

Week 11: Child cognitive development

Defining development

- Physical development: the maturation of bodily structures
- Motor development: the progression of various motor skills
- Cognitive development: the growth of the child's intellectual functioning
- Social development: changes in the way children deal with others

Piaget's theory of cognitive development

- Concerned with cognitive development — the intellectual growth from infancy to adulthood
- Piaget was the first to suggest that the ways in which infants and children see and understand the world are profoundly different to adults
- Children construct their understanding of the world through their active involvement and interactions
- Proposed that there are 4 main stages of cognitive development

Piaget's stages of cognitive development

1. **Sensorimotor stage** (approx. 0-2 years)

- Birth to approximately two years of age (0-2 years)
- When children are born, they have no concept of past and future, or of 'me' and 'not me' (very here and now & egocentric)
- They develop these distinctions during this stage
- The infant uses their senses and motor abilities to understand the world
- They 'think' with their eyes, hands, ears and other senses (very 'stimulus response'; behavioural)
- Divided into 6 substages:
 - Reflexive schemas:
 - Occurs during first month of birth
 - At first, babies suck, grasp and look in much the same way, no matter what the circumstances; stimulus-response
 - They soon develop *reflexive behaviours* such as sucking objects in the mouth, grasping objects with their hands, following moving or interesting objects with the eyes
 - By the end of approximately 4 weeks old, these actions become *voluntary* (more deliberate reaching and grasping)
 - Primary circular reactions
 - Occurs during 1-4 months of age
 - Infants develop simple motor skills in response to environmental demands
 - These behaviours are motivated by basic needs, and are actions centred on the self (e.g: infant sucks their thumb intentionally because it brings comfort — if not milk)
 - Secondary circular reactions
 - Occurs during 4-8 months of age
 - Infants begin to repeat actions that affect the environment
 - Infants can imitate actions that they have practiced many times

- E.g: pull on hair or jewellery to get attention
- iv. Coordination of secondary circular reactions
 - Occurs during 8-12 months of age
 - Infants develop hand-eye coordination
 - Intentional, or goal-directed behaviour to solve problems
 - During this stage, infants struggle with object permanence. That is, they recognise the existence of objects, but not their permanency (e.g: Peek-A-Boo)
- v. Tertiary circular reactions
 - Occurs during 12-18 months of age
 - Infant repeats actions (mimicry)
 - Experimenting with trial and error (peg boards and fitting blocks)
 - Advanced object permanence (seek out smells, parts of objects, etc.)
 - Start to gain self awareness (as shown by the rouge test)
- vi. Mental representations
 - Occurs during 18-24 months of age
 - Can now solve problems through symbolic means instead of trial and error (bashing spoon as drum)
 - Beginnings of insight and creativity, building objects, function of objects. Start to have imaginative play around 2 years of age

2. **Preoperational Stage** (approx. 2-7 years)

- From approximately 2-7 years of age
- The child uses mental representations of objects and is able to use symbolic thought and language (imaginary friends, scenes and environment between 2-4 years of age)
- They do not yet understand logic (causal relationships in events or social relationships)
- Egocentrism — an inability to see the viewpoint of others and take their perspective (disappears around 3.5-4 years)
 - Tested with the Three Mountains Task
- Also display animism — the belief that inanimate objects have human feelings and intentions
- Theory of Mind: understanding others' thinking
 - Understanding that others may be thinking differing things to you, and insight into what they may be thinking through perspective taking
 - Thus perspective-taking means children are able to lie, take empathy — social relationships
- From 4-7 years of age 'why' questions begin
- Primitive reasoning starts (intuitive sub-stage)
- Thought to arise from the awareness that they know stuff, but don't know how and why they know that stuff
- Do not have ability to 'conserve (conservation)' yet — the ability to understand that the basic properties of things/substances (e.g: volume) remain the same even though they change appearance
- 'Centration' is a problem; can only focus on one aspect or property of something at any one time. Looks like an over focusing on one dimension and ignoring others
- 'Transitive inference': applying rules and reasoning (feather breaking glass)

3. **Concrete Operations Stage** (approx. 7-11 years)

- Child uses logic to solve problems
- Can do the Theory of Mind 'False Beliefs Test'

- Egocentrism and animism decline/disappear
- Children develop the ability to 'conserve', or learn that objects are not always the way that they appear to be
- Also learn about reversibility, meaning that they learn that if things are changed, they can still be the same as they used to be
- Starting to understand hypotheticals (i.e: things that might happen in the future), but not well yet

4. **Formal Operations Stage** (approx. 11+ years)

- Children can now think rationally and logically
- Develop hypothetic-deductive reasoning (from concrete to abstract), metacognition; start to think about why they had that thought
- When faced with a problem, adolescents consider all possible outcomes and develop a hypothesis (*what-ifs*)
- This stage is propositional
- Evaluate the logic of statements (transitive Inference easy)

Attachment

- The first human bond between parent/caregiver and child is thought to influence all later relationships
- Attachment in animals can sometimes take the form of imprinting (when a duck is able to walk about 12 hours after it hatches, it follows the first moving stimulus it sees)
- Infant attachment can be measured via the strange situation
- Based on the strange situation, Ainsworth identified 4 types of attachment:
 1. Secure
 2. Insecure-resistant
 3. Insecure-avoidant
 4. Insecure-disorganised

Strange situation

- Observer shows the experimental room to mother and infant, then leaves the room
- Infant is allowed to explore the playroom for 3 minutes; mother watched but does not participate
- A stranger enters the room and remains silent for 1 minute, then talks to the baby for a minute, then approaches the baby. The mother leaves unobtrusively
- The stranger does not play with the baby but attempts to comfort it if necessary
- After three minutes, the mother returns, greets and consoles the baby
- When the baby has returned to play, the mother leaves again, this time saying "bye-bye" as she leaves
- Stranger attempts to calm and play with the baby
- After 3 minutes, the mother returns and the stranger leaves

1. Secure attachment

- "I'm glad to see you"
- Characteristics of child:
 - Share positive affect with caregivers
 - Seek proximity upon reunion

- Return to independent play easily
 - Expect comfort from parents when they show distress
- 60-65% of American children are classified as securely attached

2. Insecure Anxious-resistant attachment (ambivalent)

- “I hate you”
- Ambivalent attachment
- Characteristics of child:
 - Preoccupied with caregiver’s presence, play/explore very little
 - High distress on departure of mother and then on reunion, often ambivalent showing anger and proximity seeking along with resistance. May be about control?
- Long-term outcomes include dependence (especially for girls) or aggression (especially for boys)
- 10-15% of American children are classified as this type of attachment

3. Insecure Anxious-avoidant attachment

- “I don’t need you”
- Ignore the caregiver/parent
- Characteristics of child:
 - No distress on departure of parent/caregiver
 - Share little positive affect with caregivers
 - Tend to ignore parent on reunion, make only brief contact
- 15-20% of American children are classified as this type of attachment
- Heart rate increased, so shows signs of distress

4. Insecure disorganised/disoriented attachment

- Newer category
- “I don’t know you”
- Characteristics of child:
 - Demonstrate contradictory behaviour
 - Exploration may decline and proximity seeking may increase
 - Exploration may increase with little distress
 - Tend to ignore mother on reunion, make only brief contact
- 5-15% of American children are classified as this type of attachment
- Cortisol increased so genuinely very stressed