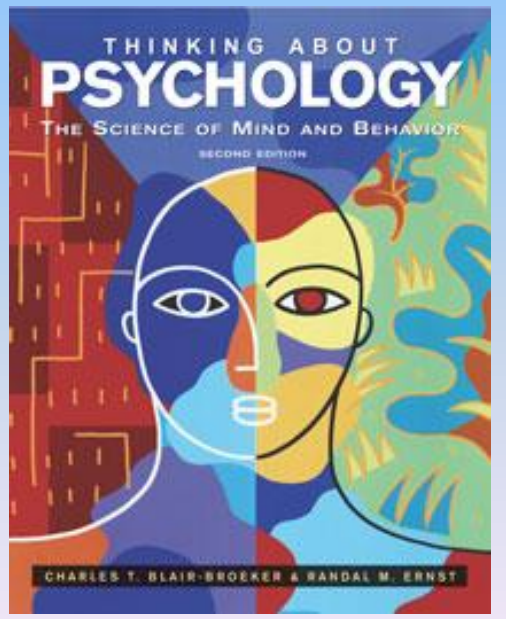
# Thinking About Psychology: The Science of Mind and Behavior 2e




Charles T. Blair-Broeker

Randal M. Ernst

# Developmental Domain

# Life-Span Development Chapter

Module 14

# Prenatal and Childhood Development

# The Beginnings of Life: Prenatal Development

# Prenatal Development

- Prenatal defined as “before birth”
- Prenatal stage begins at conception and ends with the birth of the child.

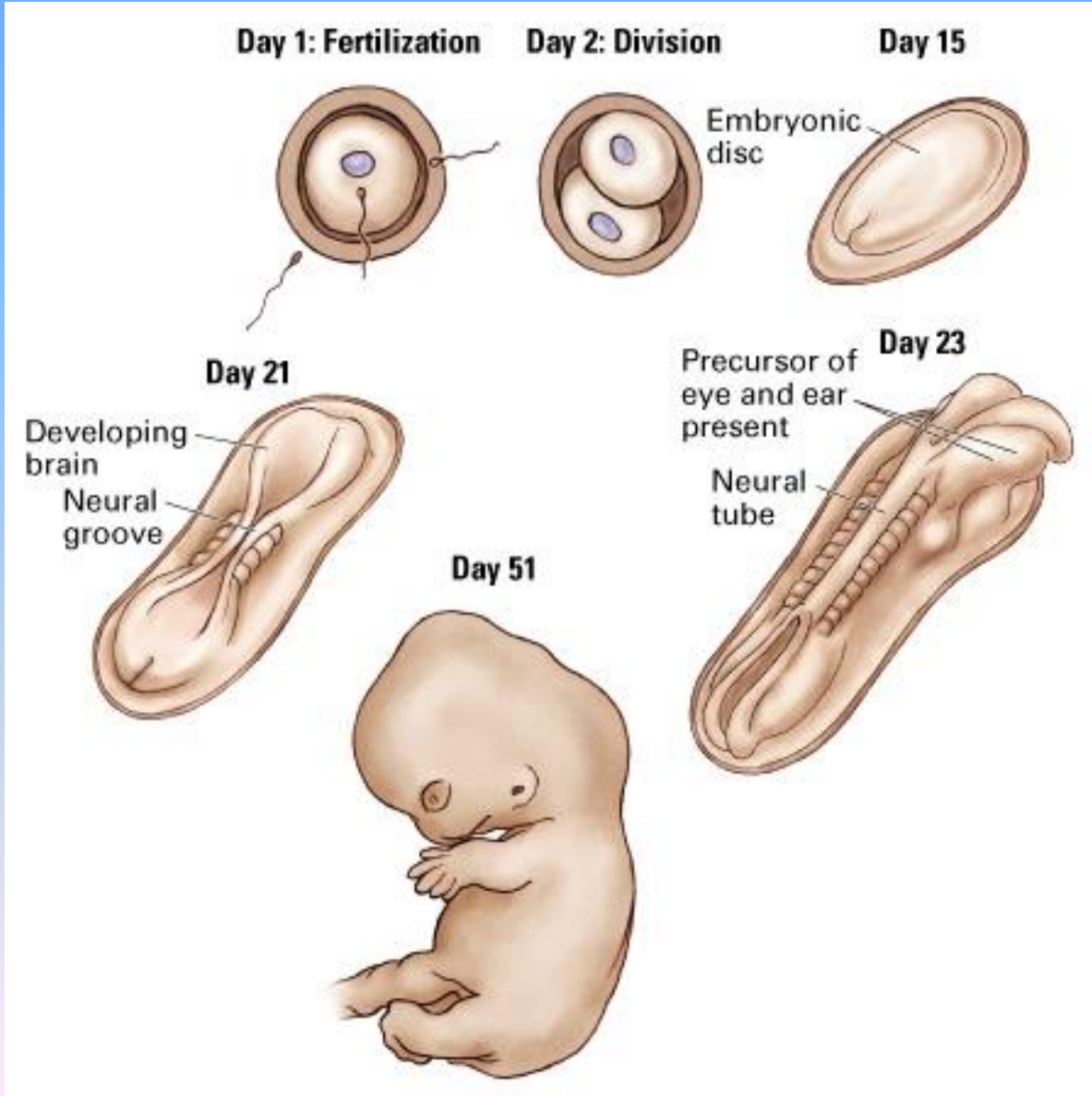
# You’re a Winner!

- You won the first race you were ever in. At the time of conception, two-and-a-half-billion sperm were in a race for one egg, and you won!

# Zygote

- A fertilized egg
- The *first two weeks* are a period of rapid cell division.
- Attaches to the mother's uterine wall
- At the end of 14 days becomes an embryo

