Development

- Change across the lifespan
  - Whole capabilities appear as kids grow up
  - And degrade in older adults
- Starts in utero
  - A very important environment

Some capabilities that develop

- Basic knowledge about the world
- Theory of mind
- Understanding conservation of quantity
- Inhibitory control
- Reasoning ability, fluid intelligence
- Language
  - Evidence for a critical period ending age 12-15

Habituation procedures

- Problem: How to measure an infant’s mental processes?
  - They can’t speak, or understand instructions
- One solution:
  - Show them a stimulus until they’re habituated
  - Manipulate the stimulus in some way
  - Are they still habituated, or now dishabituated?
    - Measure: Gaze duration

Physical support

- Does the child stare?
- If yes (3 mo. olds):
  - Thinks box should fall
- If no (slightly older):
  - Thinks everything’s ok
  - May think the finger supports the box
- How to test this?
  - Pull away the finger
Experimental design
- How much should this person know about what's going on?
  - As little as possible

Inhibitory control
- “In the shape game, if I show you a boat, like this, it goes in the left box. If I show you a rabbit, it goes in the right box.”
- “In the color game, if I show you a blue one, it goes in the left box. If I show you a red one, it goes in the right box.”

Inhibitory control
- Children “know” the rule
  - Can show where the items should go
- But can’t act on it
  - Usually viewed as inability to inhibit the first rule they learned
- Inhibitory control isn’t completely developed until our early 20s

Theory of mind
- Understanding that other people have minds of their own
  - And that their thoughts can differ from our own
- Before age 5 or so, kids think that everyone else thinks what they think

False belief test
- Asked, “Where does Teddy think the ball is?”
  - Girl points to green box
- Even if she wants the ball, and knows Teddy wants to steal it
  - Can’t figure out how to deceive Teddy

Conservation
- Understanding that quantity is conserved under certain transformations
  - Develops around age 5-6
Raven’s progressive matrices
A test of reasoning ability (fluid intelligence)

Effects of cognitive aging

![Graph showing the effects of cognitive aging with different types of tests and their z-scores over chronological age.](image)