### History of Intelligence Assessment

Assessment of Intelligence PSY 5200 Rick Grieve, Ph.D.

### **Readings for This Section**

- Sattler, Chapters 7 & 8
- Mayer & Salovey (1995)
- Schaie (1994)
- Thorndike (1990)



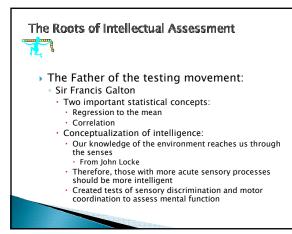
### Why not admit it?

"Our society seems to not only allow but applaud certain areas of talent, such as in sports, music, or the arts. Yet intellectual talent spurs considerable ambivalence, perhaps even threatening the self-esteem of others. Why do we develop some talents but not others?" (Benbow, 1992)

### IQ Quotes to Ponder

- "If the 'I.Q. test' were a new drug, it would probably never reach the marketplace." (Schwitzgebel & Schwitzgebel, 1980)
- "IQ is like money. Publicly you proclaim that those who have a lot are no better than those who have a little. Privately you wish you had a lot." (Bereiter, 1976)





# The Roots of Intellectual Assessment Mental inheritance Galton sought to demonstrate that a person's natural abilities are derived by inheritance, just as physical features are Did I tell you his cousin was Charles Darwin? Hereditary Genius: An Inquiry Into Its Laws and Consequences (1869) Human abilities are genetically determined and the human species can be improved through controlled breeding practices Eugenics (more on this later) To prove the inheritance of intelligence, Galton examined eminent

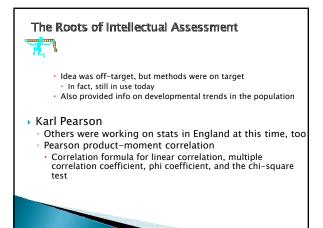
- people
   Showed that the probability of fame was correlated with having a
- famous relative
- The closer the relative, the more likely the fame

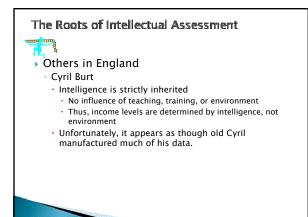
### The Roots of Intellectual Assessment

Mental Tests

 Even though we usually attribute this term to Cattell (see later), it was Galton who influenced Cattell in that direction

- Anthropometric Lab
  - Measured visual and auditory acuity, a judgment of visual distance, breathing power, reaction times, color discrimination, the strength of a blow, and olfactory discrimination
  - International Health Exhibition (1884)
  - · Charged people to measure them
  - In 6 years, measured over 9000 people
  - · Wanted to define the range of abilities in the British Empire

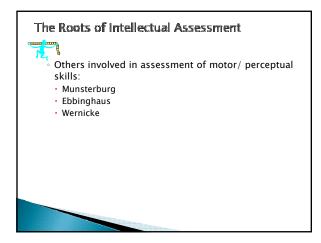


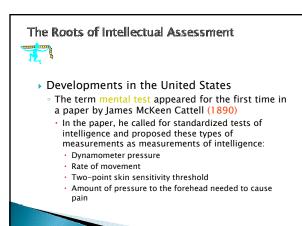


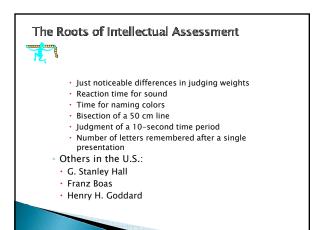
### The Roots of Intellectual Assessment

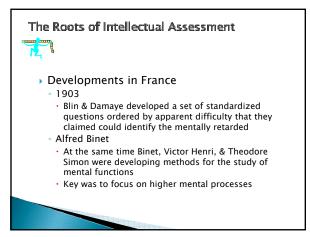
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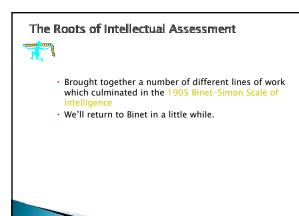
- Developments in Germany
  - Emil Kraepelin (1855-1926)
  - Psychopathology
  - Developed tests to measure mental functioning
     Included tests of perception, memory, motor functions, and attention
  - Need to examine individual enough times to reduce chance variation





