Module 6: Learning and Memory
Topic 5 Content: Theories of Intelligence Notes

Introduction

Click on each tab at the top of the screen to learn about various theories of intelligence.

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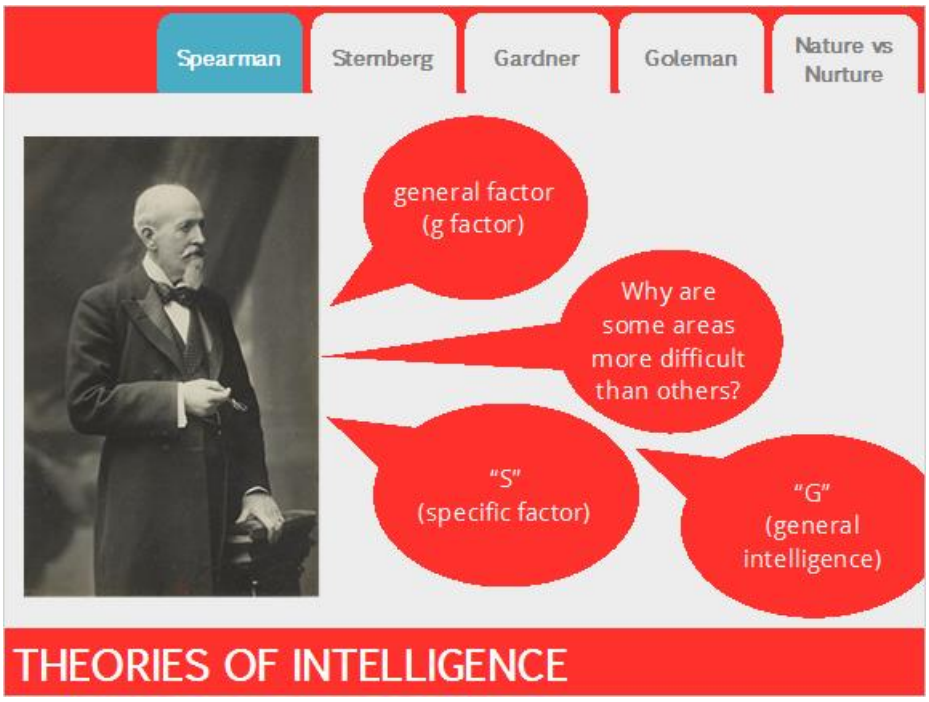
Spearman



Charles Spearman (1863-1945) was a British psychologist known best for his theory of the *general factor*, also referred to as the *g factor*. Specifically, Spearman wanted to better understand why some people excelled in certain areas and others struggled with simple concepts. For example, some students might get great grades in math but have difficulty in English or a foreign language. On the other hand, some students seem to excel in many areas of study and do well in all their classes. Spearman believed that people who scored outstanding in one area of an IQ test, like logic or verbal comprehension, have "S" or specific factor intelligence. In contrast, those who score high in all areas of an IQ test have "G" or general intelligence. Spearman's research and statistical techniques form the basis for many modern-day theories about intelligence.

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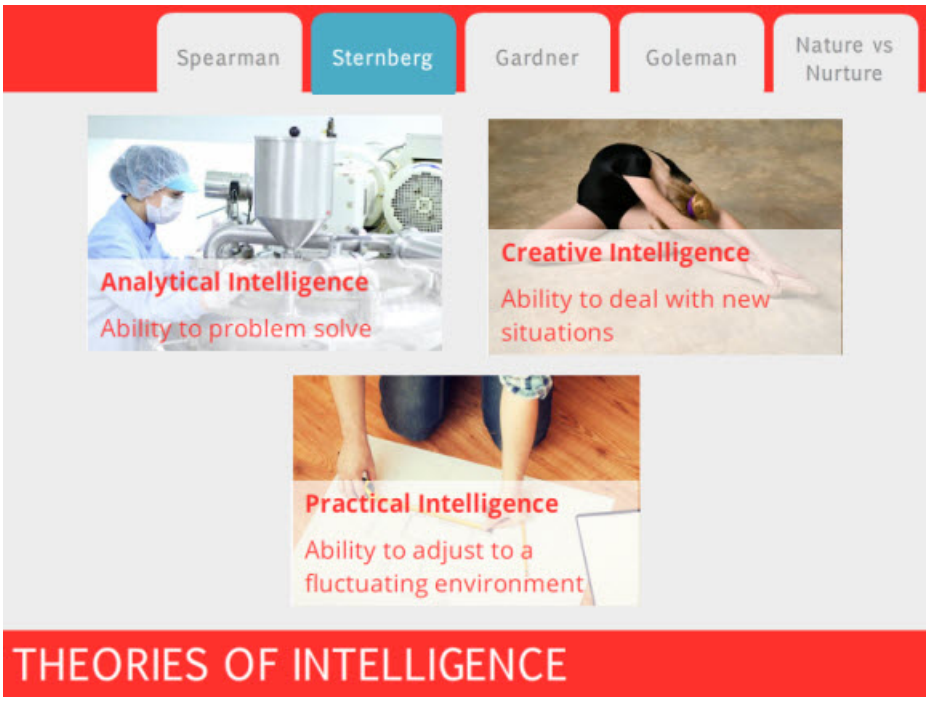
Sternberg



