

Cognitive Development During The First Three Years

Chapter 5



Behaviorist Approach



- Babies are born with the ability to learn
- Classical Conditioning
- Operant Conditioning
 - Reinforcement and Punishment

Infant Memory

- **Infantile amnesia:** inability to remember events prior to age 3 years
- Operant conditioning with mobiles
 - Babies can remember mobiles they played with days or weeks ago
 - Infants and toddlers can remember toy mobiles



Bayley Scales of Infant and Toddler Development



- Measures current development, not future functioning
 - Mental Scale
 - Motor Scale
 - Behavior Training Scale

HOME



- **Home Observation of the Environment**
- Among other things, assesses:
 - Parental responsiveness
 - Number of books in home
 - Presence of educational playthings

Parental Priming Mechanisms for Normal Development



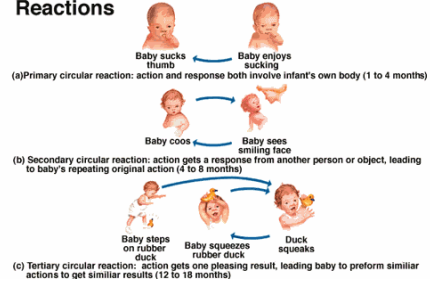
- Provide sensory stimulation
- Mentor in labeling, sorting, & comparing
- Help with skill building
- Celebrate accomplishments
- Protect from punishment for exploring
- Stimulate language and communication

Piagetian Sensorimotor Stage

Substage	Age in Mos	Description
Reflexes	Up to 1	Gain control over reflexes
Primary Circular	1-4	Repeat pleasurable chance behaviors (thumb sucking)
Secondary Circular	4-8	Repeat interesting actions
Coordinate Secondary Circular	8-12	Purposeful and deliberate behavior
Tertiary	12-18	Curiosity and experimentations
Mental Combinations	18-24	Symbolic thought; insight

Circular Reactions

Primary, Secondary, And Tertiary Circular Reactions



Types of Imitation

- **Invisible**
 - Using body parts baby cannot see ...like the mouth
- **Visible**
 - Hands and feet..parts baby can see
- **Deferred**
 - Imitation after a delay
- **Elicited**
 - Imitating based on an explanation only



Object Permanence

- Realizing that an object exists even when out of sight
- Prior to 8 months
 - If I drop my toy and I can't see it...it is gone!
 -THIS is why peek-a-boo is so much fun!
- 8-12 months
 - You hid my toy...I'm looking for it the last place I saw it!
- After a year
 - You hid my toy...I'm looking for it!



Representational Thinking

- **Pictorial Competence**
 - The ability to understand the nature of pictures
 - Develops at about 19 months of age
 - Seeing a picture of sun and saying "suh"



Dual Representation Hypothesis

- Pictorial competence develops slowly because it is difficult for children to simultaneously mentally represent:
 - a picture
 - AND
 - the object the picture represents



Info-Processing Approach

- **Habituation**
 - A type of learning in which familiarity is indicated by *reduced* response
- **Dishabituation**
 - *Increase* in responsiveness after presentation with a new stimulus

Visual Preferences

- **Novelty Preference**
 - Paying more attention to new visual stimuli
 - Demonstrating ability to tell new from old, or 'visual recognition memory'

Cross-Modal Transfer

- Using one or more senses to guide another sense
 - Feeling your way through a dark room, then finding the way visually when lights are on



Causality

- Understanding that one event causes another
- Allows us to control and predict world
- Develops at around 6 months
 - Manipulating a mobile with hands or feet



Categorization

- **Perceptual**
 - Based on how things look
 - Birds and planes both have wings and can fly
- **Conceptual**
 - Based on what things are
 - Chairs, tables, and sofas are all furniture items

