VII. Other Intelligence Tests and Class Presentations


B. Infant and Pre-school Intelligence Tests: Introduction
   a. emphasis on sensory motor

   b. increased predictive validity after age 5, for lower IQ, less for ages under 5, esp higher IQ

1. Cattell Infant Intelligence Scale:
   a. 2-30 months
   b. downward extension of Stanford-Binet

2. Bayley Scales of Infant Development II (BSID-II; Bayley 1993): Rose, Jemour 10/31
   a. test of mental and motor development infants ages 1-42 months
   b. 3 scales
      1) Mental: shape discrimination, attention, imitation, naming, memory, vocalization
      2) Motor: gross, fine, stand, walk, sit, grasp
      3) Behavior Rating Scale: behavior observations
   c. 2 scores: mean=100, sd=15: no composite score
      1) Mental Scale
      2) Motor Scale
   d. well standardized, good reliability, OK validity
   e. 30-60 min admin

3. Denver Developmental Screening Test and Denver Developmental Screening Test - Revised
   (DDST-R; Frankenburg et al., 1975): Alison, Megan 10/29
   a. 3 months - 4 years
   b. screening test - nonprofessionals can use
   c. 4 areas
      1) gross motor
      2) language
      3) preschool social
      4) fine motor/adaptive
d. considered delayed: can't do what 90% normative group same age or younger can do

e. standardization: Denver, not representative

f. fair reliability, validity

4. Gesell Developmental Schedule
   a. 4 weeks - 6 years

   b. areas: motor, language, social

   c. especially good for neurological disorders

C. Pre-school through Elementary School Intelligence Tests

1. McCarthy Scales of Children's Abilities (McCarthy, 1972): Amy, Candon 10/29
   a. 2 1/2 years - 8 years

   b. 18 subtests

   c. 6 scales: verbal, nonverbal, reasoning, number ability, short term memory, coordination;
      mean=50, sd=10

   d. General Cognitive Index (GCI)
      1) not same as IQ
      2) mean = 100, sd = 16
      3) moderate r w/ WPPSI, WISC-R
      4) CGI < WISC-R IQ: 10 pts gifted, 20 pts MR, 8-15 pts LD

   e. Cautions:
      1) factors: verbal, motor, general memory, perceptual-perf
      2) factor analysis not support scale organization
      3) limited ceiling for older bright, gifted
      4) limited floor for younger low IQ

   f. Advantages
      1) profile analysis useful
      2) good for assessment LD young children

   10/31
   a. 2 1/2 years - 12 1/2 years

   b. intelligence and achievement tests
c. 4 scales: each w/ mean=100, sd=15
   1) sequential processing: 3 subtests; e.g., number recall
   2) simultaneous processing: 8 subtests; e.g., matrices
   3) achievement: 4 subtests of knowledge, educational achievement (processing too)
   4) Nonverbal: subtests from sequential and simultaneous scales

d. 15 subtests: use 13 or less depending on age; each with mean=10, sd=3

e. admin: 45-75 minutes

f. Mental Processing Composite (MPC): mean 100, sd 15

g. Advantages
   1) good standardization but old norms;
   2) excellent reliability
   3) moderate validity
   4) intelligence plus achievement tests

h. Criticisms
   1) different subtests administered depending age
   2) unclear why simultaneous scale weighted heavier in MPC
   3) low ceiling for bright older
   4) high floor for younger low IQ
   5) standardization group: not representative– especially Hispanics, African Americans
   6) MPC: unclear what it means, not quite an IQ

D. Intelligence Tests that range from childhood to adulthood

   a. brief test of intelligence for ages 6-90

   b. 2 subtests, composite: each with M=100, sd=15
      1) Vocab: includes picture naming, naming spelled word
      2) Matrices: select choice related to the figure

   c. Critique
      1) good standardization
      2) good reliability
      3) validity okay; not as strong
      4) good screening test; not a substitute for full intelligence test

   a. comprehensive test for ages 2-90
b. 10 subtests in standard battery, another 10 subtests in extended battery; not all administered

c. based on Cattell’s, Horn’s and Carroll’s theory of the structure of intelligence

d. subtests organized into 7 clusters based on the model:
   1) Comprehension-Knowledge
   2) Long-Term Retrieval
   3) Visual-Spatial Thinking
   4) Auditory Processing
   5) Fluid Reasoning
   6) Processing Speed
   7) Short-Term Memory

