



**Chapter 13: Intelligence**  
**General Psychology**  
**Jeffrey D. Leitzel, Ph.D.**

---

---

---

---

---

---

---

---

**Outline/overview**

- Definition of intelligence
- Historical models of intelligence
- Contemporary models of intelligence
- Measuring intelligence
- Wechsler's conceptualization of and tests of intelligence
- Demonstration of WAIS-3
- Predictors of intelligence

2

---

---

---

---

---

---

---

---

**Intelligence**

- Components of Intelligence
  - ability to understand complex ideas
  - adapt to environment
  - learn from experience
  - engage in effective reasoning
- Spearman argued for a single "g" factor
- Thurstone cited 7 factors
- Guilford's structure of intellect model

3

---

---

---

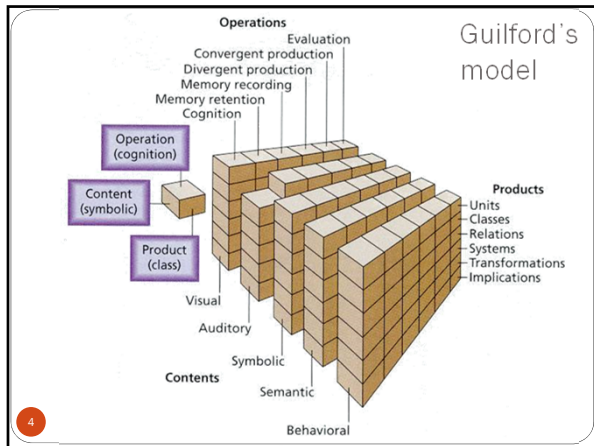
---

---

---

---

---




---

---

---

---

---

---

---

---

- ### Contemporary Theories of Intelligence
- Sternberg: Triarchic Theory
    - Analytical - think critically
    - Experiential - creativity
    - Contextual (practical)- "street smarts"
      - tacit knowledge
  - Gardner Multiple Intelligences
    - Linguistic
    - Logical-mathematical
    - Musical
    - Spatial
    - Bodily-kinesthetic
    - Interpersonal
    - Intrapersonal
    - Naturalistic
    - Existential
- 5

---

---

---

---

---

---

---

---

- ### Measuring Intelligence
- Intelligence Tests
    - Stanford-Binet (IQ)- reflect individual's performance relative to peers on verbal, quantitative, and abstract reasoning
    - Wechsler – set of three tests, detail to follow
  - Reliability- test gives consistent scores
  - Validity- test measures what it claims
  - Cultural Bias in Intelligence Tests
    - Culture-fair tests
- 6

---

---

---

---

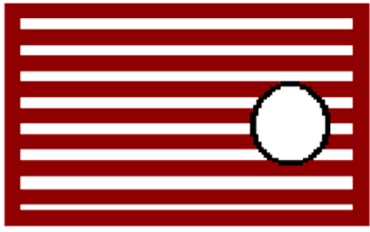
---

---

---

---

### Culture Fair Test Item



7

---

---

---

---

---

---

---

---

### Intelligence

- Wechsler's conceptualization
  - the aggregate capacity to act purposefully, think rationally and deal effectively with his or her environment
  - Wechsler-Bellevue Intelligence Scale (1939)
- Wechsler Tests – current
  - Wechsler Adult Intelligence Scale-4<sup>th</sup> edition (WAIS-4)
  - Wechsler Intelligence Scale for Children-4<sup>th</sup> edition (WISC-4)
  - Wechsler Preschool and Primary Scale of Intelligence-3<sup>rd</sup> edition (WPPSI-3)
  - Full Scale IQ (FSIQ) which represents overall cognitive ability, the four other composite scores are Verbal Comprehension Index (VCI), Perceptual Reasoning Index (PRI), Processing Speed Index (PSI) and Working Memory Index (WMI)  
(Former Editions: verbal, performance, and total (FS) IQ score)
  - mean = 100, standard deviation = 15

8

---

---

---

---

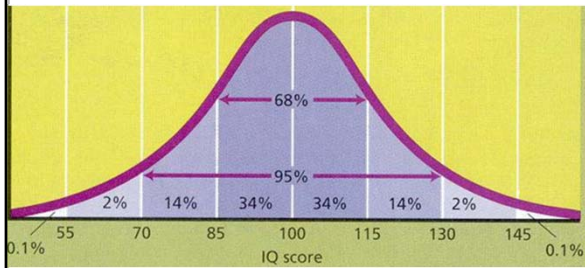
---

---

---

---

### Distribution of IQ scores



9

---

---

---

---

---

---

---

---

## WISC-III Demonstration

- In spite of the documented shortcomings of the tests, the Wechsler Scales have become the standard.
- Volunteer?
- Representative items from different scales.

10

---

---

---

---

---

---

---

---

## Predictors of Intelligence

- **Heredity**
  - identical twin research
- **Environment**
  - world-wide gains in IQ caused by urbanization, nutrition, educational opportunity
- **Neurological Predictors of Intelligence**
  - speed on simple cognitive tasks
  - neural speed
  - metabolic efficiency of brain

11

---

---

---

---

---

---

---

---

Relationship	Median Correlation
Identical (monozygotic) twins	
reared together	.86
reared apart	.72
Fraternal (dizygotic) twins	
reared together	
same sex	.62
opposite sex	.62
reared apart	(no data available)
Siblings	
reared together	.38
reared apart	.24
Parent and child	
live together	.35
separated by adoption	.31
Genetically unrelated persons	
unrelated children reared together	.25
adoptive parent and adopted child	.15

12

---

---

---

---

---

---

---

---