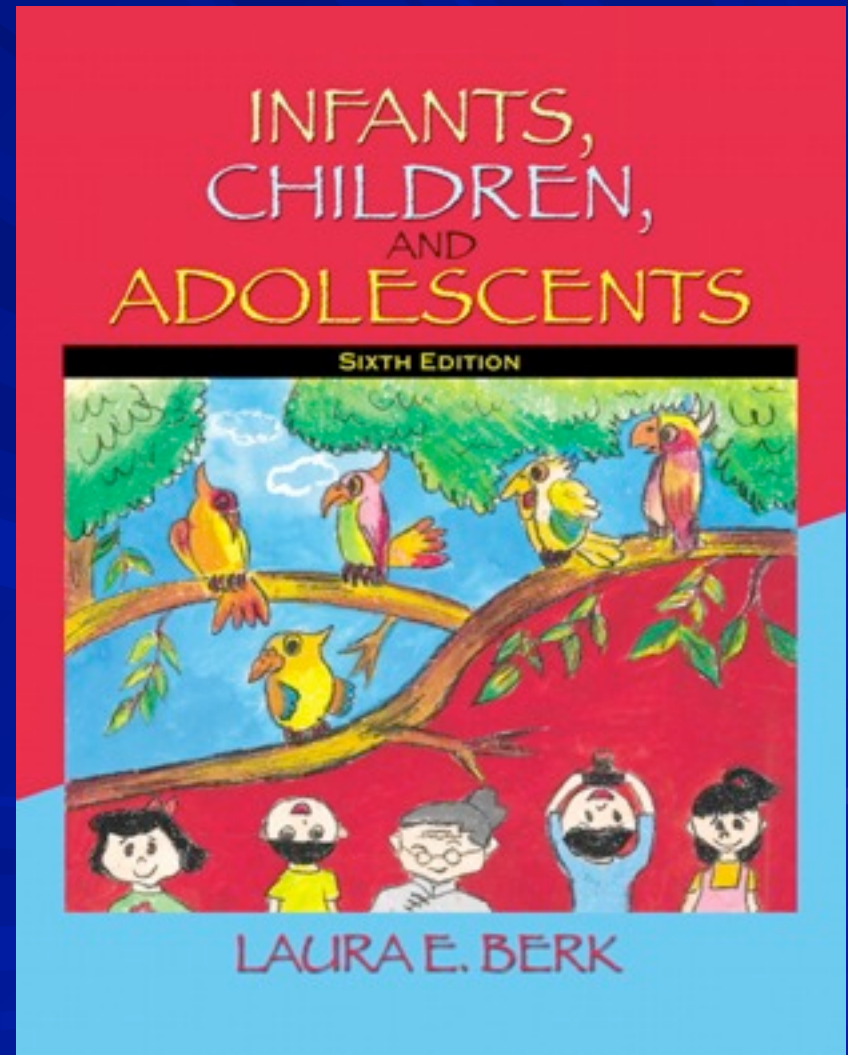


Chapter 6: Cognitive Development in Infancy and Toddlerhood



In this chapter..

- Examine:
 - Piaget
 - Information Processing Theory
 - Vygotsky



Jean Piaget

- Swiss theorist
- Cognitive development based on interaction with environment
- Proposed 4 stages
- ***Sensorimotor stage*** = infancy to 2 years
- Exploring build *mental schemas*
- ***Introduction to Piaget***

★ Building Schemes

■ Adaptation

- Building schemes by interacting with environment
 - E.g., toy squeaks
- 2 subtypes



Assimilation and Accomodation

■ Assimilation

- Use existing schemes to interpret world

■ Accomodation

- Adjust schemes/create new ones

Organization

- Internal process
- Form interconnections of schemes



★ Circular Reactions

- Piaget studied his children
- Limited in purposeful activities
- Accidental learning of how environment works is important
- Attempt to repeat accidental discovery = ***circular reaction***
- ***Primary circular reactions*** = focused on own body

Piaget's Sensorimotor Substages

SENSORIMOTOR SUBSTAGE	TYPICAL ADAPTIVE BEHAVIORS
1. Reflexive schemes (birth–1 month)	Newborn reflexes (see Chapter 4, page 000)
2. Primary circular reactions (1–4 months)	Simple motor habits centered around the infant's own body; limited anticipation of events
3. Secondary circular reactions (4–8 months)	Actions aimed at repeating interesting effects in the surrounding world; imitation of familiar behaviors
4. Coordination of secondary circular reactions (8–12 months)	Intentional, or goal-directed, behavior; ability to find a hidden object in the first location in which it is hidden (object permanence); improved anticipation of events; imitation of behaviors slightly different from those the infant usually performs
5. Tertiary circular reactions (12–18 months)	Exploration of the properties of objects by acting on them in novel ways; imitation of unfamiliar behaviors; ability to search in several locations for a hidden object (accurate A–B search)
6. Mental representation (18 months–2 years)	Internal depictions of objects and events, as indicated by sudden solutions to problems; ability to find an object that has been moved while out of sight (invisible displacement); deferred imitation; and make-believe play

