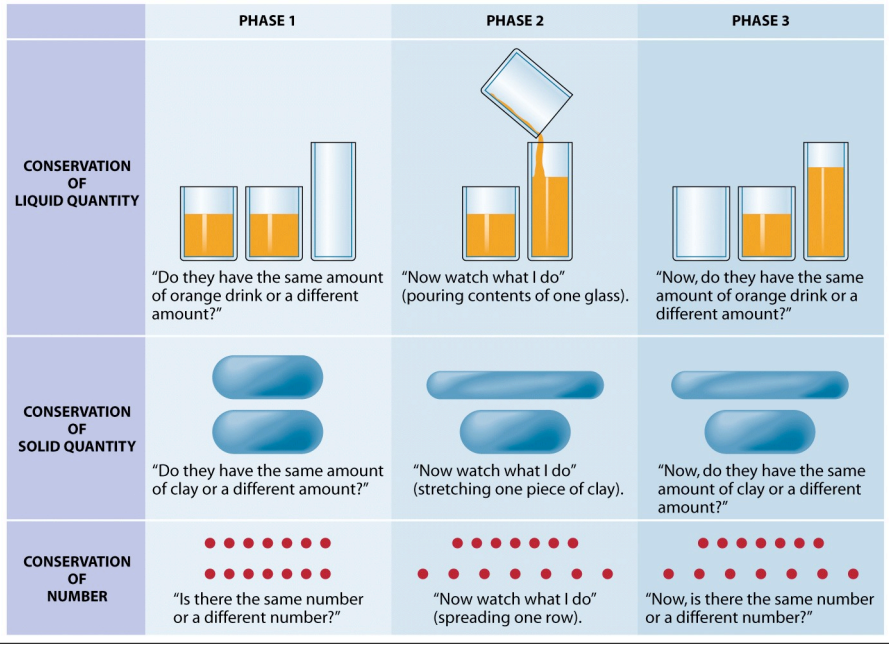
Centrism



Concrete Operations Stage

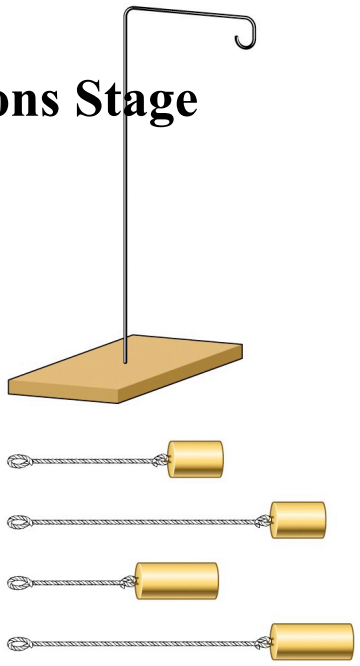
- **Conservation concept** - changing the appearance or arrangement of objects does not change their key properties.
- Highly abstract thinking and reasoning about hypothetical situations still remains very difficult.

Conservation Concepts

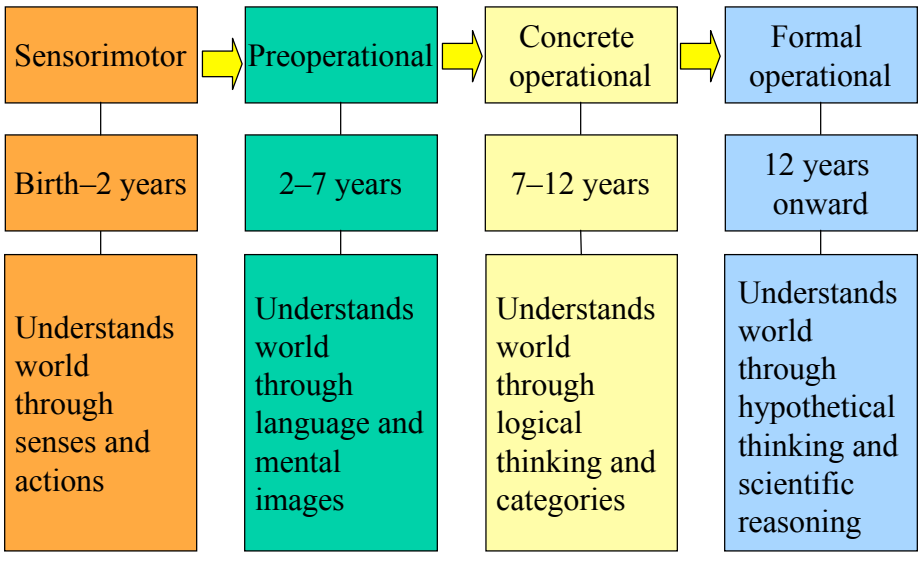


Formal Operations Stage

- Ability to think abstractly and reason hypothetically.
- Ability to reason systematically about all different outcomes.
- Ability to engage in scientific thinking.



Stages



Criticisms of Piaget's Theory

- Children's thinking is not as consistent as the stages suggest.
- Infants and young children are more competent than Piaget recognized.
- Piaget understates the social components of cognitive development.
- Piaget was better at describing processes than explaining how they operate.