

IQ Potpourri

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IQ, a putative measure of overall intelligence, is normally distributed. This means that 68% of the population has an IQ of within + or – one standard deviation (15 IQ points) of the mean or average IQ of 100. That is, an IQ of between 85 and 115. Moreover 95% of the population lies within 2 standard deviations of the mean -- between an IQ of 70 and 130.

Whether or not IQ tests are an accurate measure of intelligence is open to debate. It is difficult to define exactly what constitutes intelligence; **it may be the case that IQ scores represent a very specific *type* of intelligence** - Wikipedia

Many have challenged IQ (and its sibling the SAT exam) as the gold standard for measuring a person's mental ability and the likelihood of succeeding in life. Thus a few of the human/mental/personality attributes that IQ/SAT tests do not measure that can contribute to one's "success" (apart from finding a compatible job, a devoted spouse and raising a wholesome family). Fourteen of these critical traits are **tenacity, ambition, creativity, originality, self-confidence, self-esteem, curiosity, integrity, insight, talent, inventiveness, courage, entrepreneurial ability, managerial/leadership skills and finally that crown jewel of mental ability: good judgment.** (Good judgment is like pornography – hard to define and massively dependent on context) It is unacceptable, moreover, to allow good judgment to be confused with that more popular trait (which is a good one to have): common sense. Thus, by "judgment" we are referring to the ability to "seize the strong point in any argument", as characterized by John Newman in *On the Scope and Nature of a University Education*.

Of some interest in this regard, we might want to consider William Sidis who had the highest IQ score (250) ever recorded. In an essay on genius by William Benet, we learn that Sidis spoke forty languages and graduated from Harvard at 16. After teaching briefly at Rice University he quit and "for the rest of his life wandered from one menial job to another."

Plenty of people with average IQ's have an abundance of the above mentioned fourteen critical traits and are quite "successful" despite a fair-to-middling IQ. And plenty of high IQ individuals lack these critical mental qualities such as William Sidis -- with his stellar IQ of 250 mentioned above – and come to very little in life.

When all is said and done it is of some interest that so much research has been performed, and volumes of papers published, on the significance of IQ/SAT type tests (and their easily *quantifiable* scores) keyed to abstract reasoning ability, mental speed and a strong memory while so little attention (relatively speaking) is paid to the fourteen horsemen or so of the ingredients to success. Is it simply because IQ is an entity that can be easily measured with timed questions that yield to only one correct answer?

When it comes to nature vs. nurture one of the great paradoxes in the field is the lack of aptitude for "success" among so many presidential siblings. In this regard, one

need only consider the diminutive brothers of Clinton, Reagan, Johnson, Carter and Nixon to realize how fallible "equality of nurturing" can be as a determinant of either intelligence or success. Meanwhile, the influence of genetics on both intelligence and success has often been demonstrated in studies showing the similar performance (or measured intelligence) of genetically identical twins reared apart and in quite different circumstances/environments. At still another level of interest, we might wish that every student could receive an education allowing him/her to become a Newton, Jefferson, or Shakespeare. Not very likely to happen, however. Likewise isn't it woefully unrealistic to suggest that Newton himself could have become a Jefferson, or a Mozart, if only he had been raised in the right environment with "optimal" nurturing?

Situations like these raise questions about the role of nature vs. nurture and also about the *range* of genetic outcomes in terms of raw, native or innate brainpower that it is possible for a given couple to bequeath to their offspring. Thus, what is the range of biologically determined brainpower that can arise with 1 million genetically unique eggs on the mother's side of the equation and 200 million unique sperm per "event" (with similar permutations) on the father's side of the equation being fused together as a result of willy-nilly chance events? Does every couple have a chance (great or small) of producing an Einstein, Newton, Dostoevsky, Shakespeare, Mozart, Beethoven, Van Gogh or Rembrandt – or Hitler, Bin Laden or Hussein for that matter?

Along these lines we have one final idea to proffer. Differences in innate brainpower straight out of the womb involve a huge spectrum of outcomes across humankind. These differences in terms of one's potential at birth to do extraordinary things are enormous. This raises the possibility that the dominant determinants of one's potential to mentally soar are ingrained attributes in the genetic/molecular structure and chemical balances within the innate birth-brain prescribed at conception and formulated during gestation. From this standpoint *innate intelligence, or brainpower, can be construed as the maximum potential a brain possesses at birth to eventually perform tasks conventionally associated with the numerous and diverse attributes of intelligence – given an optimal environment, or nurturing, for whatever the task at hand may be*. Admittedly this is an abstract concept but such distinctions exist even if our scientific development (to date) is too primitive to measure them.