# Prenatal Development



# Embryo

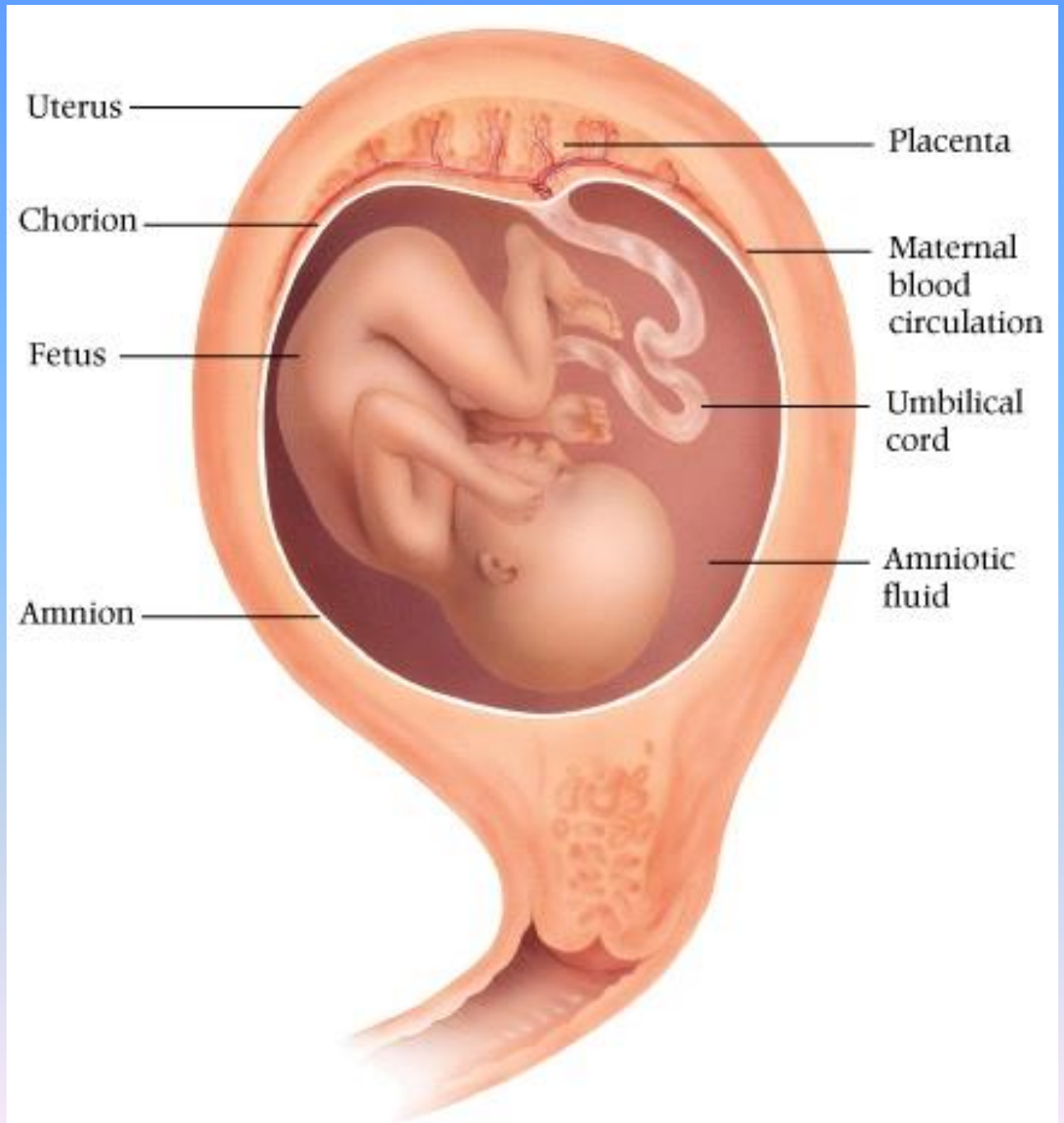
- Developing human organism from about 2 weeks after fertilization *until the end of the eighth week*
- Most of the major organs are formed during this time.
- At the end of the eight week the fetal period begins.

# Fetus

- Developing human organism from *nine weeks after conception to birth*

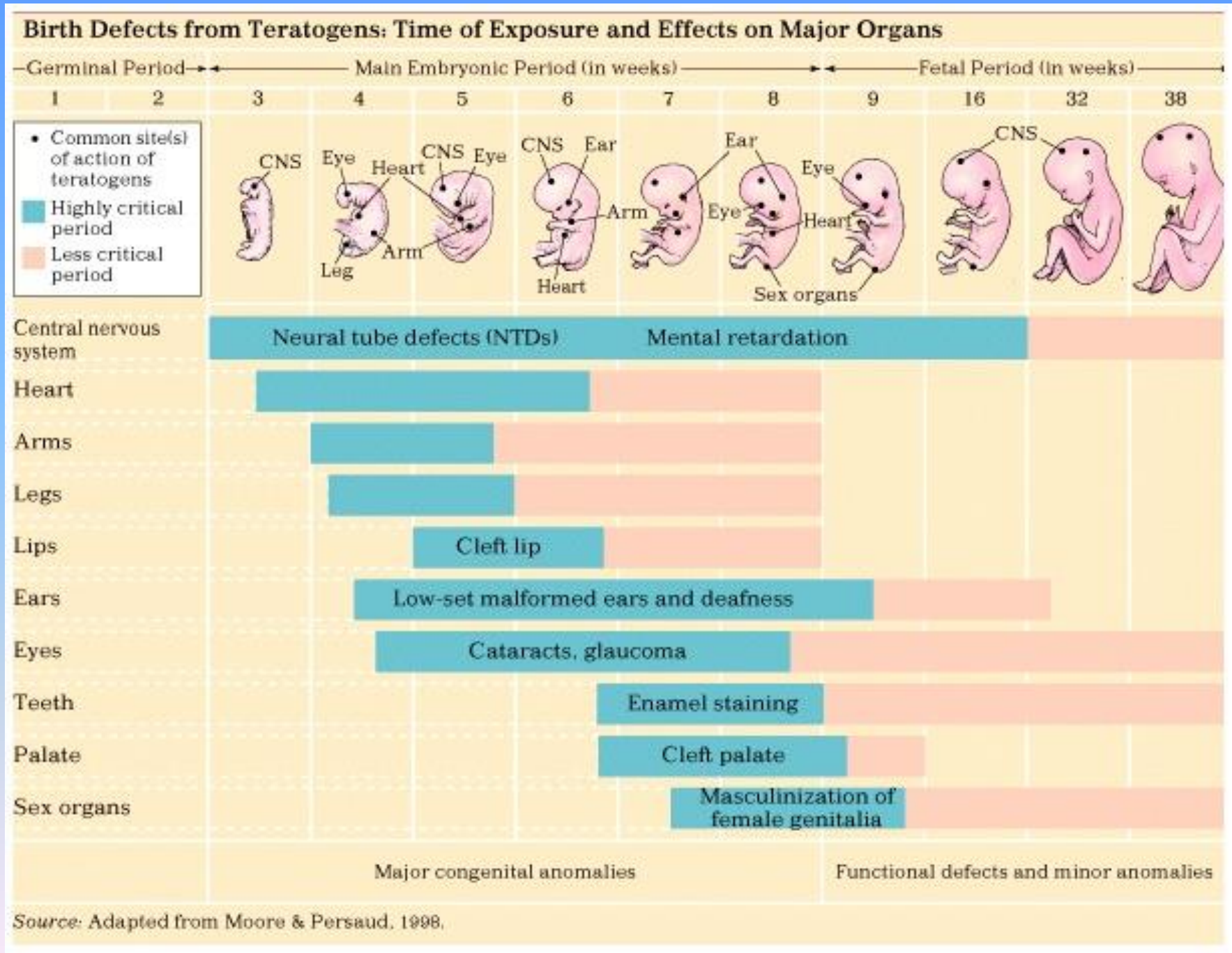
# Placenta

- A cushion of cells in the mother by which the fetus receives oxygen and nutrition
- Acts as a filter to screen out substances that could harm the fetus


Uterus
Placenta
Chorion
Maternal blood circulation
Fetus
Umbilical cord
Amniotic fluid
Amnion

# Teratogens

- Substances that cross the placental barrier and prevent the fetus from developing normally
- Includes: radiation, toxic chemicals, viruses, drugs, alcohol, nicotine, etc.


