**Intelligence**

**Intelligence** can be defined as the ability to learn from experience, solve problems, and use knowledge to adapt to new situations. Although not definitive, there is some research to suggest that humans with higher intelligence have larger brains, specifically in the frontal and parietal lobes. Brains that are more efficient tend to be more intelligent.

**Theories on Intelligence**

* Spearman’s Two-Factor Theory: there is **general intelligence** (g) and specific intelligence (s), which together tell the story of intelligence. He granted that people often have special abilities that stand out and he helped develop **factor analysis**, a statistical procedure that identifites clusters of related items. However, he found that people who perform well in one area, generally do well in others.
* Howard Gardner’s Theory of Multiple Intelligences: more intelligences than just one: verbal, logical-mathematical, visual-spatial, bodily-kinesthetic, musical-rhythmic, interpersonal, intrapersonal, naturalistic, existential. This relates to **savant syndrome**, which is a condition in which a person otherwise limited in mental ability has an exceptional specific skill. Additionally, talent doesn’t equal success. Those with talent and **grit** (passion and perseverance towards goals) are a better recipe for success.
* Robert Sternberg’s Triarchic Model: three factors to intelligence: analytical (academic) intelligence, creative intelligence, and practical intelligence
* Goleman’s Theory of **Emotional Intelligence**: a theory that can explain why “smart” kids are sometimes unsuccessful at school or work. This theory relates to self-awareness, mood management, self-motivation, impulse control, and people skills.

**Measuring Intelligence**

Intelligence is measured using intelligence tests which assess an individual’s mental aptitude and comparing them with those of others, using numerical scores. People often mistake intelligence for **achievement** or **aptitude.** Achievement refers to the knowledge and skills you’ve gained from experience. Example: if you do well on a U. S. History test, it shows that have high *achievement*, not necessarily high intelligence. Aptitude predicts a person’s future performance—the capacity to learn.

* **Stanford-Binet Scale**: This is a traditional scale that results in an **intelligence quotient “IQ”** score. It is derived by finding a person’s “**Mental Age**” and dividing it by his/her “Chronological Age.” People can score a high mental age showing abilities beyond those typical shown by people their age.

Alfred Binet came up with the idea of a mental age, but Lewis Terman developed it into the Stanford-Binet scale, we know today.

* **Wechsler Adult Intelligence Scale (WAIS):** These are more widely used today. It consists of subtests focusing on verbal, nonverbal, and performance abilities. It can focus more on specific abilities. It results in an IQ score, but does not use the idea of “mental age.”

Intelligence tests are expected to meet three criteria:

**Standardization**: test procedures are uniform

**Reliability:** test yields consistent results

**Validiity**: test measure/predicts what it’s supposed to

Content validity—does it measure the right behavior?

Predictive validity—does it predict the behavior?

Intelligence Tests result in a **normal curve**:



These tests are used to determine categorizations such as “**intellectual disability**” (below 70) and being “gifted.” People with **down syndrome** have a combination of intellectual disability and physical condition caused by a genetic condition in which they have an extra chromosome 21.

**Factors Influencing Intelligence and Intelligence Testing**

* Genetic: correlation between siblings and twins suggest a strong genetic component
* Home and parenting: parent involvement, educational activities, independence, early educational interventions
* Race, Ethnicity, and Bias: racial groups have shown differences in scores. Are tests biased? Environmental factors? **Steroptype threat?** Stereotype threat is self-confirming concern that one will be evaluated on a negative steroptype. They think they will be judged differently, so they don’t perform the same.
* Gender: girls tend to perform better in verbal and emotional tasks, while boys tend to perform better in math and spatial tasks
* Age—there are conflicting studies in this regard but it appears that our **crystalized intelligence** (general knowledge and vocabulary) tends to increase while our **fluid intelligence** (speedy reasoning) tends to decrease.