Stage 1: Reflexive Schemas (birth – 1 month)

- Motor activity predominately comprised of reflexes

Stage 2: Primary Circular Reactions (1 – 4 months)

- Reflexes fade
 - Voluntary movement more predominant
 - Accidental discoveries of body
- = ***Primary circular reactions***

Stage 3: Secondary Circular Reactions (4 – 8 months)

- Infants sitting up
- Able to voluntarily reach for and manipulate objects
- Focus is on external environment Not on self anymore
- More sophisticated circular reactions = ***secondary circular reactions***

Accidental discoveries are now related to the environment

Kicks blanket off accidentally ---> you put it on ---> They kick it off

Stage 4: Coordination of Secondary Circular Reactions (8 – 12 months)


- Circular reactions form mental schemas
- Combine circular reactions
- Intentional goal directed behaviour
- ***Object Permanence*** achieved
- Make ***A-not-B-Search error***
- ***Object Permanence***



Stage 5: Tertiary Circular Reactions (12 – 18 months)

- Circular reactions are experimental
- Stop making the A-not-B-search error
- Able to imitate others

Want to see what happens if they do something with an object they already have schemas about.



Stage 6: Mental Representations (18 months to 2 years)

- Able to create mental representations of objects
- Can manipulate mental images
- ★ ■ Capable of *Deferred Imitation*
- Engages in *Make-believe play*