Birth Defects from Teratogens: Time of Exposure and Effects on Major Organs
Germinal Period
Main Embryonic Period (in weeks)
Fetal Period (in weeks)
1
2
3
4
5
6
7
8
9
16
32
38
Common site(s) of action of teratogens
Highly critical period
Less critical period
CNS
Eye
Heart
CNS
Eye
Leg
Arm
CNS
Ear
Arm
Heart
Ear
Eye
Eye
Heart
Sex organs
CNS
Central nervous system
Neural tube defects (NTDs)
Mental retardation
Heart
Arms
Legs
Lips
Cleft lip
Ears
Low-set malformed ears and deafness
Eyes
Cataracts, glaucoma
Teeth
Enamel staining
Palate
Cleft palate
Sex organs
Masculinization of female genitalia
Major congenital anomalies
Functional defects and minor anomalies
Source: Adapted from Moore & Persaud, 1998.

# Fetal Alcohol Syndrome (FAS)

- Physical and cognitive abnormalities that appear in children whose mothers consumed large amounts of alcohol while pregnant

# The Beginnings of Life: The Newborn

# Rooting Reflex

- Baby's tendency, when touched on the cheek, to open the mouth and search for the nipple
- Is an automatic, unlearned response

# Temperament

- Person's characteristic emotional excitability
- A child might be:
  - An "easy" or "difficult" baby
- Temperament shown in infancy appears to carry through a person's life.

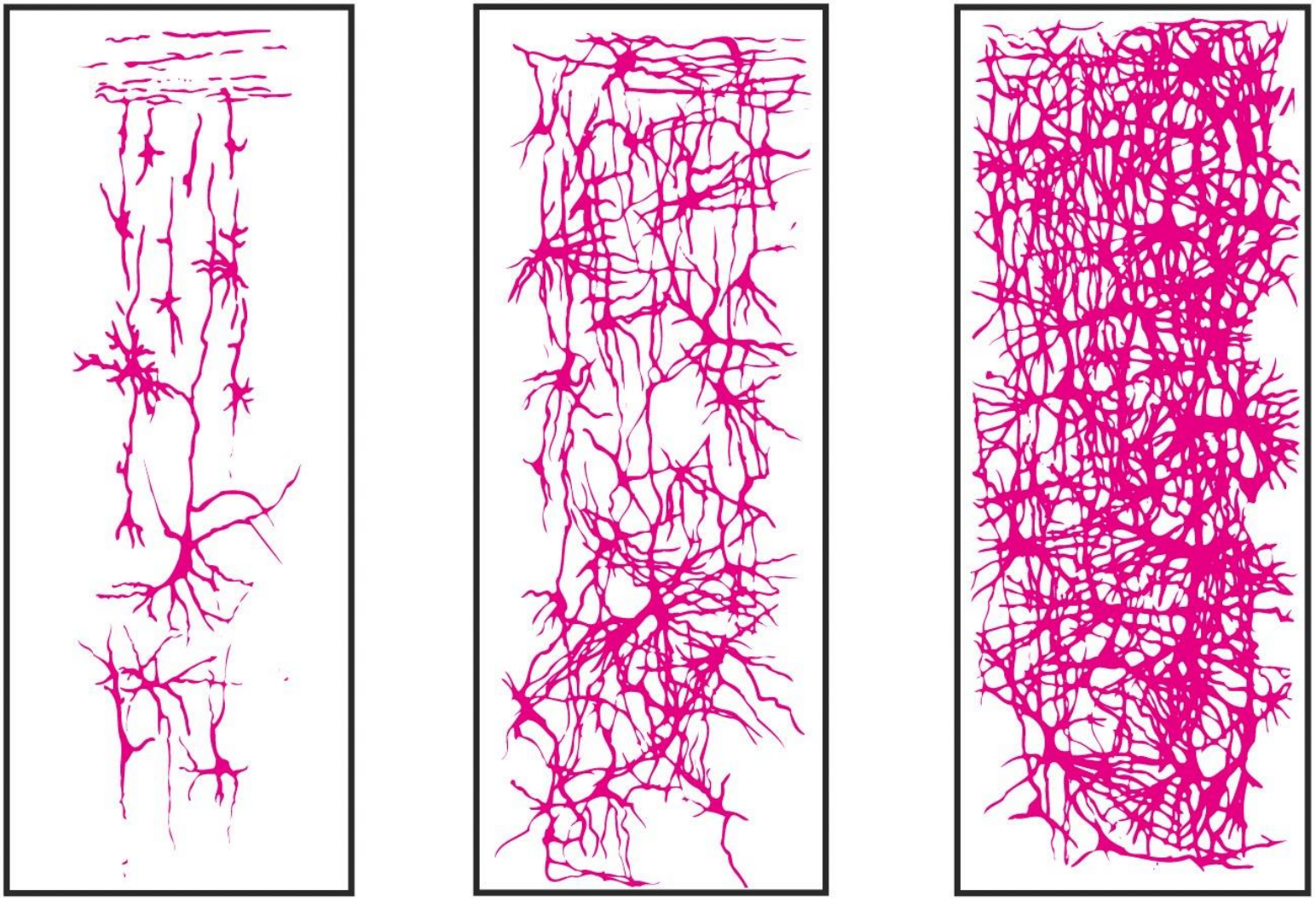
# Physical Development in Infancy and Childhood

# Infant, Toddler, Child

- *Infant*: First year
- *Toddler*: From about 1 year to 3 years of age
- *Child*: Span between toddler and teen

