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.
Continuous vs. Discontinuous

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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.

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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.

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Piaget’s Stages

- **Sensorimotor stage** (birth to 2 years)
  - Knowledge develops through sensory and motor abilities.
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<td>– Knowledge is represented by language, mental imagery, and symbolic thought.</td>
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<td>• Substage 1 (birth to 1 month)</td>
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<td>• Preoperational stage (2 to 7 years)</td>
<td>– Building knowledge through reflexes (grasping, sucking).</td>
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<td>• Concrete operational stage (7 to 12 years)</td>
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<td>• <strong>Formal operational stage</strong> (12 years and up)</td>
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<td>– Children can think deeply about concrete events and can reason abstractly and hypothetically.</td>
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### 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).
- **Substage 3 (4 to 8 months)**
  - Repetition of actions on the environment that bring out pleasing or interesting results (banging a rattle).
- **Substage 4 (8 to 12 months)**
  - Mentally representing objects when objects can no longer be seen, thus achieving “object permanence.”
- **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.

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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.

Formal Operations Stage

- Ability to think abstractly and reason hypothetically.

- Ability to reason systematically about all different outcomes.

- Ability to engage in scientific thinking.
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.