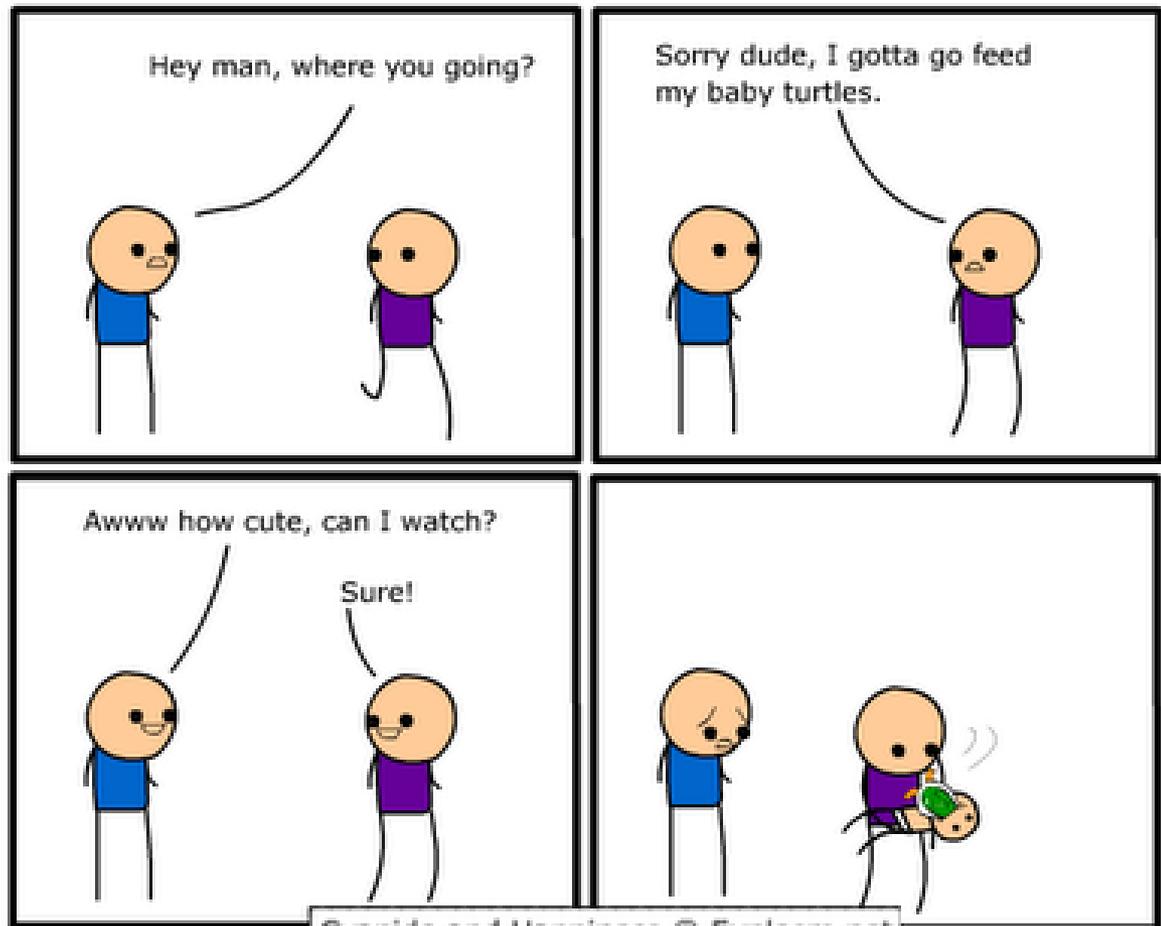


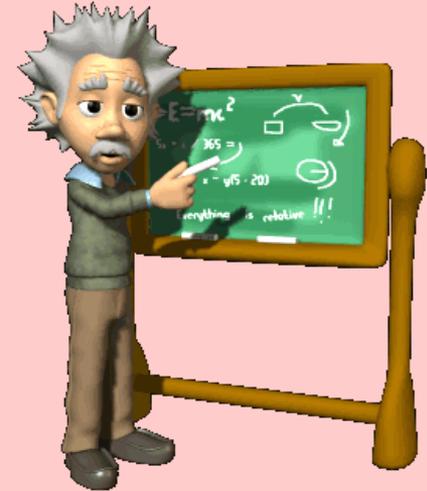
# History of Intelligence



What makes us  
intelligent Or  
Not so intelligent

# What is Intelligence?

- The ability to learn from experience, solve problems, and use knowledge to adapt to new situations.
- Is socially constructed thus...  
Can be culturally specific.