# Physical Development in Infancy and Childhood: The Developing Brain

# Neural Development



# Maturation

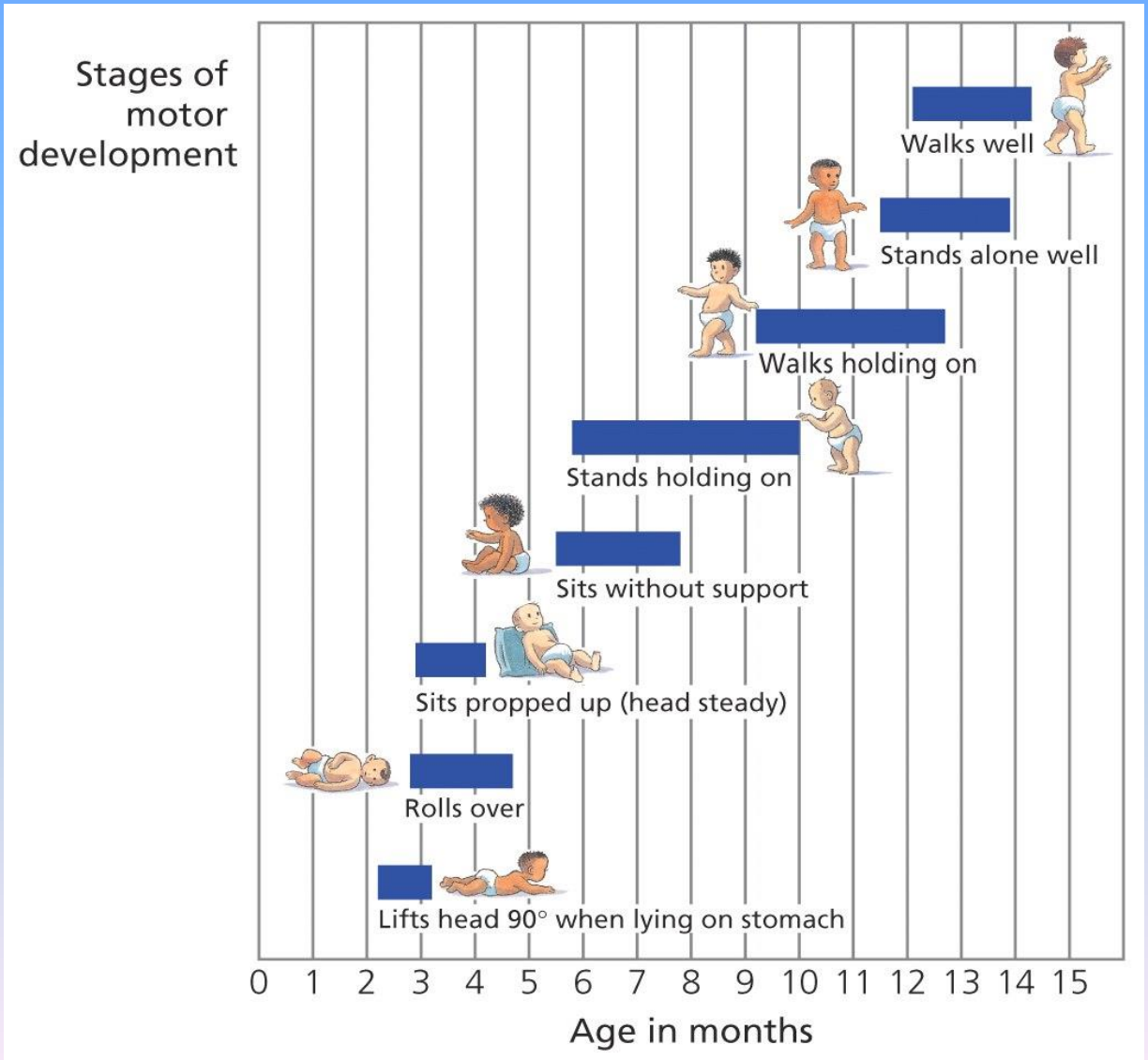
- Biological growth processes that enable orderly changes in behavior

# Physical Development in Infancy and Childhood: Motor Development

# Motor Development

- Includes all *physical* skills and *muscular* coordination

# Motor Development



# Cognitive Development in Infancy and Childhood: Piaget's Cognitive Stages

# Jean Piaget (pee-ah-ZHAY)

- Pioneer in the study of developmental psychology who introduced a *stage theory* of cognitive development that lead to a better understanding of children's thought processes
- Proposed a theory consisting of *four stages* of cognitive development

# Cognition

- All the *mental* activities associated with thinking, knowing, and remembering

- Children *think differently* than adults do

# Schemas

- Concepts or mental frameworks that people use to organize and interpret information
- Sometimes called schemes
- A person's "picture of the world"

# Assimilation

- Interpreting a new experience within the context of existing schemas
- The new experience is similar to other previous experiences

# Accommodation

- Adapting current schemas to incorporate new information
- The new experience is so novel the person's schemata must be changed to accommodate it

# Assimilation/Accommodation


Two-year-old Jocelyn has learned the schema for "dog" from her picture books.

# Assimilation/Accommodation


Two-year-old Jocelyn has learned the schema for "dog" from her picture books.

Jocelyn sees a cat and calls it a "dog." She is trying to assimilate this new animal into an existing schema. Her mother tells her, "No, it's a cat."

# Assimilation/Accommodation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Jocelyn accommodates her schema for 4-legged animals and continues to modify that schema to include different kinds of dogs and cats in the neighborhood.

# Sensorimotor Stage

- Piaget's first stage of cognitive development
- From *birth to about age two*
- Child gathers information about the world through *sensory* impressions and motor activities
- Child learns object permanence

# Object Permanence

- Awareness that things *continue to exist* even *when you cannot see* or hear them
- “Out of sight, out of mind”

# Preoperational Stage

- Piaget's second stage of cognitive development
- From about age 2 to age 6 or 7
- Children learns to use *language* but *cannot* yet think *logically*

# Egocentrism

- In Piaget's theory, the *inability* of the preoperational child to take *another person's point of view*
- Includes a child's inability to understand that symbols can represent other objects

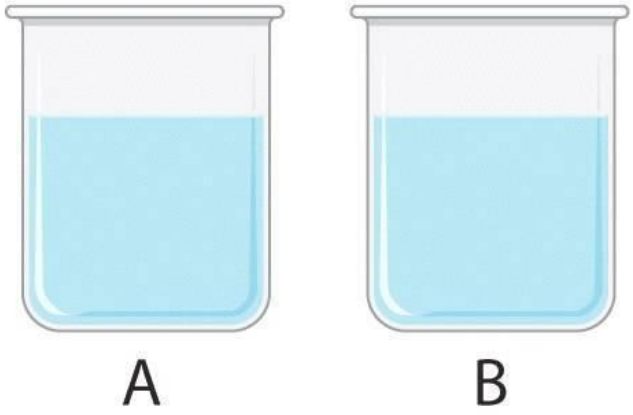
# Concrete Operational Stage

- Piaget's third stage of cognitive development
- From about age 6 to 11
- Child gain the mental skills that let them *think logically* about concrete events
- Learn *conservation*