Without the ability to write (made possible by a completely evolved, and fully-opposable, thumb) mankind would be only slightly better off today than his near cousin the Chimpanzee. Or to put it another way, without a formal education of any sort nor access to "modern" technology spanning the past 5,000 years or so, an ordinary human with an IQ of 100 is much closer in mental development and lifestyle to a chimpanzee than to the 16 year old child of an American millionaire. Meanwhile, every human among us can be *taught* to read, write and think because of our alphabet(s) and our unique 1200 cc brains. Indeed, reading, writing and the ability to think logically is unique to our species and "just there for the asking" by everyone. But the ability *to excel in life* requires much more than that.

It requires being born with extraordinary inherited genes producing not only an agile brain with an excellent memory but abstract reasoning ability as well -- the mental traits emphasized by IQ/SAT exams. Still one cannot ignore other imbued mental characteristics underlying excellence or success such as the fourteen horsemen of tenacity, ambition, creativity, originality, self-confidence, self-esteem, curiosity, insight, integrity, talent, inventiveness, courage, entrepreneurial ability, managerial/leadership skills and finally that crown jewel of mental ability: good judgment. And clearly several of these can be enhanced, or penalized, by environmental factors or nurturing.

ADDENDUM

Citations from Wikipedia Regarding IQ

About 20,000 genes are thought to have an impact on the development and functionality of the brain.

The [American Psychological Association](#)'s report "Intelligence: Knowns and Unknowns" states that wherever it has been studied, children with high scores on tests of intelligence tend to learn more of what is taught in school than their lower-scoring peers. The correlation between IQ scores and grades is about .50

The US military has minimum enlistment standards at about the IQ 85 level. There have been two experiments with lowering this to 80 but in both cases these men could not master soldiering well enough to justify their costs. [In stark terms this is saying that 15.8% of the population is too dumb to be considered for the military.]

According to Frank Schmidt and John Hunter, "for hiring employees without previous experience in the job the most valid predictor of future performance is general mental ability." The validity of IQ as a predictor of job performance is above zero for all work studied to date, but varies with the type of job and across different studies, ranging from .20 to .60... While IQ is more strongly correlated with reasoning and less so with motor function, IQ-test scores predict performance ratings in all occupations. That said, for highly qualified activities (research, management) low IQ scores are more likely to be a barrier to adequate performance, whereas for minimally-skilled activities, athletic strength (manual strength, speed, stamina, and coordination) are more likely to influence performance. It is largely [due to] the quicker acquisition of job-relevant knowledge that IQ predicts job performance.

Average adult combined IQs associated with real-life accomplishments by various tests:

- Neurosurgeons, research scientists, university professors 135+
- MDs, JDs, or PhDs 125 ([WAIS-R](#), 1987)
- College graduates 112 ([KAIT](#), 2000; [K-BIT](#), 1992), 115 (WAIS-R)

- 1–3 years of college 104 (KAIT, K-BIT), 105-110 (WAIS-R)
- Clerical and sales workers 100-105
- High school graduates, skilled workers (e.g., electricians, cabinetmakers) 100 (KAIT, WAIS-R), 97 (K-BIT)
- 1–3 years of high school (completed 9–11 years of school) 94 (KAIT), 90 (K-BIT), 95 (WAIS-R)
- Semi-skilled workers (e.g., truck drivers, factory workers) 90-95
- Elementary school graduates (completed eighth grade) 90
- Elementary school dropouts (completed 0–7 years of school) 80-85
- Have 50/50 chance of reaching high school 75

Average IQ of various occupational groups:

- Professional and technical 112
- Managers and administrators 104
- Clerical workers; sales workers; skilled workers, craftsmen, and foremen 101
- Semi-skilled workers (operatives, service workers) 92
- Unskilled workers 87

There is considerable variation within and overlap between these categories. People with high IQs are found at all levels of education and occupational categories.”

More on IQ from Wikipedia

SEX - Most *IQ tests are constructed so that there are no overall score differences between females and males.* Because environmental factors affect brain activity and behavior, where differences are found, it can be difficult for researchers to assess whether or not the differences are innate. Areas where differences have been found include verbal and mathematical ability. [And partly because of mentioning these differences – especially in terms of math aptitude -- as possibly being innate, former Treasury Secretary Lawrence Summers lost his position as president of Harvard University and was replaced by a woman.] [Added]

Race - The 1996 Task Force investigation on Intelligence sponsored by the American Psychological Association concluded that there are significant variations in IQ across races. The problem of determining the causes underlying this variation relates to the question of the contributions of "[nature and nurture](#)" to IQ.” [In addition, serious social issues arise in this department because of the stubborn fact that these differences are part and parcel of reality, whatever their causes or potential future remedies may come about for solving them. Meanwhile it is worth noting that 20% of blacks have an IQ above 100 while 50% of whites do.] [Added]

Excerpts from William Benet's Essay on IQ's Relationship to Genius

....Today, not only have high IQ scores become used to identify children for gifted programs, but in popular parlance have become equated with genius. This is very unfortunate since, as we shall see, the relationship between high IQ scores and genius is not always apparent. In fact, history is full of geniuses who more than likely had ordinary IQs....