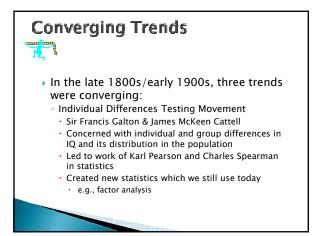


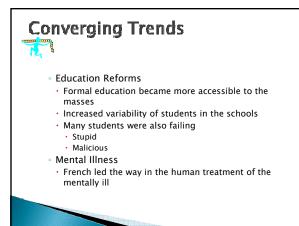


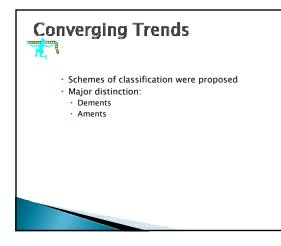


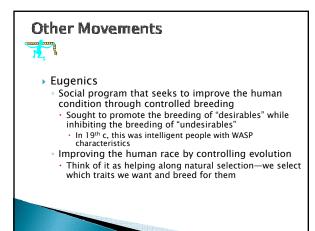
### Comments on 19<sup>th</sup> Century Development

- Emphasis on sensorimotor tasks
- Intelligence was narrowly defined
- Influenced by Renaissance philosophers
- Sensorimotor skills too narrow a definition and poorly correlated with what we now call intelligence





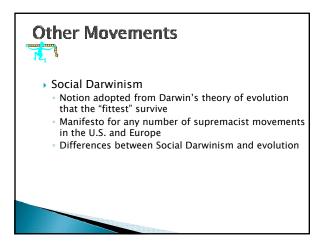






# Other Movements

- Ethical Issues
- · How do you choose a good psychological trait?
- What constitutes a good psychological trait?
- · How would selective breeding be implemented?
- What happens to those with low amounts of the good psychological traits?
- Nazi Germany
- Galton was more interested in increasing the rate of high intelligence rather than lowering the rate of low intelligence



### Binet Scales of Intelligence

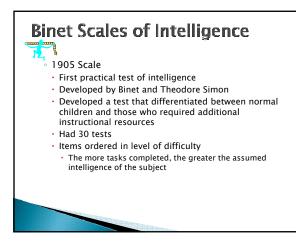


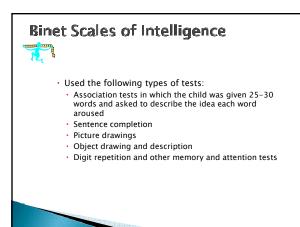
- Alfred Binet (1857-1911), the early years:
   Student of Wundt's
  - 1899: founding of *Societe Libre pour l'Etude Psychologique de l'Enfant*
  - School people who were interested in the scientific study of education
  - Binet asked to be a member and then elected President

## Binet Scales of Intelligence

• 1903:

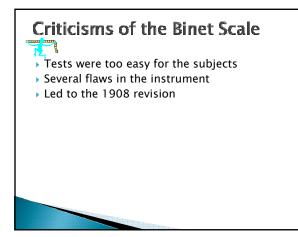
- La Societe proposed that the French gov't needed to create tests to differentiate those who could not benefit from normal education from those who would not (stupid vs. malicious)
  - "...[some] children, if considered educably retarded, should be grouped in special classes annexed to the regular school, or in a special establishment, and...that a special class for the educable be opened for the present in one of the Paris schools, as a demonstration."
- · Results of the recommendation:
  - Commission formed to study the matter; Binet was one of the Commissioners

