

# Ch. 10: Wechsler Scales

1485

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1486

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## Review: Principles of IQ

- Reification or Nominal fallacy:
  - “Intelligence” is a construct
- Numerical Fallacy:
  - IQ score measures Intelligence
- Ranking Fallacy
  - compare IQ scores, determine worth or value
  - *life-altering* decisions are made

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## IQ Test: Sample Question

- Some of the fastest ships can travel at 30 miles per hour. On such a ship, how many days will it take to make the trip between New York and Paris, a trip of 3600 miles?

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## Cognitive / Info Processing 1

- What is required to correctly answer a single item on an IQ test?
- Verbal comprehension: understand the instructions you hear or read
- Short term memory: remember the instructions
- Long term memory: retrieve answer or procedure
- Working memory: juggle information, do calculations, etc.
- Judgement / Reasoning : decide between competing answers
- Attention / Concentration: remain focused on task

1505

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## Cognitive / Info Processing 2

- Verbal: give reply with voice
- Motor: respond with hands
- Interpersonal: evaluate response of examiner: praise? criticism?
- Intrapersonal / Metacognition: judge performance, adjust strategy accordingly
- Cognitive science believes many of these to be independent processes subsumed by independent brain systems

1506

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# Performance Scale

- Declarative (“knowing that”)
  - What is the distance between NYC and Paris?
  - Dependent on Language
  - Trainable? subject to education / culture?
- Procedural (“knowing how”)
  - Riding a bicycle
  - Arrange blocks to form a pattern
  - Long Division: divide 347 by 19
- Early IQ tests focused more on Declarative tasks

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# Wechsler Scales

- WAIS-4 : Adult Intelligence Scale (2008)
  - Evolved from Wechsler-Bellevue Intelligence Scale (1937)
  - Designed for Adults
  - Point scale rather than Age scale
  - Added *Performance* items (vs. SB which used only language-based items)
  - Multiple factors, rather than “g”
- WISC-4 : Intelligence Scales for Children
- WPPSI-3 : Preschool and Primary Scale

1508

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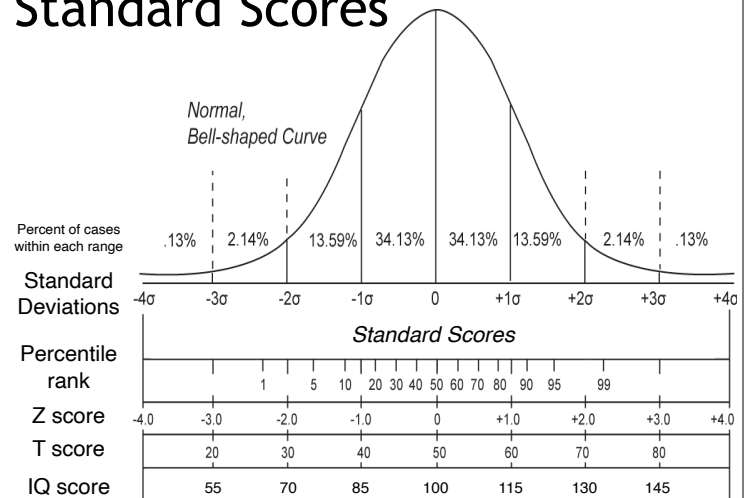
# David Wechsler

- “[...]Spearman’s theory of general intelligence (g) was too narrow. [It is] an effect rather than a cause[...] Non-intellective factors, such as personality, contribute to the development of each person’s intelligence.”
- “Intelligence is the aggregate or global capacity of the individual to act purposefully, to think rationally and to deal effectively with his environment”
- Deviation IQ (DQ) score replaced  $IQ = MA/CA$

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# Standard Scores



1510

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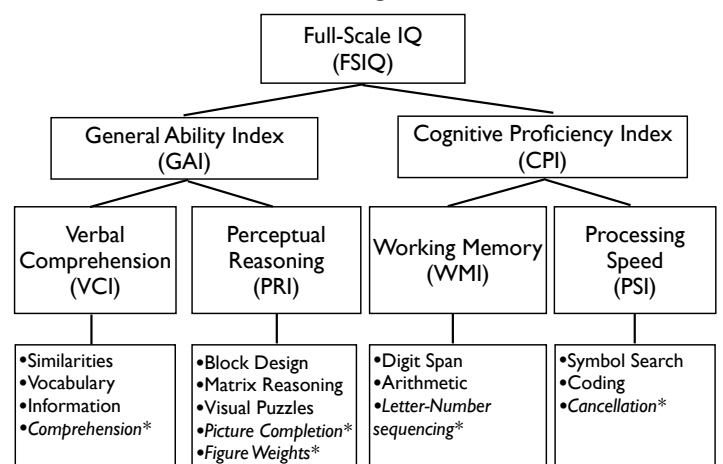
# IQ Terminology

