

Ch. 10: 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 (to fill void left by SB's reliance on language/verbal skills)
- Focused on multiple abilities rather than "g"
- WISC-4 : Intelligence Scales for Children
- WPPSI-3 : Preschool and Primary Scale

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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-intellectual 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"
- Developer of major IQ assessment tests
- Deviation IQ (DQ) score replaced IQ=MA/CA

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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

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Cognitive / Info Processing 2

- Verbal skills: give reply with voice
- Motor skills: respond with hand
- View response of examiner: praise? criticism?
- Meta cognition: judge performance, adjust strategy accordingly

- Cognitive science believes many of these to be independent processes subsumed by independent brain systems

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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")
 - Arrange blocks to form a pattern
 - Long Division: divide 347 by 19
- Most early IQ tests focused more on Declarative than Procedural

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WAIS: Block Design



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WAIS: Digit Span

68910

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WAIS: Digit Span

316642

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WAIS: Digit Span

6986595

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WAIS: Digit Span

62481244

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WAIS: Digit Span

954687232

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WAIS: Comprehension

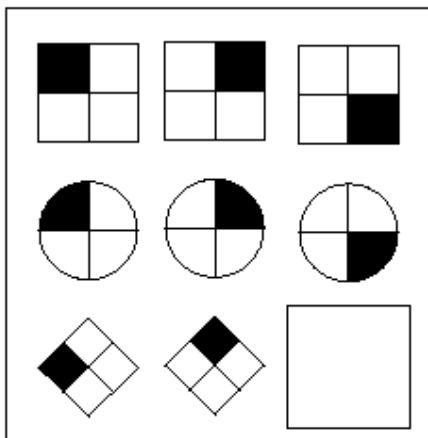
- “Why is food often sold in sealed containers?”
 - 1 point : to keep it clean
 - 1 point : to keep it fresh
 - 1 points : to make it easy to transport

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WAIS: Matrix Reasoning



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Full-Scale IQ
(FSIQ)

Verbal
IQ
(VIQ)

Performance
IQ
(PIQ)

WAIS-4

Verbal
Comprehension
Index
(VCI)

Working
Memory
Index
(WMI)

Perceptual
Organization
Index
(POI)

Processing
Speed
Index
(PSI)

- Vocabulary
- Similarities
- Information
- Comprehension

- Arithmetic
- Digit Span
- Letter-Number Sequencing

- Picture Completion
- Block Design
- Matrix Reasoning

- Digit-Symbol-Coding
- Symbol Search

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WAIS-4 Verbal Subtests

VERBAL

Vocabulary : provide word definitions

Similarities : abstract thinking

Information : range of knowledge

* Comprehension: judgement

Arithmetic: concentration, working memory

Digit span: immediate memory

Letter-Number sequencing: working memory

* not included in any sub index

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WAIS-4 Performance Subtests

PERFORMANCE

Picture Completion: identify missing details

Block Design : visuospatial reasoning

Matrix reasoning: inductive reasoning

Digit-symbol coding: WM and motor functioning

Symbol Search: information processing speed

* Picture arrangement: planning

* Object Assembly : whole/part gestalt relationships

* not included in any sub index

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WAIS-4 Verbal IQ Index

VERBAL COMPREHENSION

Vocabulary

Similarities

Information

WORKING MEMORY

Arithmetic

Digit span

Letter-number sequencing

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WAIS-4 Performance IQ Index

PERCEPTUAL ORGANIZATION

Picture completion

Block design

Matrix reasoning

PROCESSING SPEED

Digit-symbol coding

Symbol search

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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, means 95% of the time a measured scores 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)

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WAIS Psychometrics-Validity

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

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WAIS Subtest Pattern Analysis

- Can we analyze patterns on subtest scores to make inferences about a person's functioning?
- A person scores highly on a subtest not known to be affected by education (Similarities), but low on a subtest affected by motivation, anxiety and speed (Digit-symbol coding) and low on Information.
- Conclude this person has potential, but has trouble learning or performing in normal situations.
- Issue - test-retest reliabilities are low (.6 to .9) for individual subtests.
- Research supporting Pattern Analysis is weak

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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

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Multiple Intelligences

- Both the SB5 and WAIS-3 test multiple dimensions of intelligence, but this is not the same thing as multiple intelligences
- Which of Gardner's 8 intelligences are actually measured by the SB5 or WAIS-3?

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Gardner's 8 Intelligences

- logical-mathematical (*)
- verbal-linguistic (*)
- spatial (*)
- musical
- bodily-kinesthetic
- naturalist
- interpersonal
- intrapersonal