# How to Know Your I.Q. 

# Level Without Taking 

## the Test

By Billy J. Burton

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Sincerely, Billy J. Burton

## TABLE OF CONTENTS

PART ONE: I.Q. AND PERSONALITY<br>1. I.Q. Tests: Facts and Observations<br>1.1 What's an I.Q. Score?<br>1.2The Different Types of Tests<br>1.2.1 A Little History<br>1.2.2 Nowadays<br>1.3 Are Official Tests Accurate?<br>1.3.1 I.Q. Tests Are Flawed Tools<br>1.3.2 Why Use an I.Q. Scale at All?<br>2. Variations in I.Q.Scores<br>2.1 Genetics: Variations in Brain Structure<br>2.2 Environment, Society and Healthcare: Variations in Nurture<br>2.3 I.Q. Scores Discrepancy<br>2.3.1 Among Countries<br>2.3.2 Among People<br>2.4 The Homogeneity of Intelligence Levels in Social Groups<br>2.5 The Perception of Intelligence<br>3. I.Q. Understood by Standard Deviations<br>3.1 The Gaussian Curve<br>3.2 The Ranges<br>3.2.1 The Main Communicative Functioning of each Range<br>3.2.2 The Habitual Brain Functioning of each Range<br>4. I.Q. and Personality<br>4.1 Personality Traits Involved in Intelligence<br>4.2 Intelligence Can also be Noticed in One's Appearance<br>4.3 The Advantages and the Drawbacks to a Psychological Approach<br>PART TWO: THE PSYCHOLOGY BEHIND EACH RANGE<br>CHAPTER 1: The Normies, The Neurotypicals (I.Q.:70 to 129) 95\%<br>l.The Inferior Range [IR] (70 to 85) 14\%<br>2.The Normal Range (85 to 115) 68\%<br>2.1The Lower Normal Range [LNR] (85 to 100) 34\%<br>2.2The Upper Normal Range [UNR] (100 to 115) 34\%<br>3.The Superior Range [SR] (115 to 130)14\%<br>CHAPTER 2: The Gifted, The Neuroatypicals (I.Q. above 130) $2.5 \%$<br>1.What Do All the Gifted Have in Common?<br>2.The Moderately Gifted Range [MG] or [HIQ] (130 to 144) nearly $2 \%$<br>3.The Highly Gifted [HG] (145 to 159); The Exceptionally [EG] (160 to 174) and Profoundly Gifted [PG] (175+)<br>Specifications for The Exceptionally [EG] and Profoundly Gifted [PG] (160 to 175; Above 175)<br>3.1 $E G$<br>3.2 PG<br>CONCLUSION<br>1.I Hope You Were Able to Recognize Yourself in One of Those Groups.<br>2.How Can You Communicate with Other Ranges?<br>3.What is Intelligence Exactly?<br>3.1 It's a Different Level of Consciousness<br>3.2 Why Did Evolution Create Different Levels of Intelligence?<br>I.Q. GUESSING TOOLS

## Why This Book?

You must have heard all sorts of things about the Intelligence Quotient (I.Q.). Most psychologists believe this tool to be accurate to determine your cognitive intelligence but nothing else. Some people believe Emotional Intelligence and the Multiple Intelligence theory are better predictors of your life outcomes. Lots of people think it's just a number or that it simply measures your ability to take the test.
Are they right?
Well, in a way, but not entirely or I wouldn't be writing this book.
A long time ago I felt like these people, until I took my first I.Q. test out of curiosity. It wasn't anything fancy and expensive, no; just a regular test crafted by a psychologist who wanted to help his readers discover their I.Q. level, from 50 to 170 . Surprisingly, I scored much higher than expected without trying too hard, the score that was looking back at me, was within "the top $2 \%$ ". However, there was one caveat; the book specified that if you scored either in the lower or higher $2 \%$ then the test was probably not a good measurement of your I.Q.!

I was puzzled, not sure what to make of it. I told some friends about it and got slammed, they pretty much said I took it wrong, and I was an idiot. I had taken that test because I had always felt disconnected from most people, sometimes really smarter, other times really dumber, but nevertheless always different. Given my friends' reactions, I forgot all about this test for many years until I ran into a new book.

That second book had been written by another psychologist. It wasn't an I.Q. test; it was aiming at explaining the difficulties of "The Gifted". Being unaware of any particular troubles they might have, I perused through it at a bookstore.

These so-called "gifted people" actually represent "the top $2 \%$ ", I seemed to be a part of, when I took that I.Q. test. Intrigued, I sheepishly bought the book, afraid the checker would think me vain for assuming the label "gifted" might apply to me. I devoured that book over a single weekend. Out of a list of 50 traits, associated with giftedness, I seemed to exhibit every single one of them. I had always thought I was an average person, but suddenly, there, it was staring me in the face. I was convinced to be a gifted person endowed with cognitive prowess, but at the same time, emotional difficulties.

So actually, I wasn't crazy or weird; I was part of this world of high I.Q. people with all of the discrepancies from the norm that it entails. I started looking into the specifics of giftedness. At that level, intelligence isn't just quantitatively different, it's also qualitatively diverse.
Then, a few years ago, I ran into the third book that would forever alter my outlook on I.Q. and intelligence. It described how there actually was two main types of gifted individuals, essentially those labelled "Moderately Gifted", who comprise practically the entirety of "the top 2\%", and those above that I.Q. level who exhibit even more unusual emotional and behavioral traits. To my astonishment, I appeared to be part of the stranger realm of the "Highly, Exceptionally and Profoundly Gifted" individuals.