According to this definition, are both Einstein and Ruth intelligent?

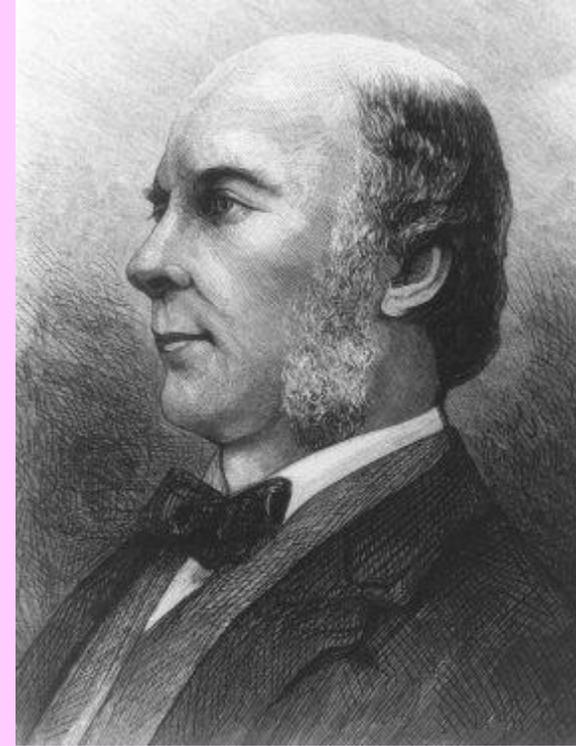
# Debates over Intelligence

- Does each of us have an inborn intelligence and can/should we classify it as a quantifiable number?
- Is intelligence one general ability or several specific abilities?



# Early Pioneers of Intelligence Testing

- Sir Francis Galton (British/1890s)
- Fascinated by measuring mental abilities with physical characteristics such as head size



- Founded the "eugenics" movement - encouraging only the smartest and fittest to reproduce (to him: well-born white men)

# Early Pioneers of Intelligence Testing



- France had just passed a law requiring all children to attend school
- **Alfred Binet (French/1900s)** was commissioned by the French government to determine children's abilities in school
- Set out to figure out a concept called a **mental age** (chronological age that corresponds to a given level of performance).
- Hoped they could use test to help children, not label them.

# Early Pioneers of Intelligence Testing



- William Stern (German/1900s)
- Derived the term "Intelligent Quotient" (IQ)
- $$\text{IQ} = \frac{\text{mental age}}{\text{chronological age}} \times 100$$
- We don't use the IQ formula anymore, now it's standardized (Tests must be administered and scored the same way every time and establishing a norm, or average score, made by a large group of people).

# Early Pioneers of Intelligence Testing



- Lewis Terman  
(American/1910s)
- Adapted and created the "Stanford-Binet" intelligence test
- Changed terminology, extended the range from teenagers to adults

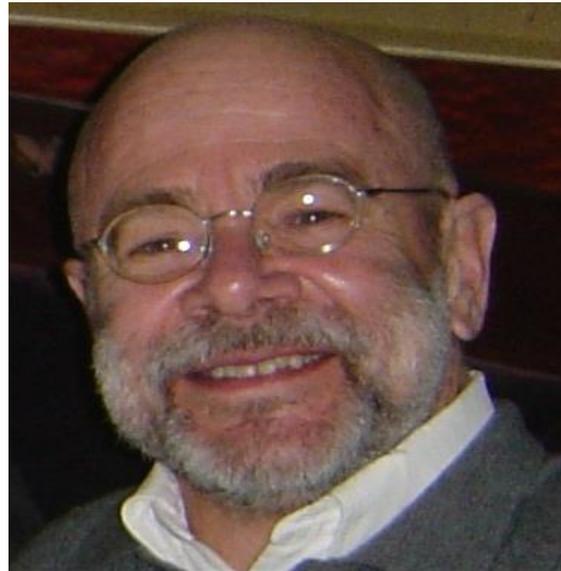
# Terman and his IQ Test

- A 8 year old has a mental age of 10, what is her IQ?
- A 12 year old has the mental age of 9, what is his IQ?
- A boy has the mental age of 10 and an IQ of 200, how old is he?
- Used Binet's research to construct the modern day IQ test called the Stanford-Binet Test.
- $$\text{IQ} = \frac{\text{Mental age}}{\text{Chronological age}} \times 100.$$

# Problems with the IQ Formula

- It does not really work well on adults, why?

