

Middle Adulthood: Cognitive Development

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What is Intelligence?

- For most of twentieth century, scientists and public assumed there was such a thing as intelligence, with *general intelligence* thought to be a single entity
- Now scientists believe it is more useful to look at adult intelligence as several distinct intellectual capacities

Studying Intelligence During the Twentieth Century

- Psychometricians disagreed about whether general intelligence rises or falls after age 20 or so

Cross-Sectional Research

- For first half of the twentieth century, psychologists were convinced, based on solid evidence, that intelligence declined over time
 - a classic cross-sectional study found that the average male:
 - reached his intellectual peak at about age 18
 - intellectual decline began in mid-20s
 - hundreds of other cross-sectional studies in many nations also found younger adults outscored older adults on measures of intelligence

Longitudinal Research

- In 1955, Nancy Bayley and Melita Oden analyzed adult intelligence of child geniuses who had grown up
 - Found that most of the 36-year-olds were still *improving* in vocabulary, comprehension, and information
- Bayley wondered whether this group's high intelligence during childhood had protected them from age-related decline
- After further research, Bayley concluded:
 - intellectual learning is unimpaired through age 36 and beyond

- Longitudinal research showed that, over time, intellectual growth resulted from:
 - improvements in quality and extent of public education
 - variety of cultural opportunities
 - expanded media information
- Bayley's research also showed:
 - older adults previously tested often did not go beyond 8th grade and so did not fully develop their intelligence
 - each generation scores higher on IQ tests because each is better educated

Cross-Sequential Research

- Longitudinal research is better than cross-sectional, but still not perfect
- Schaie combined the two, his new design is called ***cross-sequential*** research
 - he tested cross-section of 500 adults of different age groups on 5 standard primary mental abilities = foundations of intelligence
 - verbal meaning, spatial orientation, inductive reasoning, number ability, and word fluency

- Schaie concluded people improve in most mental abilities until their 80s, at which point they fall below the mid-range performance of young adults
- Research in many nations confirmed Schaie's general conclusion; for example, that of Baltes
- **Cohort Effects** were identified as being more important than age in explaining differences between age groups.

Two Clusters: Fluid and Crystallized Intelligence

- Fluid Intelligence
 - flexible reasoning used to draw inferences, understand relations between concepts, and speedily process new ideas
 - person with this intelligence would be quick and creative with words and numbers, as well as enjoy intellectual puzzles
 - a test item for it might ask: what comes next in each series? BDACZBYA 456345623456
 - (aging-sensitive: declines with age)

- Crystallized Intelligence
 - accumulation of facts, information, and knowledge that comes with education and experiences within a particular culture
 - a sample item to test for this might be: what would you do with a mango?
 - (aging-resistant improves with age)

Three Forms of Intelligence: Sternberg

1. Analytic
 - mental processes that foster academic proficiency by making possible efficient learning, remembering, and thinking
 - involves abstract planning, strategy selection, focused attention, and information processing
2. Creative Intelligence
 - involves capacity to be intellectually flexible and innovative in new situations
 - divergent = diverse, innovative, and unusual solutions

3. Practical Intelligence
 - involves capacity to adapt one's behavior to the contextual demands of a given situation
 - includes accurate grasp of expectations and needs of people involved and an awareness of skills needed

Selective Gains and Losses

- Many researchers believe that adults make deliberate choices about their intellectual development, separate from their culture or education