Robert Sternberg (1949 -) believed intelligence was made up of three different factors. He felt that other definitions of intelligence were limited because they failed to measure creativity and common sense. Sternberg felt intelligence tests should be expanded to measure analytical intelligence, creative intelligence, and practical intelligence. The psychologist defined analytical intelligence as the ability to problem solve, creative intelligence as the ability to deal with new situations, and practical intelligence as the ability to adjust to a fluctuating environment.

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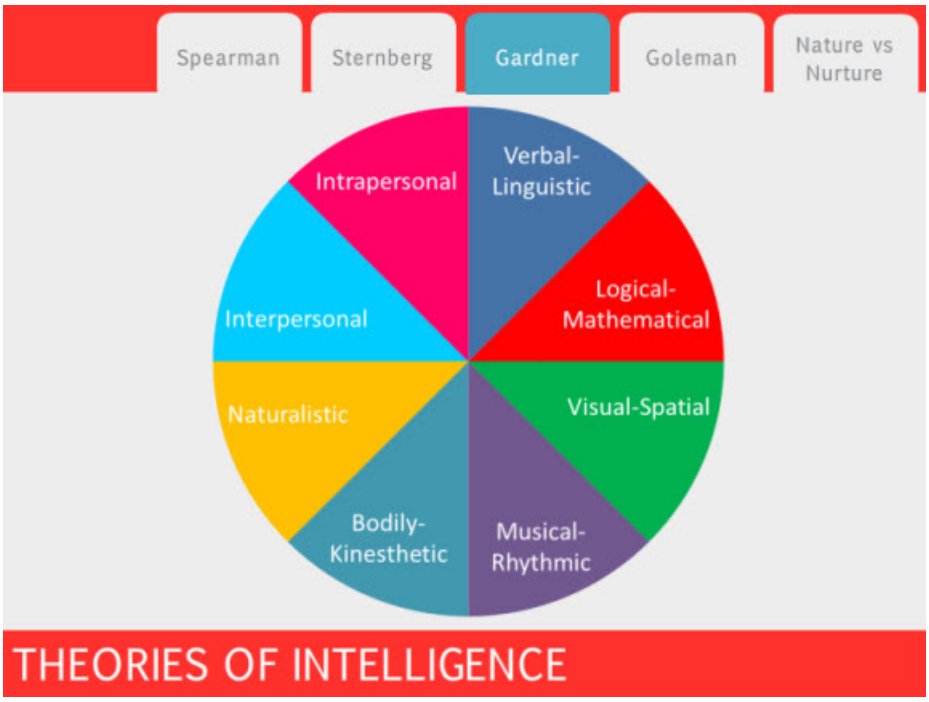
Gardner



Howard Gardner (1943-) believed that intelligence cannot solely be defined by a number, but rather by a collection of skills and abilities. Gardner was intrigued by savants who often scored very low on intelligence tests, yet exhibited brilliance in one narrow ability. This led him to reason that there are many areas of intelligence, including verbal-linguistic, logical-mathematical, visual-spatial, musical-rhythmic, bodily-kinesthetic, naturalistic, interpersonal, and intrapersonal. The diagram on the screen depicts a list of intelligences Gardner proposed. Click the pulsating pins in the pieces of the chart to view what the intelligences represent.