The word "genius" is derived from the Latin verb "gignere", which means to beget or produce. Historically, genius referred to one's ability to accomplish or create something -- something that performance on an IQ test does not measure.

Consider Einstein, for example: as a child, he was delayed in speech and was a poor student who dropped out of school at one point and failed to pass the entrance examination for admission to the Swiss Federal Institute of Technology in Zurich. He was eventually admitted after retaking the examination two years later, and graduated, but was unable to obtain a university teaching position, and went to work instead as an assistant technical clerk in the patent office in Bern, Germany. Einstein was well on his way to what appeared to be an entirely uneventful and undistinguished career.

Einstein's IQ is unknown. It has never been tested, but there is no question that he was one of the greatest geniuses of the 20th century. There have been other geniuses who, if they had been tested, may not have obtained very high scores, or even above average scores, on an IQ test, especially in the arts and literature. It is interesting but idle to speculate how, say, Picasso or Hemingway or any number of artists or writers might have scored. And then there are geniuses in other fields of endeavor, such as sports and entertainment, for whom a discussion of IQ seems completely irrelevant.

.....And a high IQ score is by no means a guarantor of success and accomplishment in life. Consider William James Sidis, who reportedly had the highest IQ in history. The story of Sidis, whose IQ was estimated to be over 250, was, by every account, phenomenally gifted. Grady M. Towers, in an article in Gift of Fire (the journal of the Prometheus Society), wrote that at eighteen months Sidis could read The New York Times, at two he taught himself Latin, and at three he learned Greek. By the time he was an adult, he could speak more than forty languages and dialects. He graduated from Harvard cum laude at sixteen, and became the youngest professor in history at Rice University. Towers wrote, "Of all the prodigies for which there are records, his was probably the most powerful intellect of all. And yet it all came to nothing. He soon gave up his position as a professor, and for the rest of his life wandered from one menial job to another."

.....I am often asked by children, whom I evaluate for gifted programs, and their parents, what is a "genius IQ score?" And I tell them, quite matter of factly, there is none. Genius is what one accomplishes in life, not the score one makes on a test of mental ability. As a practical guideline, I advise parents, who are typically more concerned than their children about what their scores mean, that any child that scores around 115 (or higher than two

thirds of their peers) has the general intellectual ability to succeed in virtually any endeavor that is accompanied by interest and application. University of California at Berkeley educational psychologist Arthur Jensen, Ph.D., wrote that beyond one standard deviation above the mean (an IQ score of around 115), "the IQ level becomes relatively unimportant in terms of ordinary occupational aspirations and criteria of success." [Note that an IQ of 115 equates to a combined score of about 1000 on the old SAT (1600 max) for the equivalent of 500 on verbal and on 500 math, or some combination thereof.]

For those who score higher than this, the only limitations are drive and desire plus the ability to initiate and carry out tasks or simply the ability to get things done. Drive and desire cannot be overstressed....[consider] one of America's greatest inventive geniuses: Thomas Alva Edison. Like Einstein, he was not a very good student, and quite likely would not have scored very high on an IQ test in childhood. But Edison, like all geniuses of great accomplishment, had boundless drive, and understood perfectly the essence of genius when he wrote, "Genius is one percent inspiration and 98 percent perspiration."

.....IQ testing is extremely useful in accurately assessing and identifying children who are mentally handicapped as well as gifted. They are also useful in occupational screening and have been used by the U.S. Armed Forces since WWI for screening and classifying recruits for job assignments. Where IQ tests are less useful is in making meaningful distinctions between different IQ levels at the extremes of ability, both above and below the mean, but especially the former.

.....We can conclude, by once again quoting Jensen, who wrote, "That is not to say that there are not real differences between the intellectual capabilities represented by IQs of 115 and 150 or even between IQs of 150 and 180. But IQ differences in this upper part of the scale have far less personal implications than the thresholds just described and are generally of lesser importance for success in the popular sense than are certain traits of personality and character."

W. E. Benet, Ph.D., Psy.D.