If a 60 year old man



does as well as an average 30 year old  
then his IQ would be 50!!!!!!



That makes no sense!!!!!! So now we use  
standardization

# IQ Tests Today

- Stanford-Binet Intelligence Scale:
  - Test currently used in the U.S. is a revision created at Stanford University.
  - Test by age level
  - Tasks include: defining words, drawing pictures, explaining events in daily life.
- The Weschler Tests:
  - WAIS-R for adults
  - WISC-III for children 6-16
  - WPPSI-R for preschool children, 4-6  $\frac{1}{2}$
  - Tasks include vocabulary, information, arithmetic, picture arrangement
  - Place more value on performance than the Stanford-Binet does, so less verbally oriented people are not as likely to be put at a disadvantage

# Is intelligence one thing or several different abilities?



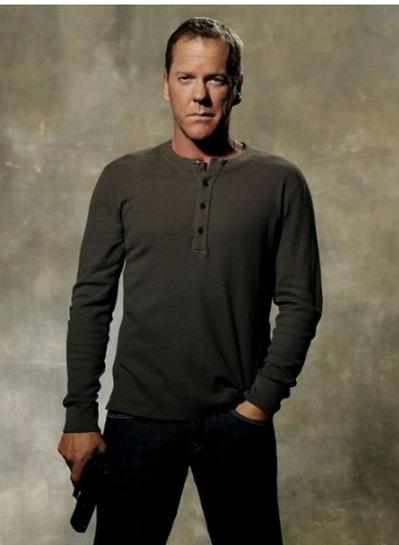
- To find out scientists use **FACTOR ANALYSIS:**

A statistical procedure that identifies clusters of related items



Jack Bauer is good at torturing, bomb defusing, shooting, figuring out evil plots and saving the country. Is there anything he cannot do?

**Charles Spearman** used FA to discover his *g* or **(general intelligence)**.



# Multiple Intelligences



- Howard Gardner disagreed with Spearman's  $g$  and instead came up with the concept of multiple intelligences.
- He came up with the idea by studying savants (a condition where a person has a neurodevelopmental disorder but is exceptional in one area).

# Gardner's Multiple Intelligences

- Visual/Spatial
- Verbal/Linguistic
- Logical/Mathematical
- Bodily/Kinesthetic
- Musical/Rhythmic
- Interpersonal
- Intrapersonal
- Natural



Multiple Intelligence Type

Incorporated into subject matter

Way of demonstrating understanding

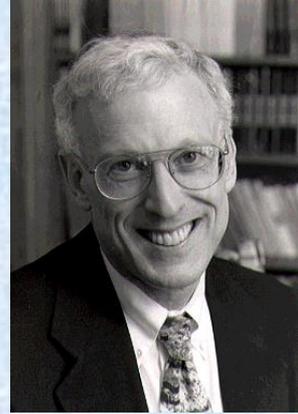
<b>Verbal-Linguistic</b>	Books, stories, poetry, speeches, author visits	Writing stories, scripts, poems, storytelling
<b>Mathematical-Logical</b>	Exercises, drills, problem solving	Counting, calculating, theorizing, demonstrating, programming computers
<b>Musical</b>	Tapes, CD's, concert going	Performing, singing, playing, composing
<b>Visual-Spatial</b>	Posters, art work, slides, charts, graphs, video tapes, laser disks, CD-ROMs and DVDs, museum visits	Drawing, painting, illustrating, graphic design, collage making, poster making, photography
<b>Bodily-Kinesthetic</b>	Movies, animations, exercises, physicalizing concepts, rhythm exercises	Dance recital, athletic performance or competition
<b>Interpersonal</b>	Teams, group work, specialist roles	Plays, debates, panels, group work
<b>Intrapersonal</b>	Reflection time, meditation exercises	Journals, memoirs, diaries, changing behaviors, habits, personal growth
<b>Naturalist</b>	Terrariums, aquariums, class pets, farm, botanical garden and zoo visits, nature walks, museum visits	Collecting, classifying, caring for animals at nature centers
<b>Existential</b>	Working on causes, charity work, astrology charts	Community service

