Fundamentals of Cognitive Development

Session 7: Intelligence, Aptitude, and Expertise

Measurement of Latent Traits and Debate about Theories of Intelligence
Constructs vs. Measurements

**Constructs**
- Theoretical conceptualizations
- Idealized entities
- Examples include:
  - Memory, Attention, Empathy, Self-Identity

**Measurements**
- Observational tools
- Can provide direct or indirect evidence of constructs
- Examples include reaction times, accuracy scores, self-reports, response frequencies, Likert-scale surveys
Latent traits are one category of construct

Relatively stable qualities of an individual

• Changeable over the long term

Categorical examples include:

• Preferences
• Dispositions
• Aptitudes
• Expertise
Measuring Latent Traits

Multiple measures required

- Each taps into aspects of the trait
- Different measures tap different features
- Multiple measures provide converging evidence
- Imperfect measures can still add value
Intelligence as Latent Trait

Theories of Intelligence

• Differ in their conception of the *construct* of intelligence

Measurement of intelligence

• Can be independent of the theoretical distinctions of the construct
• Can also reflect aspects of a theory
• Should be considered as a separate but interacting factor when debating the nature of the construct
Intelligence as Latent Trait

Theories of Intelligence
- Differ in their conception of the construct of intelligence

Measurement of intelligence
- Can be independent of the theoretical distinctions of the construct
- Can also reflect aspects of a theory
- Should be considered as a separate but interacting factor when debating the nature of the construct
The Debate this Week

Focus on the CONSTRUCT

- Intelligence is best characterized:
  - As a single factor ‘g’ OR
  - As comprised of multiple, distinct factors

Measurement matters

- But is not the focus
- We are not concerned whether a given measure is valid
  - Validity of a measurement depends upon whether the construct itself is sound