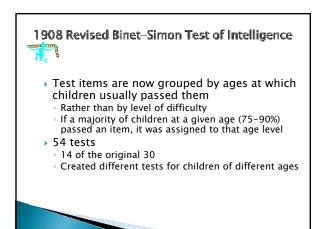


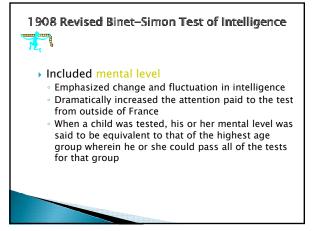


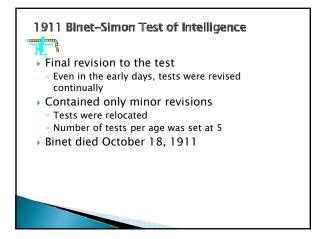
# Binet Scales of Intelligence

- Some concern with age-based cognitive development
- Objectively diagnosed degrees of mental retardation
- Binet would write of the scale:
  - "We believe that we have succeeded in completely disregarding the acquired information of the subject...It is simply his natural level of intelligence that is taken into account."









### Binet's Theory of Intelligence

- Awfully vague about what he considered intelligence
  - Inconsistencies in his conceptualization
  - Generally came down on the side of a single entity that he called "the intelligence"
  - Judgment is a critical part of intelligence
  - However, he also used the term intelligence as synonymous with personality or attention

# Binet's Theory of Intelligence

### Probably was a G-Man

"It seems to us that in intelligence there is a fundamental faculty, the alteration or lack of which is of the utmost importance for practical life. This faculty is judgment, otherwise called good sense, practical sense, initiative, the faculty of adapting one's self to circumstances. To judge well, to comprehend well, to reason well, these are the essential activities of intelligence...indeed the rest of the intellectual faculties seem of little importance in comparison with judgment."

Binet and Simon, 1905, pp. 42-43

### Binet's Assumptions About Intelligence

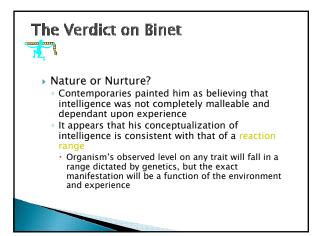
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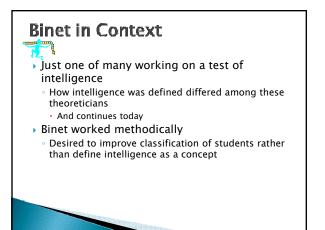
- Whatever intelligence is, it is something that shows a normal and fairly consistent course of average intelligence
- Intelligence is needed for success in school
- These two points formed the basis for the Binet-Simon scales

# Binet's Views on Heritability Scientific atmosphere dominated by Dawinism and the theory of evolution Binet, however, felt that intelligence was nodifiable. He proposed mental orthopedics Reaction to the idea that intelligence is fixed and netted: "...we must protest and react against this brutal pessimism..."

# Binet's Views on Heritability

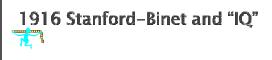
- Some of his writings indicated that he felt intelligence was inherited to some degree:
  - Anyone's intelligence is susceptible to development; with practice and training, and especially with appropriate methods [of teaching] we can augment a child's attention, his memory, his judgment—helping him literally to become more intelligent than he was before...right up to the moment when he arrives at his limit. Thereafter, progress is ruled by a remarkable law of fixity; the ordinarily great progress at the beginning diminishes little by little...and despite great efforts, the moment arrives when it becomes practically equal to zero...incontestably there is a limit. It varies according to the persons and functions under consideration.





### **Binet in Context**

- As early as 1890, Cattell had pointed out the need for a normative data base
- However, early work in intelligence focused on reaction times and sensory processing
- Binet's contribution was to move beyond sensory processes and into higher cognitive functions



- Henry Goddard
  - Director at Vineland Hospital
  - $^{\circ}$  Encountered and tried out the 1908 Binet scale
  - Liked it a lot
  - Developed translation of the scale
  - Worked to popularize the scale
  - Wanted to use adaptations of the Binet scale to differentiate classes of mental retardation and facilitate treatment

