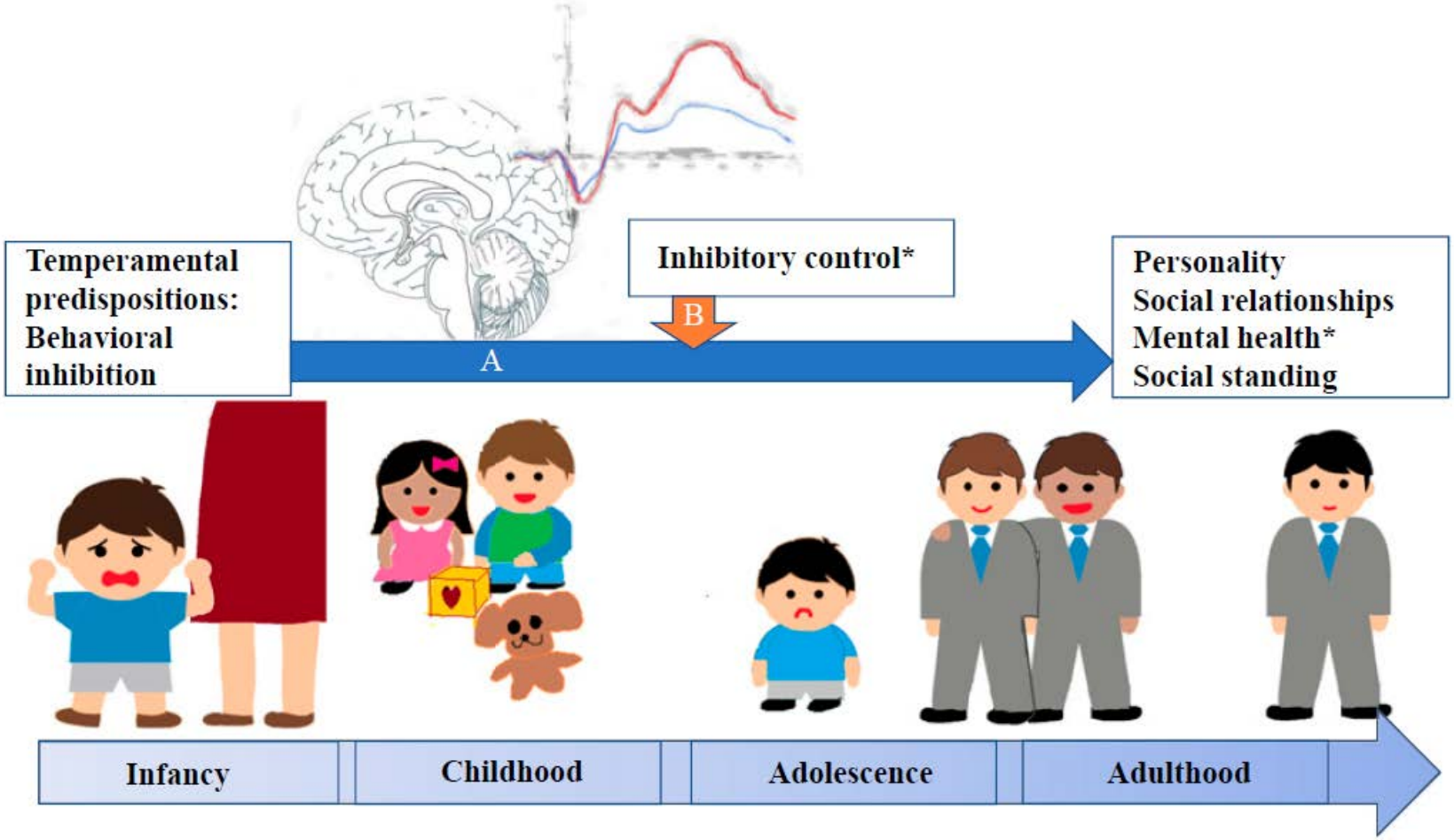

#13
DEVELOPMENT
We are who we are because of what we were born with and what we experienced growing up.

# WHEN WE WERE JUST BORN

Newborns—average age 53 minutes—preferred the facelike stimulus over its inversion (indicated by direction of first look and duration of looking). When both stimuli were facelike, differing only in terms of contrast, the newborns showed no preference. There seems to be a predisposition for newborns to look for faces (Mondloch et al., 1999).

4-day-old newborns looked longer at their mother's face than at a stranger's face (Pascalis et al., 1995). Also, new born infants—age only half a day to a few days—looked longer at attractive faces than less attractive faces (Slater et al., 1998, 2000).

