

The “Intelligence” Controversy

- **Question 1: What is intelligence? How do you define it?**
- **Modern definition:** the ability to learn from experience, solve problems, and use knowledge to acclimate to new situations

- *This definition is socially constructed, thus it is culturally specific*
- *Based on the definition, are Albert Einstein, Ludwig van Beethoven, and McKayla Maroney intelligent?*



- **Question 2: Does each of us have a natural intelligence and can/should we classify it as a numeric quality?**

- *Is there a danger in labeling a person's IQ?*

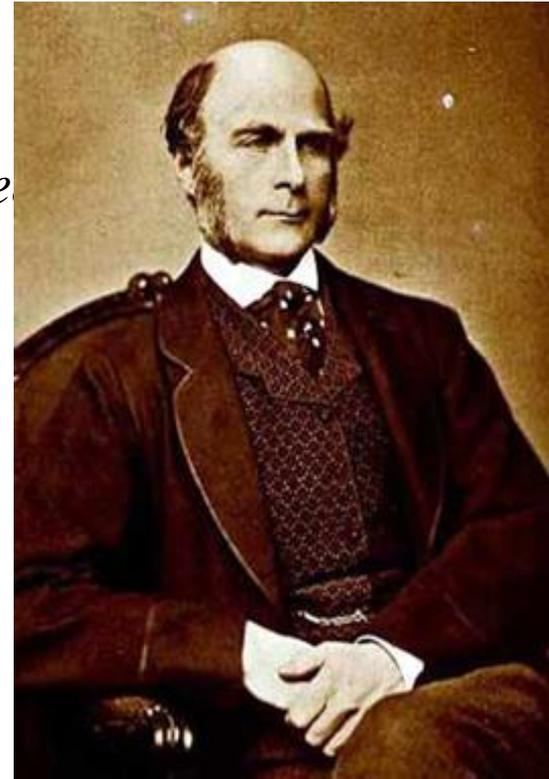
- **Question 3: Is intelligence one overall ability or multiple individual abilities?**

- *Can you be smart in one area but not in another? Do “multiple intelligences” exist?*

Pioneers of Intelligence Testing

Sir Francis Galton (British; 1890s)

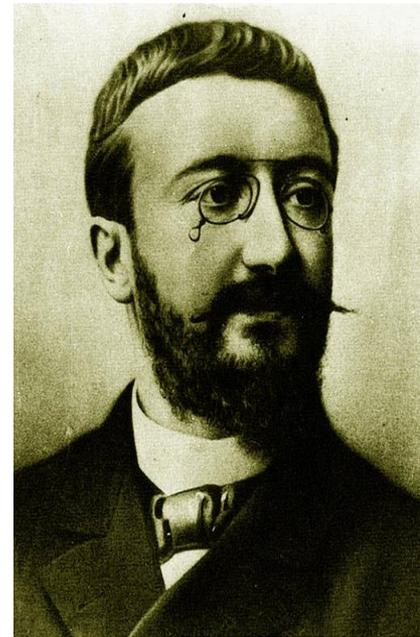
- Founded the modern day eugenics movement.
- Wanted to apply his cousin Charles Darwin's idea of natural selection to humanity and encourage only intelligent and fit people to mate with one another to improve the genetic quality of the human population over time.
 - *This meant people with disabilities, weight issues, diseases, low intelligence, etc. should not be allowed to have children because they would pass on their “flawed” genes.*
 - *However, there was no way of objectively measuring intelligence the 19th century; Galton believed that head size correlated with how smart you are.*



Pioneers of Intelligence Testing

Alfred Binet (French; 1900s)

- In the late 1800s, France passed a law requiring all children to attend school.
 - *Previously, only wealthy children were educated. With a giant new influx of kids, the country needed to figure out how/where to place them, especially students with special needs (such as cognitive/developmental issues).*
- Binet was commissioned by the French government to study the problem and determine a method for placing students.
- Devised a concept called **mental age** which describes a student's equivalent corresponding intellectual age.
 - *For example, a student might be 10-years -old but might have the equivalent mental age of a 15-year-old.*
 - *Hoped this would help children; feared it would label them.*



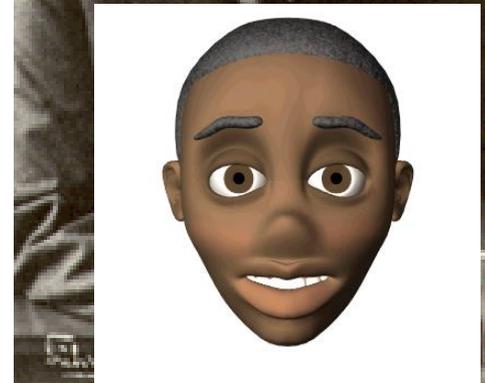
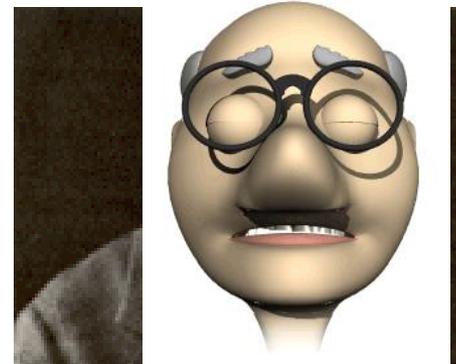
Pioneers of Intelligence Testing

William Stern (German; 1900s)

- Derived the term “intelligence quotient”, abbreviated as **IQ**
- Adapted Binet’s mental age term into his IQ formula

$$\text{IQ} = \frac{\text{mental age} \times 100}{\text{chronological age}}$$

- Try the following IQ formulas...
 - *Mental age of 10, chronological age of 8*
 - *Mental age of 10, chronological age of 20*
- Formula falls apart as an individual ages.
If a 50-year-old man has the same mental age as a 25-year-old, his IQ would only be 50.
This doesn’t make sense!



