Culture and Cognition

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Cognition and Intelligence

- **Cognition**: Mental processes such as thinking, knowing, and remembering
- **Intelligence**: The capacity to understand the world, think rationally, and to use resources effectively when faced with challenges (Wechsler)
General Intelligence

• Research has found racial differences in intelligence
  – White Americans tend to perform better than Black Americans on intelligence tests by about one standard deviation
• When re-analyzing the data, socioeconomic (SES) accounted for greater differences in intelligence than race (Humphreys, 1985)
  – Black Americans tend to be lower SES than White Americans
  – The difference in intelligence between low and middle SES students was greater than the difference between Blacks and Whites

General Intelligence

• National differences in intelligence
  – Research has found a positive correlation between a country’s Gross National products (GNP) and intelligence
  – Two explanations:
    • Richer societies spend more money on education, raising the level of intelligence
    • The test content may be more familiar to students in richer societies, biasing the results

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Biased Intelligence Testing Procedures

- Sternberg and colleagues (2002) administered intelligence tests to 358 Tanzanian school children
  1. Pre-Test: Traditional testing procedure
  2. Intervention: Feedback given during five minute training on the intelligence test tasks
  3. Post-Test
    - Children performed significantly better on the post-test than the pre-test
    - Post-test scores were weakly correlated with pre-test scores
    - Conclusion: Unfamiliarity with the testing procedures hindered test performance

Cross-Cultural Assessment of Intelligence (Vernon, 1979)

- In interpreting cultural differences in intelligence test scores, consider the following distinctions:
  - Intelligence can be divided into
    - A: Genetic contribution to intelligence
    - B: Intelligence developed within the cultural context
    - C: Performance on the intelligence test
  - C may not accurately measure B
    - Due to biased test (e.g., test language, item content, test-taking motivation, speededness of the test, etc.)
  - Conclusions from C provide very little information about A – ethnic differences in intelligence
Cross-Cultural Assessment of Intelligence

• Performance on intelligence tests does not always reflect performance in real-life cognitive tasks
  – Brazilian street children
  – US housewives comparison shopping in the market
• Therefore, cultural differences on intelligence test scores may not reflect actual differences in intellectual behavior in the real world

Example Intelligence Test

• **Fluid Intelligence**: Reason abstractly on novel problems
  – What comes next in these series?
    5 10 15 20 25 30

  A. □ □ □ □ B. ⌘ □ □ C. ⭐

• **Crystallized Intelligence**: Accumulation of knowledge and skill in familiar domains
  – What is Piaget’s second stage of development?
  – What is the main ingredient in pap?
Intelligence

- In villages, practical, indigenous knowledge:
  - Is not correlated to fluid intelligence
  - Is negatively correlated to formal Western crystallized intelligence
- Learning in formal Western education appears to conflict with learning indigenous societal and occupational practices
- General intelligence may be more related to abilities learned in Western schooling than representative of universal human cognition

Education and Intelligence

- **Western Schooling:** Study many skills in a variety of domains with little direct teacher interaction
- **Traditional Schooling:** Learn few skills through apprenticeships
  - Less likely to observe a general factor of intelligence with traditional schooling because students are only exposed to practices within their specific area of training
Implicit Theories of Intelligence

- **Implicit theories of intelligence**: Individual belief of intelligence
  - This is used as the basis for making judgments about intelligence behavior
  - Necessary for understanding an individual’s behavior and value system
  - Necessary for determining a formal theory of intelligence relevant to a community

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Implicit Theories of Intelligence

- **Taiwan**: Problem solving, social competence, emotional competence, intellectual assertion, intellectual self-effacement
- **Kenya**:
  - **Rieko**: Knowledge and skills
  - **Luoro**: Respect and care for others
  - **Winjo**: Wisdom in real-life problems
  - **Para**: Creativity
  - Only **reiko** is correlated with school achievement
- **Uganda and Zimbabwe**: Social behavior that benefits the group

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Implicit Theories of Intelligence

• Village adults in Zambia were asked to nominate children who were superior at typical village tasks and asked reasons why (Serpell, 1993)
  – Nzelu: Wisdom
  – Chenjela: Aptitude
  – Tumilika: Responsibility
  – Khulupilika: Trustworthy
• Performance in these domains were uncorrelated with school performance

Robert Serpell (2011) on Education

• Indigenous ideas of intelligence in Zambia focus on two components:
  – Quick thinking
  – Social responsibility
• However, public schooling almost exclusively addresses cultivation of knowledge and thinking skills
Implicit Theories of Intelligence

- Examined parent theories of intelligence among different ethnic groups in the US (Okagaki & Stenberg, 1993)
  - Closer the parent’s definitions of intelligence were to the teachers’ definitions of intelligence, the better their children performance in school
- Definitions of intelligence among traditional societies are different from that of formal education
  - Western education may be incompatible with activities valued by traditional societies

Contextualized Cognition (Cole, 1971)

- **Contextualized Cognition**: Focus on specific cognitive performances as related to particular features of the cultural context
  - People are good at doing things that are important to them and that they do often
  - Cultural differences in cognition are due to the fact that cultures differ in the situations in which particular cognitive processes are applied
    - As opposed to the presence of one process in one cultural group and absence in another
Contextualized Cognition

• Vygotsky’s Sociocultural Theory of Development is a theory of contextualized cognition
  – Examines cognitive development within the domains of a cultural activity
  – Proposed that increasing cognitive competence is the result of interactions between people within a society

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Contextualized Cognition

• Conclusion of Cole and colleagues based on data collected with the Kpelle of Liberia (1971)
  – Most cognitive behavior is context-bound
    • This means that intelligence is tied to the situation in which the intelligence is to be manifested
  – It is not possible to generalize cognitive performances from one cultural context to a different context

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Conclusion

• **Universalist Perspective**: Basic cognitive processes are shared across all cultures.
  – However, culture influences the development, content, and use of cognitive processes
• **Relativist Perspective** Cognition is adapted to the environment in which a person is situated.

Revision

• What groups differ in performance on general intelligence tests? What are some possible explanations that have been proposed that might cause the differences in performance?
• Describe various cultures’ implicit theories of intelligence.
• Describe the relationship between western formal education and traditional village life.
• Explain contextualized cognition.
Assignment

• The purpose of this assignment is for you to identify your culture’s implicit theory of intelligence.

• **Method**: Interview four elders in your community with the following questions:
  
  – *What makes a person* **intelligent**?
  
  – *Name three children in the village who are skillful at village tasks. Why characteristics make them the best?*

Assignment

• **Report:**
  
  1. **Participants**
  2. **Responses to the Questions**
  3. **Discussion**: What is your culture’s implicit theory of intelligence?
  4. **Application**: How well does formal education match your culture’s implicit theory of intelligence?
  5. **Recommendations**: What changes to formal education can be made to bridge this gap between your culture’s implicit theory of intelligence and formal education?