Temperament refers to basic emotional style that appears early in development and is possibly genetic in origin. Temperament is typically reflected in activity level, irritability or emotionality, fearfulness, and sociability of the infant (Mervielde et al., 2005).




Behavioral inhibition: Being overly cautious, fearful, and avoidant to unfamiliar people and novel objects and situations. This tendency persists into adulthood. For instance, behavioral inhibition at 14 months were associated with being reserved and introverted, lower social functioning with friends and family, and anxiety and depression (Tang et al., 2020).

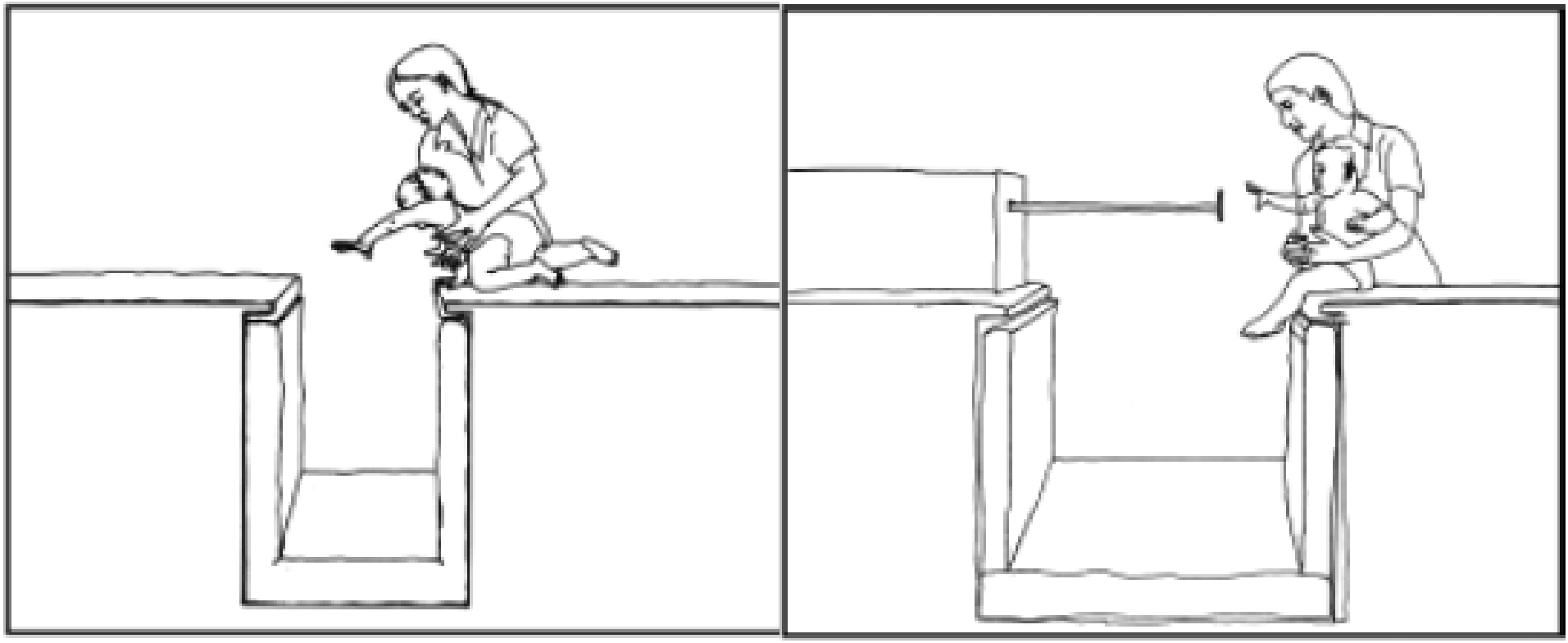
# MOTOR DEVELOPMENT

- Reflexes
  - Automatic, involuntary responses to incoming stimuli
  - Reliance on reflexes early in life; some reflexes disappear in the first year, some persist (e.g., eye-blink reflex)
  - Development of voluntary movements

Some reflexes are essential to survival (e.g., sucking), while some are crucial for development of voluntary movement (e.g., walking reflex)


During the first two years, the ability to move independently grows enormously. The ages above indicate the time when 50% of children are able to perform each skill (Frankenburg et al., 1992).