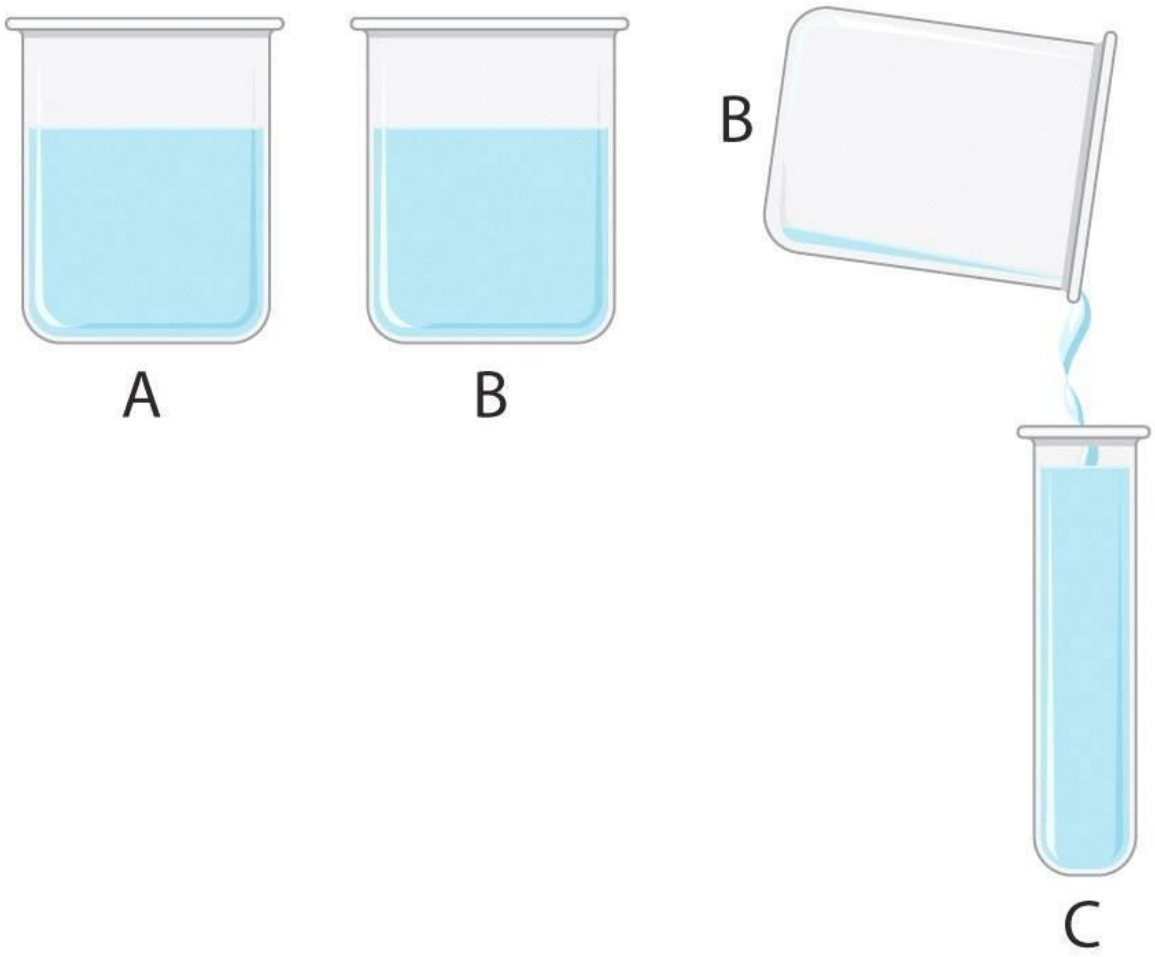
# Conservation

- An understanding that certain properties *remain constant despite changes in their form*
- The properties can include mass, volume, and numbers.

