Middle Adulthood
Cognitive Development
What is Intelligence?

- Charles Spearman (1920): Proposed theory of General Intelligence (g factor)

- Cross Sectional Research on age related decline of intelligence offers misleading results

- Flynn Effect: trend in increasing average IQ over generations in developed generations

- Cause: wider education and experience, better nutrition, fewer toxins, and decrease in family size (allowing more intellectual stimulation)

- Caution: those who return over time for repeated IQ testing, increased test taking experience, also individuals who are likely to continue to improve (education/experience)
Seattle Longitudinal Study

• First Cross Sequential Study of adult intelligence
  – Began in 1956 by K. Warner Schaie
  – 500 adults at particular ages between 20-50
  – Tested on vocab comprehension, spatial orientation, inductive reasoning, number ability, and word fluency
  – Every seven years retesting each group and adding new groups
  – Comparing scores of retested group with their earlier scores

**Results thus far, people improve in most mental abilities during adulthood**
Components of Intelligence

- Most psychologists have given up the search for one simple general intelligence
- Instead, several intellectual abilities
- Fluid and Crystallized Intelligence
  - Fluid: makes learning of all sorts quick and thorough: abstract thought, short term memory, and speed of thinking
Components of Intelligence

• Crystallized Intelligence: Accumulation of facts, information, and knowledge as a result of education and experience within a particular culture

• Intelligent people have a large knowledge base

• Intelligent people learn quickly and remember what they learn

• Fluid intelligence decreases with age (age-sensitive)

• Crystallized intelligence increases with age (age-resistant)
Sternberg: 3 forms of Intelligence

• **Analytic:** make learning efficient, remembering, and thinking possible

• **Creative:** intellectually flexible and innovative

• **Practical:** capacity to adapt one’s demands to a given situation (includes emotional intelligence)
Eight Intelligences: Gardner

- Linguistic, Logical-mathematical, Musical, Spatial, Bodily-Kinesthetic, Naturalistic, Social Understanding, Self-Understanding

- Each have own neurological network in the brain

- Families and communities prize certain intellectual abilities (high school/bodily-kinesthetic)

- Various Cultures prize certain abilities
Culture and Abilities

- Psychometric evaluation must consider cultural background and assumptions of test authors
Our impact on our Intelligence

- Selective Optimization with Compensation: (Paul and Margaret Baltes) people try to maintain balance in their lives by looking for ways to compensate for physical and cognitive losses

- Each person selects certain aspects of intelligence to optimize and neglects the rest (Developing EXPERTISE)
What is expert cognition?

- **Expert:** someone who is notably more skilled and knowledgeable about a specific intellectual topic or practical ability than the average person
- **Expertise:** product of training and practice over time
- **Experts are not extraordinary; just more knowledgeable about a certain subject**
Expert thought is intuitive, automatic, strategic, and flexible

• Intuitive: Novices guided by formal procedures and rules, experts rely more on past experience and the immediate context

• Automatic: Complex action and thought becomes routine, almost instinctually,

• Strategic: more strategies for accomplishing a particular task

• Flexible: more flexible, more curious, more willing to deviate

• Practice, motivation, and willingness to learn, update, and change are crucial
Expertise to Cope with Stress

- Adults need experience to learn to cope with stressors

- Cognitive appraisal of a stressful event is critical in determining whether or not the stress becomes a stressor
  - Problem-focused coping: solve problems by attacking them in some way (confrontation/changing policy)
  - Emotion-focused coping: dealing with a stressor by changing one’s feelings about it (prevents dealing with problem from head on)