- Motor learning
  - Motor developments do not just unfold as a byproduct of neural-muscular maturation (Adolph, 2008)
  - Exploration enables infants to detect constraints on their locomotion and discover solutions to respond adaptively



Because sitting, crawling, and walking are defined by different constraints, what infants have learned in earlier postures does not necessarily transfer to later postures (Adloph, 2008).

# COGNITIVE DEVELOPMENT

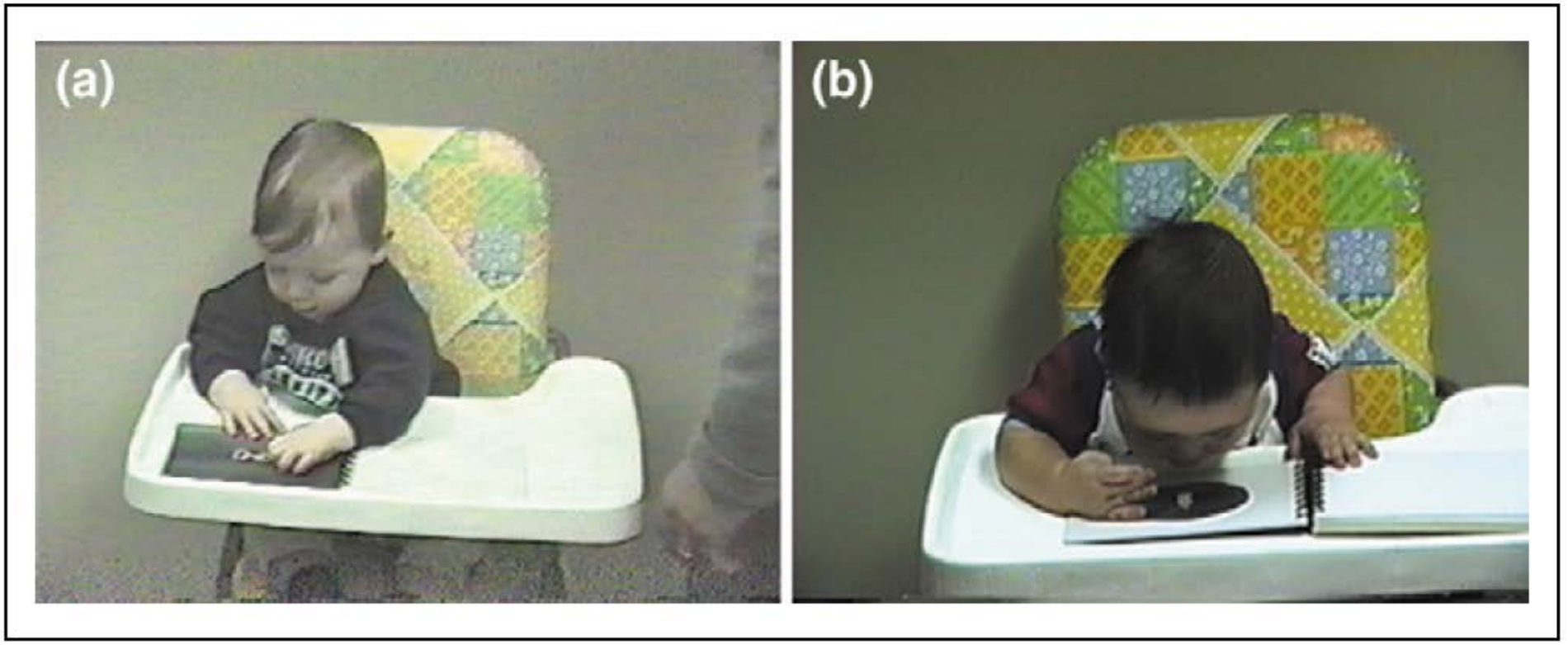
- Piaget's stage theory
  - Children's thinking is not just an immature form of adult thinking
  - End point of development is the ability to reason abstractly and logically
  - Each stage is characterized by a certain level of abstract reasoning ability

| STAGE | TYPICAL AGES | DESCRIPTION |
|---|---|---|
| Sensorimotor | Birth to 2 years | No thought beyond immediate physical experiences |
| Preoperational | 2 to 7 years | Able to think beyond the here and now, but egocentric and unable to perform mental transformations |
| Concrete Operations | 7 to 11 years | Able to perform mental transformations but only on concrete physical objects |
| Formal Operations | 11 years to adulthood | Able to perform hypothetical and abstract reasoning |

The early stages of cognitive development are characterized by physical experience-based thinking, while the later stages are characterized by abstract, symbol-based thinking.