# Journal Entry:

## Monday May 1, 2017

- **Objective:**
  - Explain the various views of intelligence
- **Warm-Up/Journal Entry Question:**
- Get back with your group, you will have 10 minutes to finish your MI presentations and you will present it to the class. Presentations must not be no longer than 3 minutes.
- **Agenda:**
  - Multiple Intelligence Inventory
  - Continue PPT/Notes: History/Development of Intelligence & Test Construction
  - Theories of Intelligence Worksheet
  - Review
- **Home work:** Goal Sheet & Review Sheet Due- May 3, Vocab Quiz- May 2

# Sternberg's Triarchic Theory of Intelligence



## Gardner Simplified

- **Analytical** (academic problem solving).
- **Creative** (generating novel ideas)
- **Practical** (required for everyday tasks where multiple solutions exist).



# Creativity

- The ability to produce novel and valuable ideas; correlates with IQ up to about 120 then levels off
- **Convergent thinking**: demanding a single answer
- **Divergent thinking**: imagining multiple answers to a problem



An old moneylender offered to cancel a merchant's debt and keep him from going to prison if the merchant would give up his daughter. Horrified yet desperate, the merchant and his daughter agreed to let Providence decide. The moneylender said that he would put a black pebble and white pebble in a bag and the girl would draw one. The white pebble would cancel the debt and leave her free.

The black one would make her the moneylender's, although the debt would be cancelled. If she refused to pick, her father would go to prison. From the pebble-strewn path they were standing on, the moneylender picked up two pebbles and quickly put them in the bag, but the girl saw that he had picked up two black ones.

What would you have done if you were the girl?

Well, here is what she did ....

The girl put her hand into the moneybag and drew out a pebble. Without Looking at it, she fumbled and let it fall onto the pebble-strewn path Where it immediately became lost among all the other pebbles.

"Oh, how clumsy of me," she said. "But never mind, if you look into the Bag for the one that is left, you will be able to tell which pebble I Picked."

Since the remaining pebble is black, it must be assumed that she had Picked the white one. And since the money-lender dared not admit his Dishonesty, the girl changed what seemed an impossible situation into An extremely advantageous one.

- How do you fall on the debate concerning the single intelligence factor (g) versus multiple intelligences? The line below indicates a continuum of the theorists we have examined with Spearman's g factor at one end and Gardiner's multiple intelligences on the other end. Make a mark on the line indicating where you fall and explain your reasoning.



# Emotional Intelligence

- Read the EQ Factor by Nancy Gibbs:
  - **What long-term effects are shown in those who were able to put off immediate rewards for later benefits?**
  - **What does the phrase “emotional intelligence” refer to?**

# Review

- Theories of Intelligence Worksheet
- Psychoanalytic Theory
  - Id, Superego, Ego
  - Defense Mechanisms: Displacement, Regression, Rationalization
  - Projective Tests: TAT and Rorschach Inkblot
- Humanistic Theory
  - Abraham Maslow and self-actualization
  - Abraham Maslow' Hierarchy of Needs
- Social-Cognitive Theory
  - Internal Locus of Control
  - External Locus of Control
- Trait Theory
  - Cardinal Trait
- Type A/Type B Personality
- Birth Order and Personality

- Is there a single general intelligence factor (g) or is intelligence several different, unrelated abilities?
- **For each study below, indicate if it supports A) the idea of g – a general intelligence factor or B) multiple intelligences.**
- Subjects were given 56 different tasks and eight clusters of primary mental abilities were determined using factor analysis. Researchers found that those who excelled in one cluster were more likely to score well on the other clusters as well. \_\_\_\_\_
- People have lost linguistic abilities due to damage to the left hemisphere of their brains, but retain their capacity to be musicians, visual artists, and engineers. \_\_\_\_\_

- A lobotomy may cause little impairment of logical or linguistic intelligence, but it is usually disastrous for self-understanding and interpersonal thought. \_\_\_\_\_
- Single intelligence test scores (measuring g) correlate well with success in various mentally demanding careers. \_\_\_\_\_
- There are people who score low on intelligence tests, but have a specific area in which they excel. This is called the savant syndrome. \_\_\_\_\_