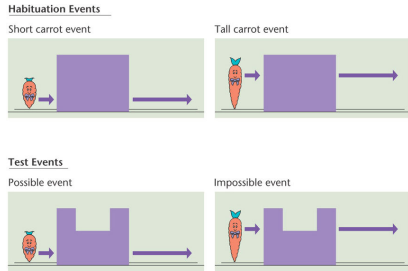


Violation of Expectations



- **Phase 1: Familiarization**
 - Infant watches as events happen normally
- **Phase 2: Violation of Expectation**
 - The event is changed in a way that conflicts with past procedure
- If infant watches the conflict event *longer*, then it is interpreted as noticing a change

Violating Expectations to Study Object Permanence



Number

- Five-month-olds watched Mickey Mouse dolls added or subtracted from behind a screen
- When screen was lifted, babies looked longer at 'wrong' answers



Types of Memory

- **Explicit**
 - Conscious or intentional
 - Facts, names, and events
- **Implicit**
 - Unconscious recall
 - Habits and skills – procedural memory
- **Working**
 - Short-term storage of active information



Guided Participation: Learning from Caregivers

- Interactions with adults during activities
- Helps bridge level of knowledge between adult and child
- Cultural Differences
 - US children engage in more play activities
 - Guatemalan children engage in more work activities



Language Development

- **Language**
 - A communication system based on word, grammar, and cognitive development
- **Literacy**
 - The ability to read and write

Early Vocalizations

- **Crying**
 - Newborns
- **Cooing**
 - Repeating vowel sounds – 'ahhhh'
 - 6-8 weeks
- **Babbling**
 - Repeating consonant sounds – 'ma-ma-ma'
 - 6-10 months





Recognizing Language Sounds

- Precedes language ability
- Fetuses' heart rates slow when they hear familiar nursery rhymes
- By 6 months, babies learn to recognize basic sounds of their native language - *phonemes*

Gestures



- **Conventional Social**
 - Waving bye-bye, nodding head to mean 'yes'
- **Representational**
 - Holding arms up means 'pick me up'
- **Symbolic**
 - Blowing means 'hot'
- Learning gestures helps babies learn to talk



First Words

- **Linguistic Speech**
 - Verbal expression that conveys meaning
 - Around 10-14 months of age
- **Holophrase**
 - Simple syllables that have complete meanings
 - 'Da' could mean "Where is Daddy?"
- 'Naming Explosion' occurs at 16-24 months



First Sentences

- **Telegraphic Speech**
 - 2-3 words expressing one idea
 - 'No do' means "Do not do that"
- Competence in syntax gradually increases



Early Speech Characteristics

- Understanding of grammar precedes use of it
- Under-extension of word meanings
 - The word 'doggy' only refers to your dog
- Over-extension of word meanings
 - All men with gray hair are 'Grampa'
- Over-regularizing of rules
 - "I thinked about it!"



Theories of Language Acquisition

- Nature vs. Nurture?
- Behaviorist view: reinforcement and imitation
- Chomsky's Nativism
 - Brain has the innate capacity to learn language
 - Language Acquisition Device (LAD)
- Synthesis of innate capacity and behaviorist principles most likely

Influences on Early Language Development

- Maturation of the brain
- Social interaction with parents and caregivers



Language is a Social Act

- **Prelinguistic Period**
 - Adults repeat sounds baby makes
- **Vocabulary Development**
 - Parent holds ball while saying “This is a ball”



Child-Directed Speech



- ‘Parentese’ – baby talk
- Simplified words
- Exaggerated vowel sounds
- May help children learn native tongue faster

Adult Reading Styles with Children



- **Describer Style**
 - Adult focuses on describing events in story
 - Invites child to do so, too
- **Comprehender Style**
 - Encourages child to look deeper into meaning of story (What will the lion do now?)
- **Performance-oriented Style**
 - Introduces themes of story and asks questions after

Dialogic Reading

- Shared reading
- Child becomes the storyteller
- Adult is active listener
- Adult asks open-ended questions
 - ‘Why do you think the bunny is afraid?’