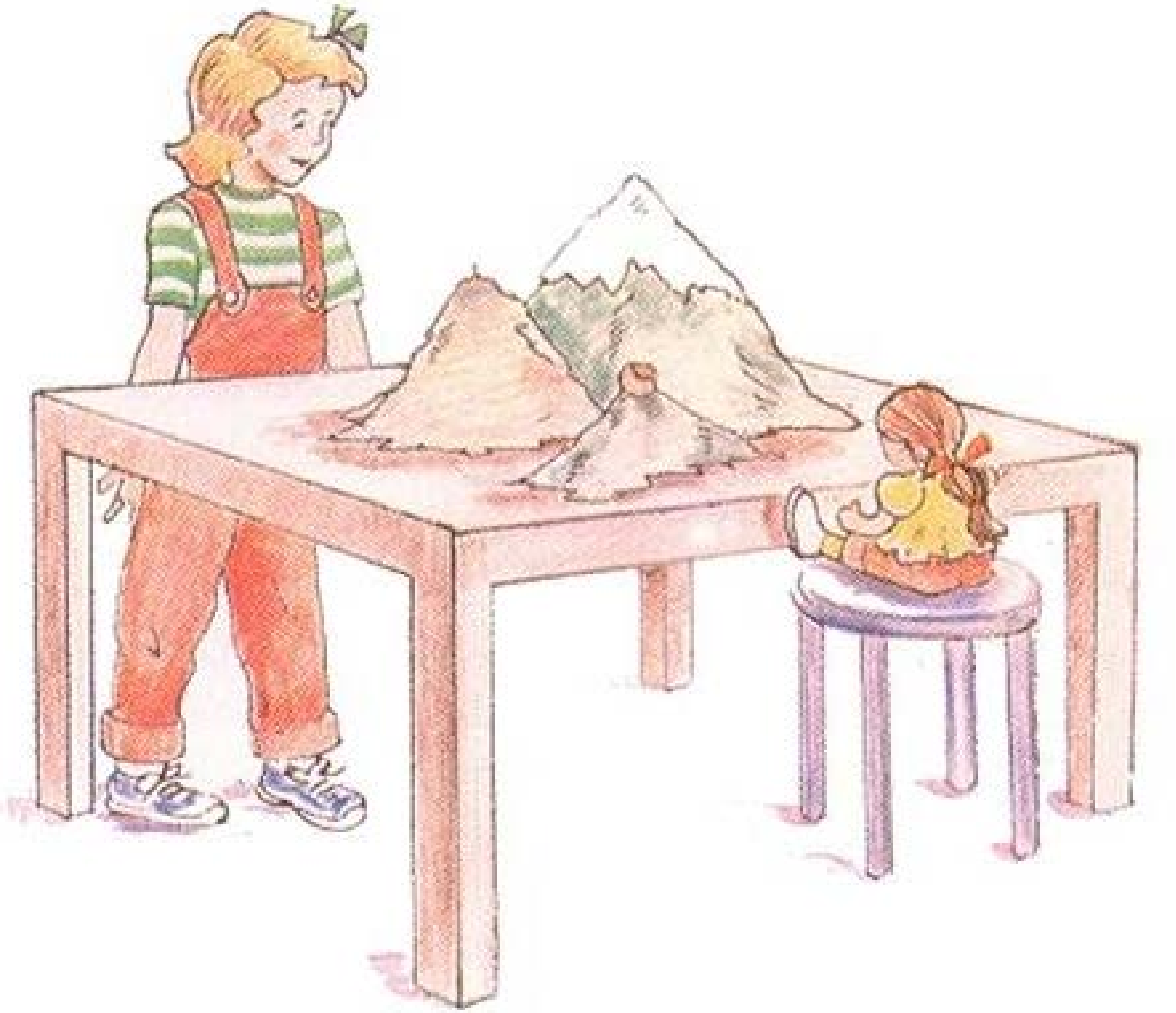
- Sensorimotor stage
  - Birth to 2 years
  - A focus on here and now, without the ability to represent experiences mentally
  - Thinking is tied to physical experiences (e.g., sucking, manipulating objects)

Object permanence, the understanding that objects continue to exist even if they are out of sight, is one form of mental representations that children in this stage acquire.