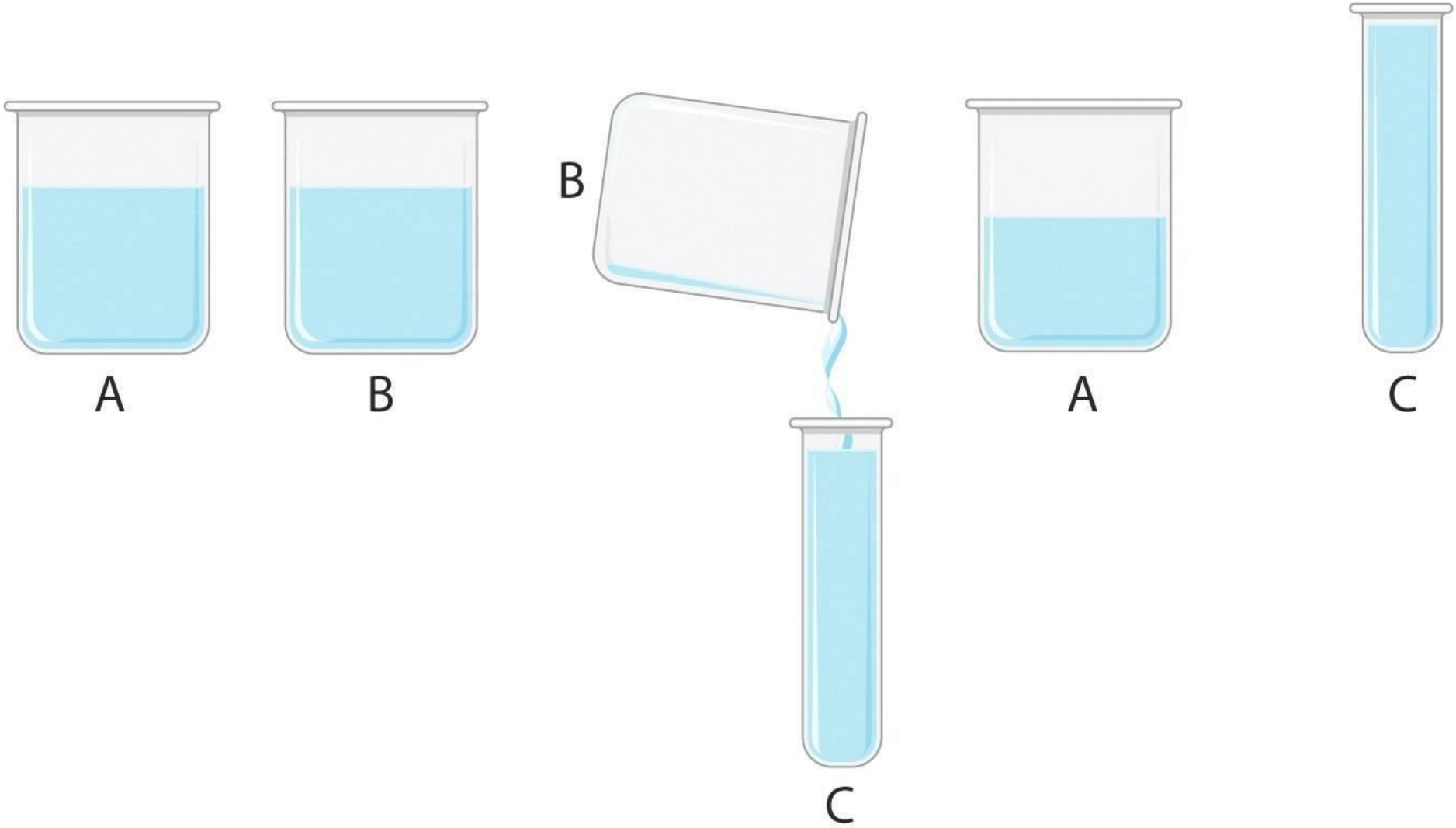
# Conservation



# Conservation

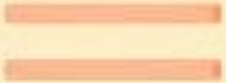
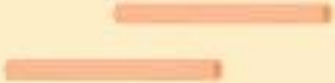


# Conservation



# Types of Conservation Tasks

**Tests of Various Types of Conservation**

| Type of conservation | Initial presentation | Transformation | Question | Preoperational child's answer |
|---|---|---|---|---|
| Liquid | Two equal glasses of liquid.  | Pour one into a taller, narrower glass.  | Which glass contains more? | The taller one.  |
| Number | Two equal lines of checkers.  | Increase spacing of checkers in one line.  | Which line has more checkers? | The longer one.  |
| Matter | Two equal balls of clay.  | Squeeze one ball into a long, thin shape.  | Which piece has more clay? | The long one.  |
| Length | Two sticks of equal length.  | Move one stick.  | Which stick is longer? | The one that is farther to the right.  |

# Formal Operational Stage

- Piaget's fourth and last stage of cognitive development
- About age 12 on up
- Children begin to think logically about *abstract concepts* and form strategies about things they *may not have experienced*
- Can solve *hypothetical* problems (What if…. problems)

# Cognitive Development in Infancy and Childhood: Assessing Piaget

# Assessing Piaget's Theory

**Table 14.1**

**Piaget's Stages of Cognitive Development**

| Typical Age Range | Description of Stage | Key Developmental Events |
|---|---|---|
| Birth to nearly 2 years | ***Sensorimotor*** Experiencing the world through senses and actions (looking, touching, mouthing, and grasping) | • Object permanence |
| About 2 to 6 or 7 years | ***Preoperational*** Representing things with words and images but lacking logical reasoning | • Pretend play<br>• Egocentrism<br>• Language development |
| About 6 or 7 to 11 years | ***Concrete operational*** Thinking logically about concrete events; grasping concrete analogies and performing arithmetical operations | • Conservation<br>• Mathematical transformations |
| About 12 through adulthood | ***Formal operational*** Abstract reasoning | • Abstract logic<br>• Potential for mature moral reasoning |

# Assessing Piaget's Theory

- Piaget underestimated the child's ability at various ages.
- Piaget's theory doesn't take into account culture and social differences.

# Social Development in Infancy and Childhood

# Stranger Anxiety

- The fear of strangers that infants commonly display
- Begins around 8 months of age

# Attachment

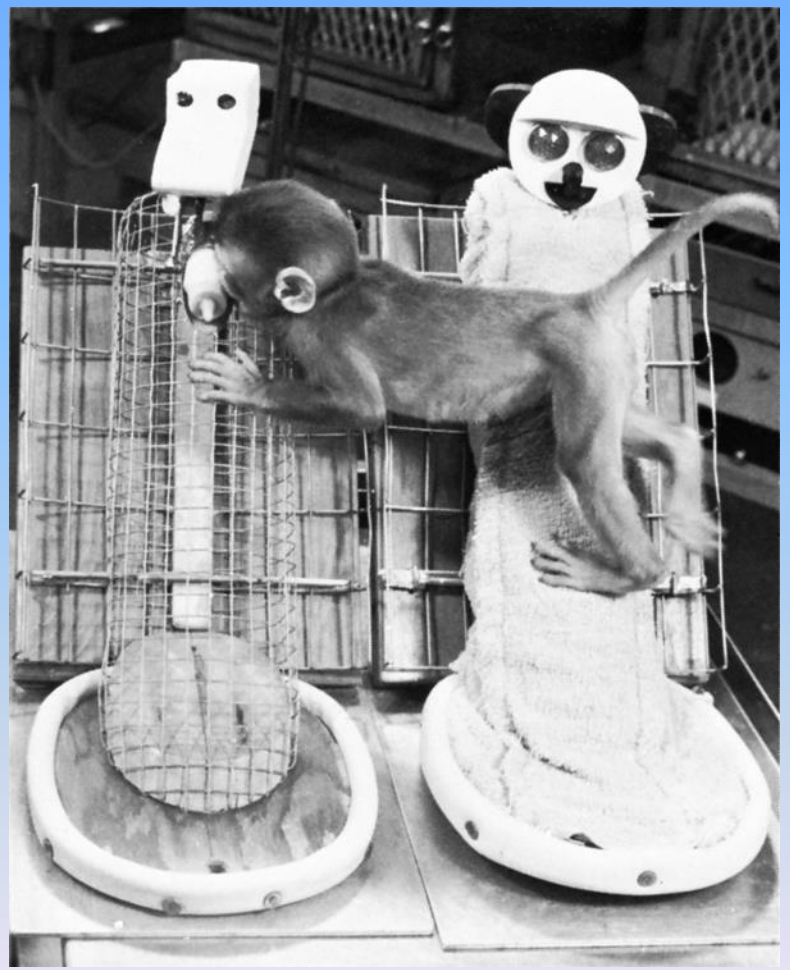
- Emotional tie with another person shown by seeking closeness by seeking closeness to the caregiver and showing distress on separation
- Body contact, familiarity, and responsiveness all contribute to attachment.