Common criticism is that he didn't give children enough credit

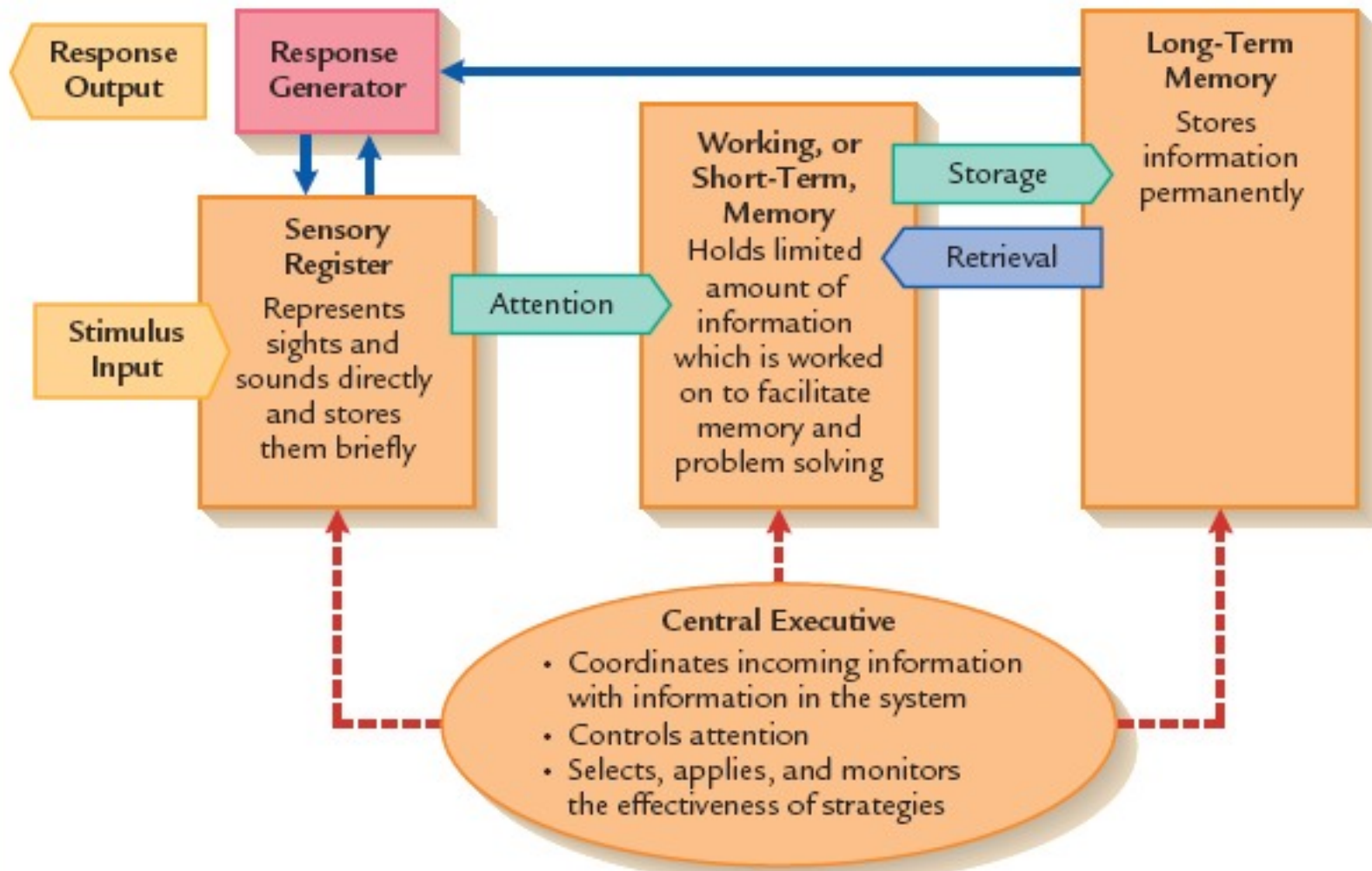
Criticism of Piaget's Work

- Renée Baillargeon
- Found evidence for object permanence in the first few months of life.
- Refer to text
- Researchers speculated that children have innate cognitive abilities
- Development is continuous and not discontinuous
Piaget
others

Information Processing Theory

- Agree with Piaget that we learn via acting on environment
- We hold information on sensory, short term, and long term memory
- Development is continuous however

Store Model of Information Processing System



Information Processing: Attention

- Infants attend to complex visual stimuli
- Novelty grabs their attention
- At toddler age, are able to select what to focus on and sustain this focus



Information Processing: **Memory**

- **Test via Habituation** research *Demonstrates novelty becomes habitual*
- Infants able to **learn and retain information**
- Child does not need to be **physically mobile to learn**
- By 1 year of age, able to **recall** information

Information Processing: Categorization

- By 6 months, infants can categorize based on two features (ex. shape and color).
- Habituation studies demonstrate this ability



Vygotsky's Sociocultural Theory

- **Social contexts** (other people) contribute to cognitive development
- Children learn via social interactions and joint activities
- Learn to master activities from mature members
- Activities they master dependant on culture

Interactions with others are the most important contributors to learning



Vygotsky: Zone of Proximal Development

- Child who is unable to master a task is able to do so with guidance of more mastered member of society
- Sociology Cultural theory and Introduction to Vygotsky
- Piaget Vs. Vygotsky