IQ Range (M=100, SD=15)	Stanford-Binet 5	WAIS 4
145-160	Very gifted or highly advanced	Very Superior
130-144	Gifted or very advanced	
120-129	Superior	Superior
110-119	High Average	High Average
90-109	Average	Average
80-89	Low Average	Low Average
70-79	Borderline	Borderline
55-69	Mildly impaired or delayed	Very Low
40-54	Moderately impaired or delayed	

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# WAIS-4



\* is not part of core battery

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1512

## WAIS-IV General Ability Index (GAI) <sup>1514</sup>

- Verbal Comprehension Index (VCI)
  - Vocabulary
  - Similarities
  - Information
  - *\*Comprehension*
- Perceptual-Reasoning (PRI)
  - Block Design
  - Matrix Reasoning
  - Visual Puzzles
  - *\*Picture Completion*
  - *\*Figure Weights*

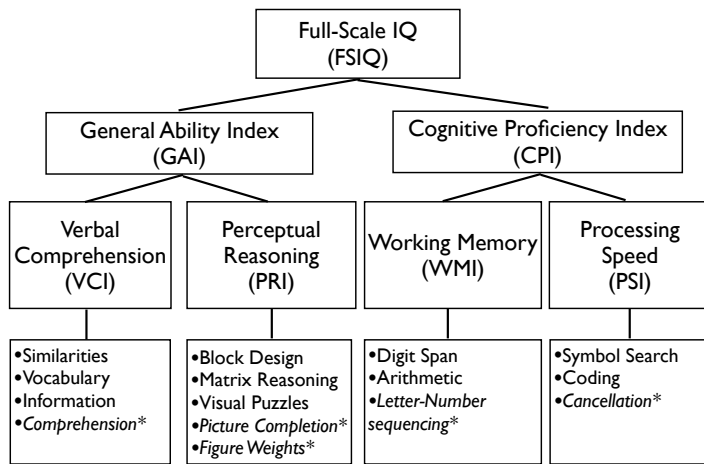
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## PRI: Perceptual Reasoning Index <sup>1518</sup>

- Perceptual-Reasoning (PRI)
  - Block Design
  - Matrix Reasoning
  - Visual Puzzles
  - *\*Picture Completion*
  - *\*Figure Weights*

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## WAIS-4 <sup>1525</sup>



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## WMI: Working Memory Index <sup>1526</sup>

- Digit Span
- Arithmetic
- Letter-Number Sequencing

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## PSI: Processing Speed Index <sup>1535</sup>

- Symbol Search
- Coding
- Cancellation

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## WAIS-4

- Which of these tests are completely “pure” measures of an ability?
  - Verbal / language issues?
  - Cultural bias?
  - Motivation?
  - Expectancy effects?
  - Strategy : speed vs. accuracy?

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## WAIS Psychometrics-Reliability

- 11 subtests, 4 index scores
- Full-Scale IQ (FSIQ)  $r = .98$ 
  - Verbal IQ (VIQ)  $r = .97$
  - Performance IQ (PIQ)  $r = .94$
- FSIQ: SEM = 2.29: 95% of the time a measured score is +/- 4.6 of actual score
- Very good normative sample (n=2450 gender, ethnicity, region, education level)
- Widely researched in many fields (portions of the WAIS are used as neuropsychological tests)

1541

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## WAIS Psychometrics-Validity

- Reliability is good, but...
- How can we measure validity?

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## WAIS Psychometrics-Validity

- Correlations of .93 with WISC
- What should the Criterion be?

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## WISC-IV and WPPSI-III

- WISC - Wechsler Intelligence Scale for Children:
- A version of the WAIS, specially adapted and revised to be more appropriate for children aged 6 thru 16
- WPPSI-III - Wechsler Preschool and Primary Scale of Intelligence:
- for children 2-6 years old

1544

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## Multiple Intelligences

- Both the SB5 and WAIS-4 test multiple factors of intelligence
- this is not the same thing as multiple intelligences
- Which of Gardner's 8 intelligences are actually measured by the SB5 or WAIS-4?

1545

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