e. also a brief version: Brief Intellectual Ability measure – 3 subtests (verbal comprehension, visual-auditory learning, spatial relations)

f. Scores: mean=100, sd=15
   1) General Intellectual Ability (GIA): subtests differentially weighted at different ages; computer scored only
   2) Relative Proficiency Index (RPI): criterion measure related to number of items would pass at given age

g. Critique:
   1) good norms: over 8800 individuals, 2000 census, representative
   2) strong reliability .80-.90s
   3) factor analysis, criterion validity studies support

a. Ages: 2-18 (norms up to 23 years-11 months)
b. History
   1) From original Binet-Simon Scale (1905, 1908, 1911);
   2) American adaptation: 1916 Stanford-Binet
   3) Revisions: 1937 revision: 2 parallel forms: L, M
   4) 1960 Stanford-Binet combined: form L-M, replaced ratio IQ with deviation IQ
   5) 1972 revision: new norms, included nonwhite in norms
   6) 1986 Stanford-Binet 4th edition: addressed many of criticisms of earlier tests:
      a) changed from age to point scale (grouped by type of item)
      b) 15 subtests (each mean=50, SD=8)
      c) much easier administer, interpret – can look at strengths/weaknesses in subtests
      d) 15 subtests grouped into 4 broad areas:
         1) Verbal Reasoning
         2) Abstract/Visual Reasoning
         3) Quantitative Reasoning
         4) Short Term Memory
      5) test yields 4 area scores and total (composite) score, each mean=100, sd=16
c. Administration and Scoring:
   1. find basal and ceiling but easier:
      a) Vocab (routing test) first, start according to age, find basal, ceiling; raw score
      b) Vocab score plus age: look up on routing table where to begin the remaining subtests
      c) Not all subtests administered all ages: only 6 across all ages

   2. flexible because can administer only a subset of subtests available at that age and prorate to get 4 area scores and total; can use less than 4 area scores to get total by prorating

   3. Better scoring guidelines than earlier versions

   4. Power test - not based on speed – only one subtest is timed (Pattern Analysis), others flexible time limits

   5. Subtests:
      a) **Vocabulary**: picture and oral

      b) **Bead Memory**: starts with matching (identification of a bead), then remembering bead patterns: show bead pattern 5 sec, remove, they build pattern

      c) **Quantitative**: counting dots, then visual math problems, then word problems (orally and on a card), use paper & pencil; written or oral response allowed; no time limits

      d) **Memory for Sentences**: like WPPSI

      e) **Pattern Analysis**: only timed test (later items); starts with form board then block designs (timed)

      f) **Comprehension**: starts with name body parts of doll, then WISC-like items

      g) **Absurdities**: absurd pictures

      h) **Memory for Digits**: like Digit Span

      i) **Copying**: starts with 3-d block designs with green blocks, then like Bender

      j) **Memory for Objects**: show cards 1 per sec, they identify the order of objects shown from a group of objects in increasing numbers

      k) **Matrices**: like Raven’s Progressive Matrices (or Matrices on the WAIS-III or K-BIT)

      l) **Number Series**: finish a sequence of numbers; paper & pencil, allow up to 2 mins (flexible)

      m) **Paper Folding and Cutting**: sample actual folding, cutting; then rest pictures - how would they look when opened
n) **Verbal Relations**: list 3 things, then 1 - Q explain how the first 3 are alike and the 4th one is different

o) **Equation Building**: sets of numbers and arithmetic signs; Q rearrange into equations (older ages only); allow 2 min (flexible), paper & pencil

d. Advantages and Limitations
   1. flexible administration (e.g., subset of tests, prorating, lack of time limits) good for physically challenged

   2. Reliability good for composite scores and factors – not for all subtests

   3. Weakness: factor analysis not agree with 4 area groupings:
      a) 2 factors before age 7 (Verbal Comp and Nonverbal Reasoning/Visualization)
      b) 3 factors (Verbal Comp, Nonverbal Reasoning/Visualization + Memory) - age 7 and up
      c) The 4 area SAS scores calculated on the test are theoretically derived, not supported by factor analysis
      d) Sattler recommends calculating the factor scores from his tables (not on the test form) and using those scores instead