- This formula is no longer used; IQ is now standardized via testing and fits the normal distribution curve. Average IQ = 100.

Pioneers of Intelligence Testing

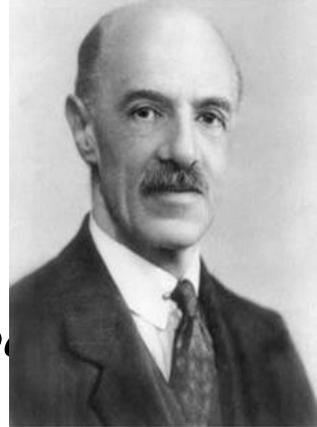
Lewis Terman (American; 1910s)

- Used the contributions of the earlier intelligence pioneers to create the first widespread intelligence test known as the **“Stanford-Binet” intelligence test** (he was a professor at Stanford).
 - *He changed some of the terminology and extended the testing range from children to adults*
- Terman agreed with Galton’s eugenics movement and wanted to use the test to “curtail the reproduction of feeble-mindedness and eliminate crime and industrial inefficiency.”
- The U.S. government began using Terman’s tests on immigrants and WWI army recruits.
- “Terman’s Termites” was the name given to children identified as gifted via his test.



Types of Intelligence

- **Is intelligence one overall ability or multiple individual abilities?**
- **Charles Spearman** believed people have just one general intelligence (known simply as **g**), meaning people can either be labeled as “smart” or “not smart” and there’s no specific areas of strength or weakness.
 - *This is not a widely held belief anymore today but for a period of time it was generally accepted.*
- One way that the g theory is proven false is through **factor analysis**: a statistical process that recognizes topic-related questions.
 - *For example, on your AP Psychology exam there are different sections such as development, personality, etc.*
 - *If a student does well on one exam section but poorly on another exam section, obviously she doesn’t just have one general intelligence.*



Types of Intelligence

- **Is intelligence one overall ability or multiple individual abilities?**
- **Howard Gardner** disagreed with Spearman's g.
- He cited **savant syndrome** (individuals with mental disabilities but who excel in one specific area) as evidence of contradiction.
 - *The movie "Rain Man" is about a man with autism who lacks social appropriateness but is exceptional at math.*
- Gardner instead cited his theory of **multiple intelligences**, which is widely used in education today. He claimed there are nine different areas of measurable intelligence.
 - *Visual/Spatial, Verbal/Linguistic, Logical/Mathematical, Bodily/Kinesthetic, Musical/Rhythmic, Interpersonal, Intrapersonal, Naturalist, Existential*



Types of Intelligence

- **Is intelligence one overall ability or multiple individual abilities?**

Gardner's Multiple Intelligences

Existential measures your ability to ponder questions about life, philosophy, and human existence, to contemplate spirituality and religion, etc.

Naturalist measures your sensitivity to features of the natural world, care for and interaction with animals, nurturing and growing of plants, etc.

Interpersonal measures your ability to understand and interact with other people, to evaluate the needs and feelings of others, to socialize, etc.

Intrapersonal measures your ability to understand your own feelings, to analyze your own decisions, to be self-aware.

Visual/Spatial measures your ability to mentally rotate objects, perceive distance and dimension, paint and draw, etc.

- Visual/Spatial
- Verbal/Linguistic
- Logical/Mathematical
- Bodily/Kinesthetic
- Musical/Rhythmic
- Interpersonal
- Intrapersonal
- Naturalist
- Existential
 - *Not officially endorsed by Gardner*

Bodily/Kinesthetic measures your awareness of your own body, your physical functions, coordination, language, etc.

Musical/Rhythmic measures your sensitivity to rhythm and sound, capacity to think in musical terms, and analysis of musical patterns

Types of Intelligence

- **Is intelligence one overall ability or multiple individual abilities?**
- **Robert Sternberg** also disagreed with Spearman's g but thought Gardner's multiple intelligences were excessive, so he simplified them into his **Triarchic Theory of Intelligence**.



- **Analytical** Intelligence: academic problem solving
 - *Most school assignments are examples of analytical intelligence*



- **Practical** Intelligence: “common sense” / “street smarts” intelligence related to everyday tasks
 - *Most daily life relates to practical intelligence.*



- **Creative** Intelligence: ability to generate novel ideas
 - *Creativity correlates to an IQ of about 120 and then levels off*
 - **Convergent** Thinking: *one solution to a problem*
 - **Divergent** Thinking: *multiple solutions to a problem*



Types of Intelligence

- **Is intelligence one overall ability or multiple individual abilities?**
- **Where do your beliefs lie on the intelligence debate?**
- The line below indicates a continuum of the theorists we have examined with Spearman's g factor at one end and Gardner's multiple intelligences on the other end. Make a mark on the line indicating where you fall and explain your reasoning.