- Verbal-Linguistic: This intelligence involves sensitivity to spoken and written language, the ability to learn languages, and the capacity to use language to accomplish certain goals. People with verbal-linguistic intelligence like to read, write, and tell stories.
- Logical-Mathematical: This intelligence consists of the capacity to analyze problems logically, carry out mathematical operations, and investigate issues scientifically. People with logical-mathematical intelligence are good at math, reasoning, problem solving, detecting patterns, and thinking logically.
- Visual-Spatial: This intelligence involves the potential to recognize and use the patterns of space and area. People with visual-spatial intelligence like to draw, build, design, create, daydream, look at pictures, watch movies, and play with machines.
- Musical-Rhythmic: This intelligence involves the potential to pick up sounds, remember melodies, notice pitches, tones, and rhythms, and keep time. People with musical-rhythmic intelligence like to sing, hum tunes, listen to music, play an instrument, and respond to music.
- Bodily-Kinesthetic: This intelligence involves the potential to use one's whole body, or parts of the body, to solve problems. People with bodily-kinesthetic intelligence are good at physical activities like sports, dancing, acting, and crafts.
- Naturalistic: This intelligence involves a desire to be outside with animals, geography, and weather, and to interact with the surroundings. People with naturalistic intelligence are good at categorizing, organizing a living area, planning a trip, preservation, and conservation.
- Interpersonal: This intelligence involves the capacity to understand the motivations and desires of others. People with interpersonal intelligence are good at understanding people, leading others, organizing, communicating, manipulating, and mediating conflicts.
- Intrapersonal: This intelligence involves the capacity to understand oneself, and to appreciate one's feelings, fears, and motivations. People with intrapersonal intelligence are good at focusing inward on feelings and dreams, following instincts, pursuing interests and goals, and being original.

Goleman

Daniel Goleman believed IQ is an important component to intelligence, but he also thought people's emotions, and their ability to express emotions to others, constituted another facet of intelligence. In 1995, Goleman wrote about his theory of emotional intelligence. He identified five factors needed to become successful in school and on the job, including emotional self-awareness, self-regulation, motivation, empathy, and social skills. Goleman believed that having emotional intelligence can decrease disciplinary problems and bullying in school, and also increase academic performance and positive behavior.

Click each of the five factors to explore how emotions play a role in intelligence.

- Emotional self-awareness: Having a sense of what you are feeling, and how this affects others;
- Self-regulation: Having the ability to control your emotions instead of acting impulsively;
- Motivation: Having the ability to use emotions to reach goals, learn, and persist when faced with difficulties;
- Empathy: Having the ability to perceive others' emotions;
- Social skills: Having the ability to maintain relationships and influence others.

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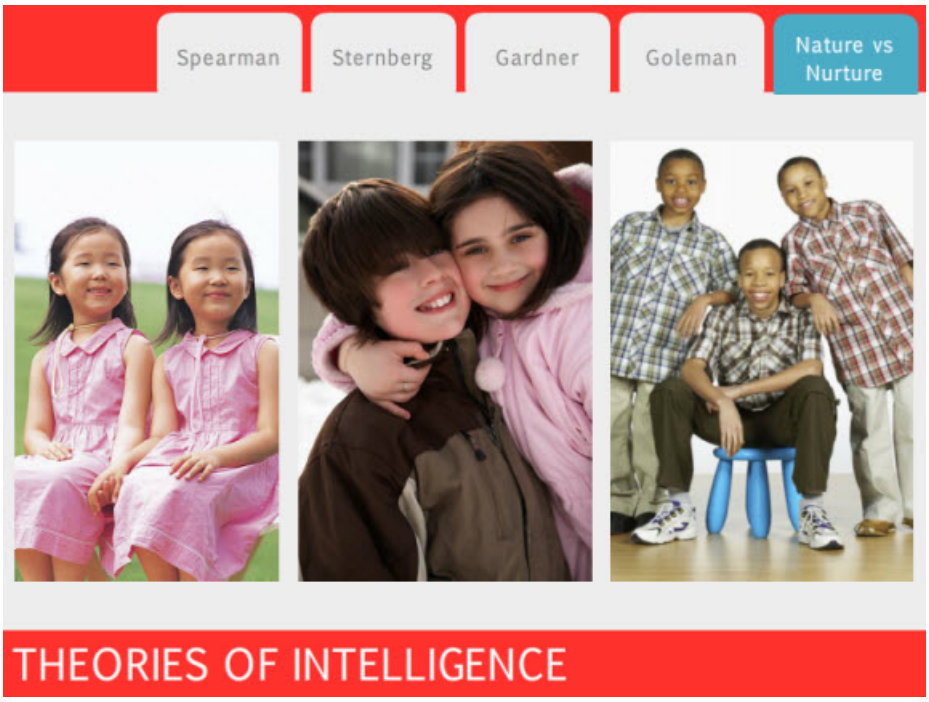
Nature vs Nurture



Are people born smart or do their experiences make them smart? The ways heredity and environment influence traits have long been debated, and in an attempt to shed light on this controversy, psychologists have extensively studied intelligence. For example, studies of identical twins, fraternal twins, and adopted siblings have revealed IQ is hereditary. However, one's individual environment should not be discounted. Harmful prenatal toxins, poverty, and schooling can have a negative effect on IQ.