# Harry Harlow

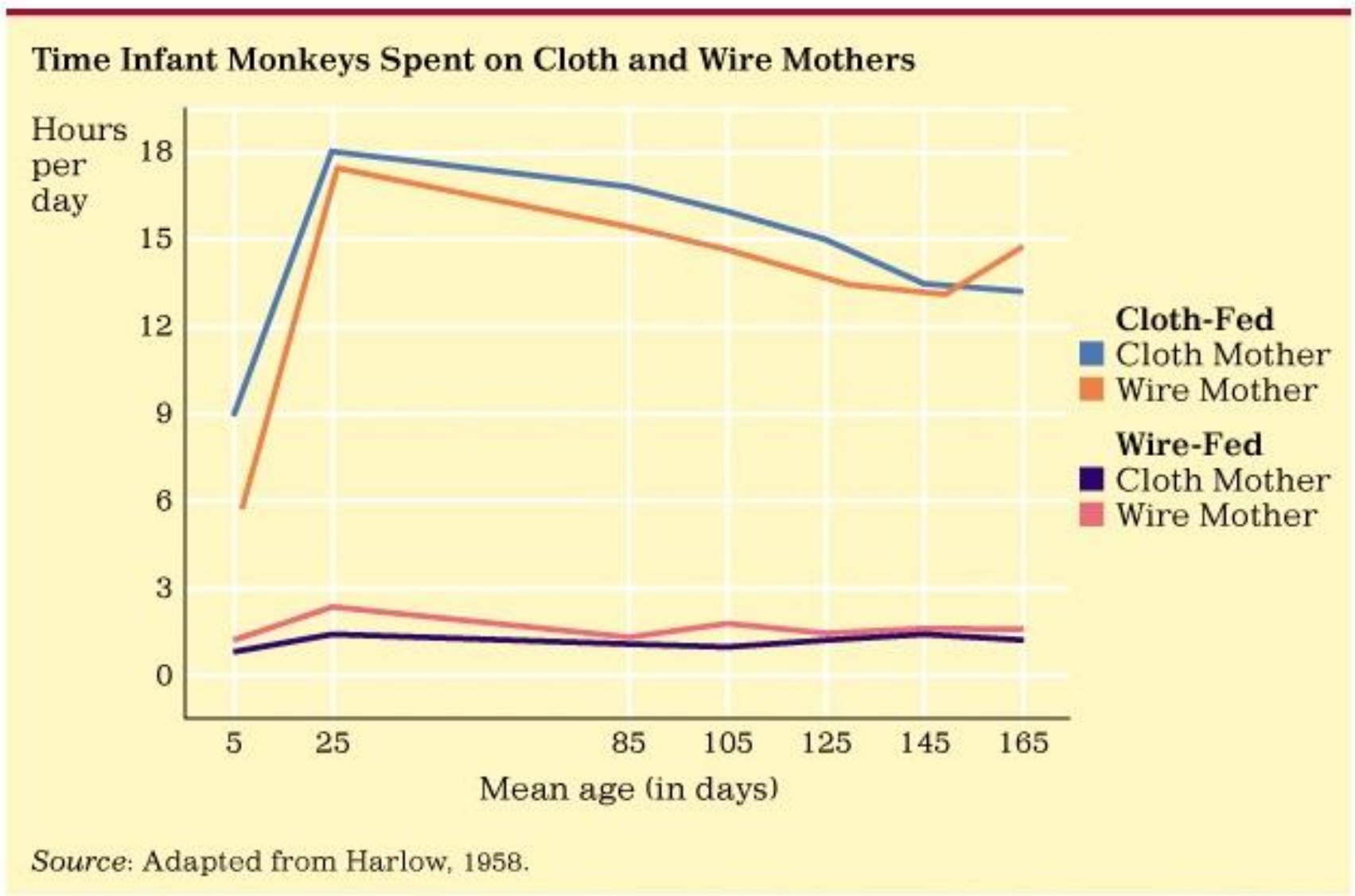
- Did research with  infant monkeys on how body contact relates to attachment
- The monkeys had to chose between a cloth mother or a wire mother that provided food.

# Harry Harlow

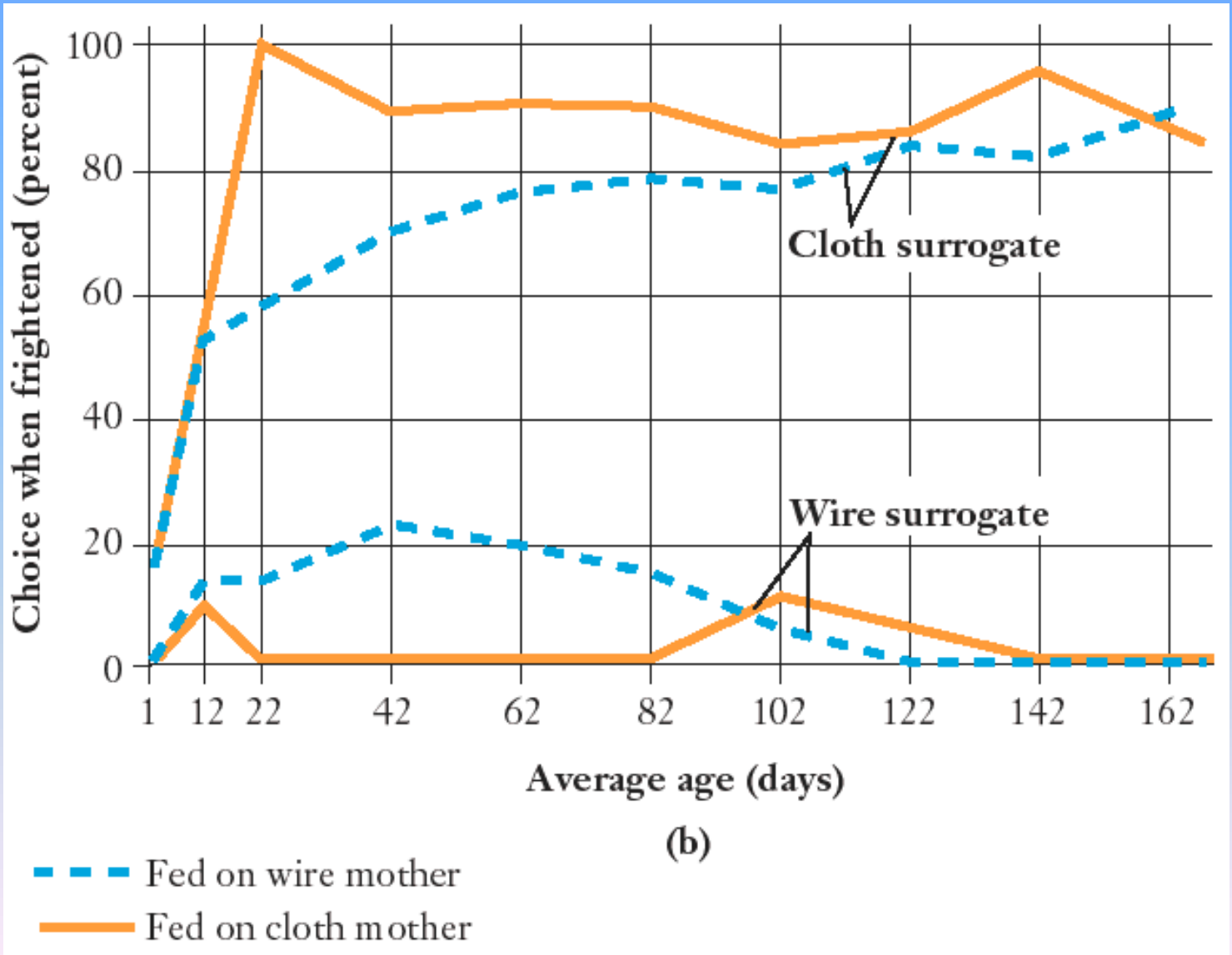
- The monkeys spent most of their time by the cloth mother.