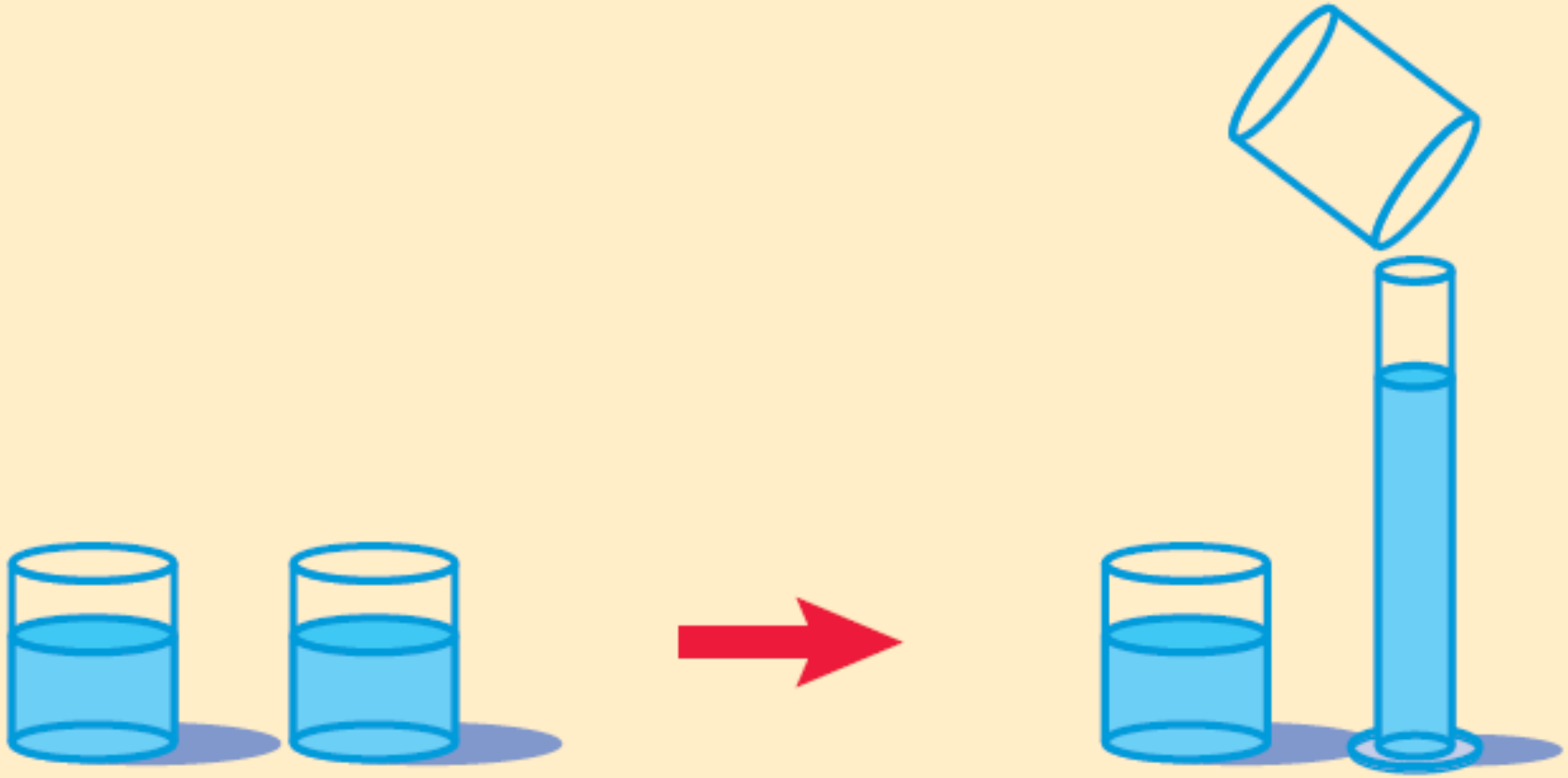



The ability to perceive, interpret, understand, and use pictures is virtually absent among children younger than 1.5 years old. Children that young typically try to manually explore the "object" (DeLoache et al., 2003).

- Preoperational stage
  - 2 to 7 years
  - Able to construct representations mentally (e.g., use of symbols such as language and pretending)
  - Not yet able to perform operations (mental transformations) (e.g., understanding of conservation)



Children in this stage is still hampered by egocentrism, an inability to see the world from others' point of view (Gzesh & Surber, 1985).