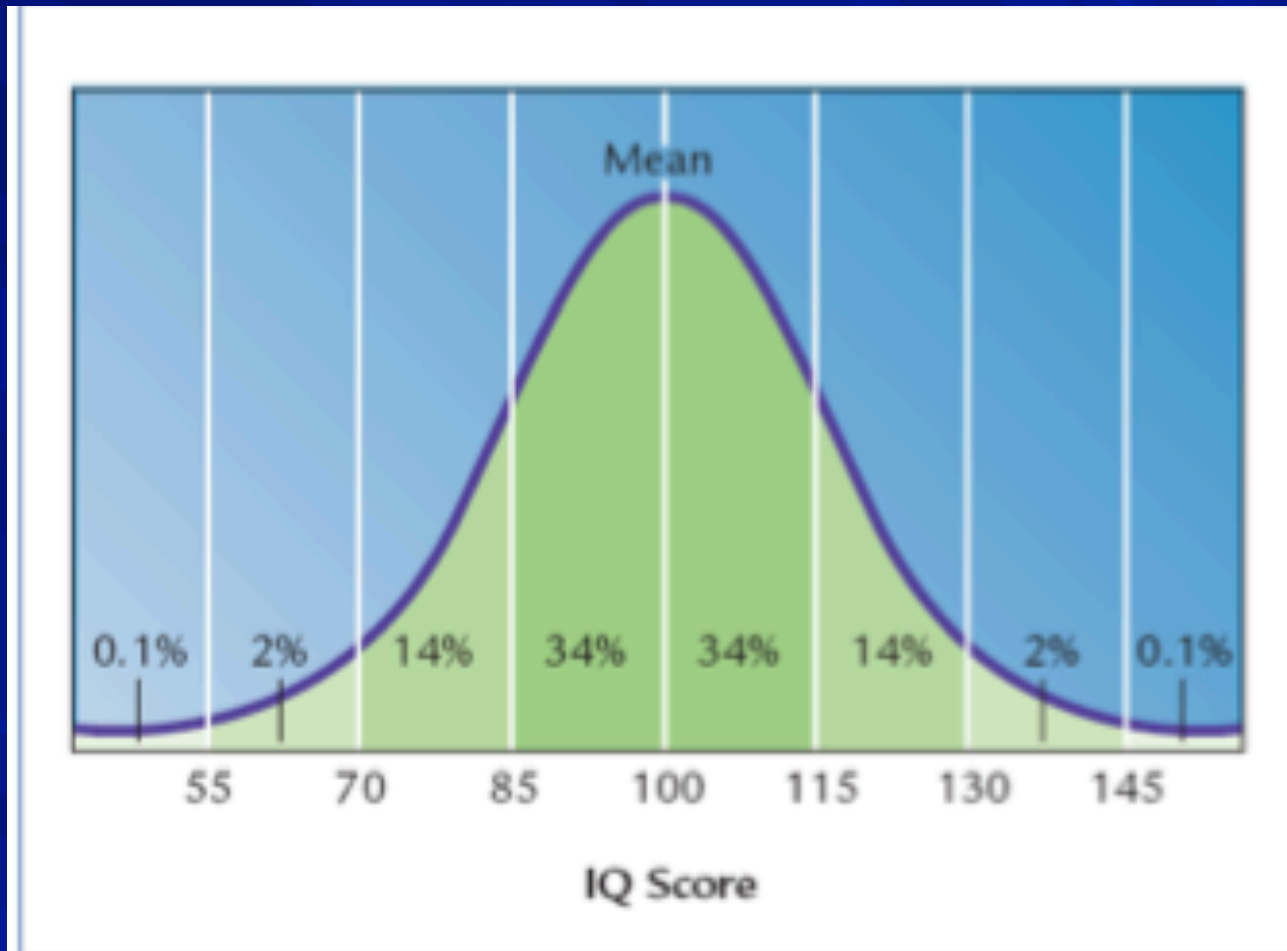
SHE SAID TAKE NOTES ON THIS

But who cares because she is just going to get the questions from the textbook bank anyway....

Individual Differences in Early Cognitive Development

- Cognitive theories = how children develop
- Mental tests = measures their development
- ***Intelligence Quotient (IQ)*** used at all ages
- Standardized test

Normal Distribution of Intelligence Test Scores



IQ cont.

- Able to test infants
- Not all early tests predict later IQ
- Considerable fluctuation in IQ from childhood to adolescence
- Habituation studies predict later IQ

High Quality HOME Environment

- Parent emotional and verbal responsiveness
- Parental acceptance
- Safe physical environment
- Appropriate play materials
- Parental involvement
- Variety, daily stimulation
- SES major contributing factor to cognitive development



Milestones of Language Development During the First Two

APPROXIMATE AGE	MILESTONE
2 months	Infants coo, making pleasant vowel sounds.
6 months on	Infants babble, adding consonants to their cooing sounds and repeating syllables. By 7 months, babbling starts to include many sounds of spoken languages.
	Infants observe with interest as the caregiver plays turn-taking games, such as pat-a-cake and peekaboo.
8–12 months	Infants comprehend some words.
	Infants become more accurate at establishing joint attention with the caregiver, who often verbally labels what the baby is looking at.
	Infants actively participate in turn-taking games, trading roles with the caregiver.
	Infants use preverbal gestures, such as showing and pointing, to influence the behavior of others.
12 months	Babbling includes sound and intonation patterns of the child's language community.
	Toddlers say their first recognizable word.
18–24 months	Vocabulary expands from about 50 to 200 spoken words.
	Toddlers combine two words.

Getting Ready to Talk

■ First speech sounds

- Cooing (2 months) **vowels**
- Babbling (6 months) **syllables**
- Both evident in hearing impaired children
- **Requires hearing to develop further**
- Sensitive periods for language development



Starting to Talk



- **First Words** (2nd 1/2 of 1st year)

- Underextension *only calls own dog a 'dog'*
- Overextension *calls a cat a dog*

- **Two-Word Utterances**

- “mama home”
- Telegraphic speech

Comprehension versus Production

- **Comprehension** = understanding language
- Develops first

- **Production** = using words
- Develops after comprehension
- Creates frustration for many children

Supporting Early Language Development

Infants

- Respond to coos and babbles
- Establish and respond to joint attention
- Play social games
- Child-directed speech

Toddlers

- Play make-believe together
- Have frequent conversations
- Read to toddlers often and talk about the books