# Harry Harlow



# Harlow's Study



# Familiarity

- Sense of contentment with that which is already known
- Infants are familiar with their parents and caregivers.

# Imprinting

- A process by which certain animals form attachments during a critical period early in life
- Konrad Lorenz studied imprinting.

# Konrad Lorenz

- Studied imprinted behaviors
- Goslings are imprinted to follow the first large moving object they see.

# Critical Period

- Optimal shortly after birth when an organism's exposure to certain stimuli produces proper development

# Responsiveness

- Responsive parents are aware of what their children are doing.
- Unresponsive parents ignore their children--helping only when they want to.

# Securely or Insecurely Attached

- Securely attached – children will explore their environment when primary caregiver is present
- Insecurely attached – children will appear distressed and cry when caregiver leaves.  Will cling to them when they return

# Effects of Attachment

- Secure attachment predicts social competence.
- Deprivation of attachment is linked to negative outcome.
- A responsive environment helps most infants recover from attachment disruption.

# Parental Patterns

- Daumrind's three main parenting styles
  - Authoritarian parenting
  - Permissive parenting
  - Authoritative parenting

# Authoritarian Parenting

- Style of parenting marked by imposing rules and expecting obedience
- Low in warmth
- Discipline is strict and sometimes physical.
- Communication high from parent to child and low from child to parent
- Maturity expectations are high.

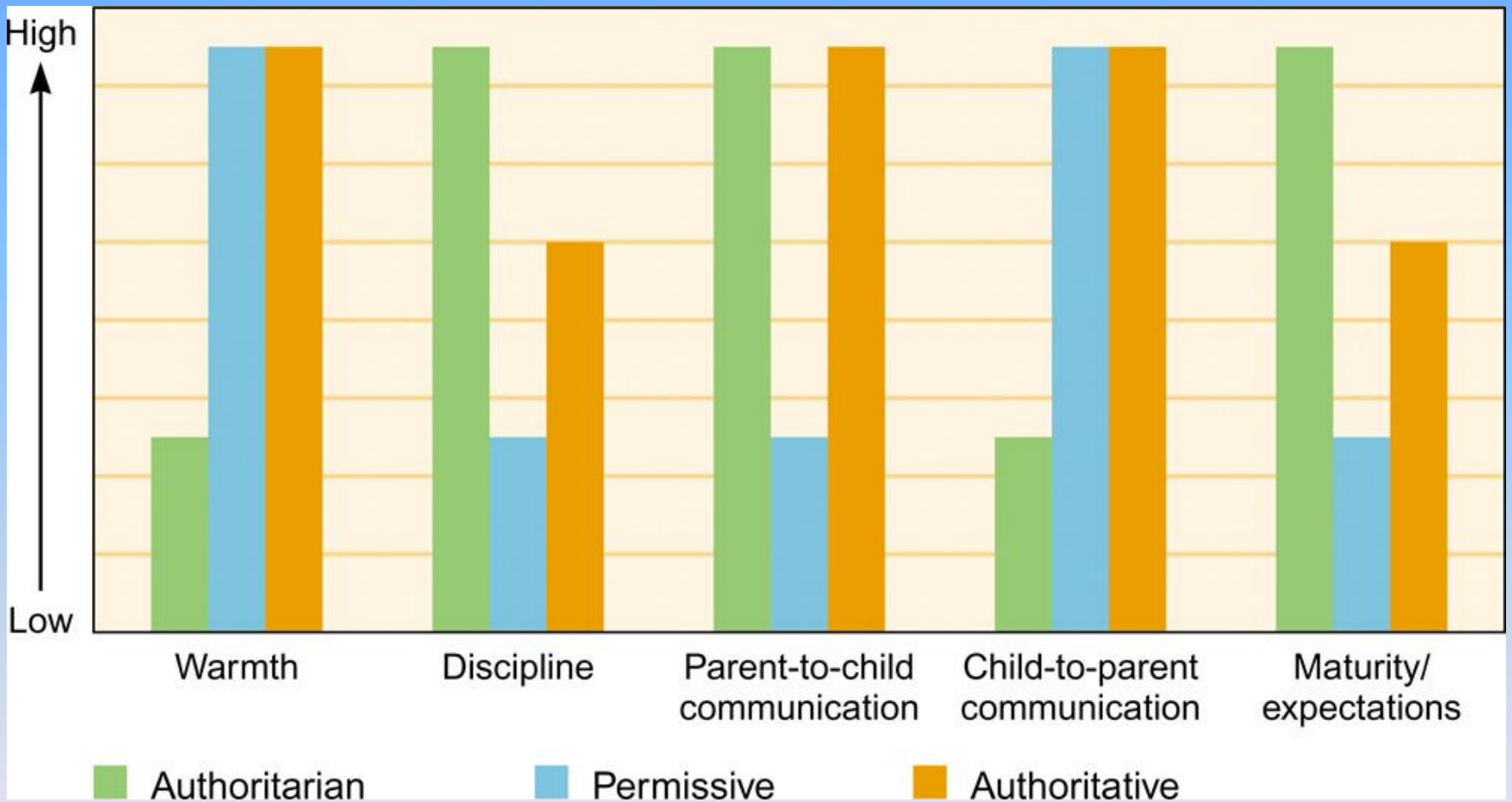
# Permissive Parenting

- Style of parenting marked by submitting to children's desired, making few demands, and using little punishment
- High in warmth but rarely discipline
- Communication is low from parent to child but high from child to parent.
- Expectations of maturity are low.

# Authoritative Parenting

- Style of parenting marked by making demands on the child, being responsive, setting and enforcing rules, and discussing the reason behind the rules
- High in warmth with moderate discipline
- High in communication and negotiating
- Maturity expectations are moderate.

# Parenting Styles



# Three Key Developmental Issues

# Continuity and Stages

- How much of behavior is continuous and how much follows a more stage like development?

# Stability and Change

- What developmental traits remain stable over time, and which change?

# Nature and Nurture

- How much of our behavior is due to nature and how much is due to nurture?
- How do nature and nurture interact in development?

# The End