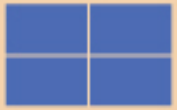
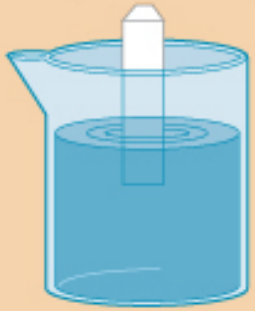


The child sees two glasses of water and says that both contain the same amount. The water from one is then poured into a tall, thin glass. The child is asked, "Which glass has more water?"

Children in the preoperational stage do not fully master conservation of liquid volume yet.

| Conservation of... | Modality | Change in physical appearance | Average age at full mastery |
|---|---|---|---|
| **Number** | Number of elements in a collection  | Rearranging or dislocating elements  | 6–7 years |
| **Substance (mass)** | Amount of a malleable substance (e.g., clay or liquid)  | Altering shape  | 7–8 years |
| **Length** | Length of a line or object  | Altering shape or configuration  | 7–8 years |

Other conservation tasks and their corresponding average age of full mastery

| Conservation of... | Modality | Change in physical appearance | Average age at full mastery |
|---|---|---|---|
| **Area** | Amount of surface covered by a set of plane figures  | Rearranging the figures  | 8–9 years |
| **Weight** | Weight of an object  | Altering shape  | 9–10 years |
| **Volume** | Volume of an object (in terms of water displacement)  | Altering shape  | 14–15 years |

Other conservation tasks and their corresponding average age of full mastery

- Concrete operational stage
  - 7 to 11 years
  - Able to perform mental operations (e.g., conservation, classification) but only for actual events
  - Starts to show logical thinking

- Formal operational stage
  - 11 years to adulthood
  - Able to perform hypothetical reasoning beyond here and now
  - Formal, logical thinking, no longer tied to actual physical events

# MORAL AND SOCIAL DEVELOPMENT

- Kohlberg's theory
  - People go through a series of stages in the evolution of their sense of justice and moral reasoning
  - Moral reasoning is bounded by various cognitive limitations

- Kohlberg's theory
  - Preconventional: focus on personal rewards and punishment
  - Conventional: focus on societal values, approval or disapproval by others
  - Postconventional: focus on moral principles that might differ from societal values

| LEVEL | HEINZ SHOULD STEAL THE DRUG BECAUSE ... | HEINZ SHOULD *NOT* STEAL THE DRUG BECAUSE ... |
|---|---|---|
| **Preconventional Morality** | He can get away with it. | He might get caught. |
| **Conventional Morality** | Others will look down on him if he lets his wife die. | It's against the law. |
| **Postconventional Morality** | The protection of human life is a higher moral principle that can overrule laws against stealing. | Doing so violates a basic social contract needed to preserve civilization: Thou shalt not steal. |

Preconventional level is dominant in childhood, conventional level in adolescence; postconventional level is relatively rare even in adults (Walker et al., 1987). Level of morality is associated with moral behavior. For instance, a lower level of reasoning is found among incarcerated individuals and delinquents (e.g., Gregg et al., 1994).

- Erikson's theory
  - Individuals pass through eight stages, each characterized by a psychosocial crisis (dilemma concerning an individual's self and relations to other people)
  - Successful completion of a stage results in a healthy, well-adjusted personality

| Stage (approximate age) | Issue | Description of Task |
|---|---|---|
| Infancy (to 1 year) | Trust vs. mistrust | If needs are dependably met, infants develop a sense of basic trust. |
| Toddlerhood (1 to 3 years) | Autonomy vs. shame and doubt | Toddlers learn to exercise their will and do things for themselves, or they doubt their abilities. |
| Preschool (3 to 6 years) | Initiative vs. guilt | Preschoolers learn to initiate tasks and carry out plans, or they feel guilty about their efforts to be independent. |
| Elementary school (6 years to puberty) | Competence vs. inferiority | Children learn the pleasure of applying themselves to tasks, or they feel inferior. |

| Stage (approximate age) | Issue | Description of Task |
|---|---|---|
| Adolescence (teen years into 20s) | Identity vs. role confusion | Teenagers work at refining a sense of self by testing roles and then integrating them to form a single identity, or they become confused about who they are. |
| Young adulthood (20s to early 40s) | Intimacy vs. isolation | Young adults struggle to form close relationships and to gain the capacity for intimate love, or they feel socially isolated. |
| Middle adulthood (40s to 60s) | Generativity vs. stagnation | In middle age, people discover a sense of contributing to the world, usually through family and work, or they may feel a lack of purpose. |
| Late adulthood (late 60s and up) | Integrity vs. despair | Reflecting on his or her life, an older adult may feel a sense of satisfaction or failure. |