Recently, I was able to confirm that psychological approach with professionally administered I.Q. tests.

Still, that awareness incited me to inquire about a potential link between one's specific emotional, behavioral, and intellectual makeup and one's I.Q. level. After years of studies and research, I have finally developed a psychological understanding of intelligence. I have devised a way to assess it through the measure of its emotional and behavioral consequences on the tested subject.
With this book, I have the desire to help the reader understand what intelligence really is, what it feels or looks like in everyday interactions with diverse types of individuals. Likewise, I wish to assist you in evaluating your own probable I.Q. level, regardless of your difficulties in taking an I.Q. test, may it be because of its cost or because of emotional, psychological, or neurological deficiencies.

As I aim to rid the I.Q. concept of any appraisal issue, in this book, I strictly equate an I.Q. score with its corresponding intelligence amount and its dissimilarities from the norm. For, as we will see, a person who took a certified test, then was given a precise score, may really belong to a more elevated I.Q. rank.

In the first part of this book, I will present a summary of what I.Q. tests really are, as well as the advantages of resorting to a psychological approach to measure intelligence. In a second part, I will strive to explain the unique psychological aspects of members of most I.Q. ranges.
By recognizing yourself in one of the groups presented, you will be able to evaluate which I.Q. range corresponds to you. At the end of this book, I'm including numerical tools, still based on personality traits, enabling you to narrow this bracket down significantly for more precision.

## PART ONE:

## I.Q. and Personality

Who hasn't heard of the intelligence quotient (or I.Q. ${ }^{27}$ )! It is connected to the elusive idea that some people's brains are more efficient than others, that these people are destined to be more successful, more respected, more admired than their peers. It often elicits jealousy and resentment, sometimes pride when a parent finds out their child is more cognitively endowed than most.

People view the concept of I.Q. as purely cerebral, devoid of consequences on awareness, behavior, or relationships. The idea of intelligence being related to psychology is overlooked, or even utterly denied by many practitioners and lay-people alike. However, one can witness evidence of this connection in certain psychology volumes ${ }^{0}$ about the emotional issues of "The Gifted ${ }^{266 "}$.

This link between degrees of intelligence and personality traits may be taken much further, until one can actually portray the standard personality exhibited by members of each I.Q. range.

As you are reading this book, I will attempt to help you detect your level of intelligence in the hope of enhancing the likelihood of your achieving your life goals as well as smoother communication with other cognitive levels. Besides, I wish for gifted people to identify their specificities in order to avoid missed opportunities, heartaches, misunderstandings, and the loneliness that goes with it.

## 1. I.Q. Tests: Facts and Observations

So far, intelligence has only really been assessed, with some precision, by scientifically normed I.Q. tests ${ }^{241}$ overseen by psychologists. No other method has ever given a better outcome, but the notion, although renowned, remains fuzzy.
You may be wondering what those tests truly represent and what they actually measure. You may be unsure whether or not they are accurate.
You may have been confused by the results given to you after an assessment.
The next paragraphs should enlighten the curious reader.

### 1.1What's an I.Q. Score?

What exactly is an I.Q. score ${ }^{1}$ ?
It's not a mark, points, or the total of one's neurons. It is a relative score comparing one's mental ability to that of the rest of the general population in one's country. It doesn't measure intelligence directly but what one can do with it compared to the reference group. It is akin to measuring your strength by how high you can jump or how far you can throw.
I.Q. testing is habitually used as a clue for psychologists to find out if people are capable of unusual mental performance or if they suffer from cognitive disabilities ${ }^{242}$. It ordinarily has to be completed with a psychological assessment ${ }^{14}$ to proceed with a diagnosis.

### 1.2 The Different Types of Tests

To measure an Intelligence Quotient ${ }^{27}$ you need a tool in the form of a test. It resembles an exam with questions, not specifically created to evaluate what you know, but rather whether you are cognitively equipped to find a solution. Several authors have invented their own specific tests for quantifying intelligence over the years.

### 1.2.1 A Little History

In 1905, Alfred Binet was asked, by the French government, to create a test destined to measure children's intelligence in the hope of evaluating their cognitive disabilities. Its purpose was to avoid sending those youngsters to an asylum by establishing if they were merely slow as opposed to insane: The Binet-Simon test ${ }^{2}$.

A few years later, in 1912, a German psychologist named William Stern ${ }^{4}$ invented the term Intelligence Quotient ${ }^{3}$ or I.Q. in short. It represented the ratio between a child's mental age and his or her real age for comparison purposes.
Then, in 1916, Alfred Binet inspired Lewis Terman, a psychologist from the Stanford Graduate School of Education, to create the first intelligence scale along with his Stanford-Binet ${ }^{11}$ test.

In 1939 the calculating method was changed, namely by David Wechsler ${ }^{5}$, an American psychologist, to a relative score ${ }^{15}$ comparing itself to other test-taker's score, of the same age group, in the same country. He thought intelligence was constituted of several elements which could be measured by several large subtests representing a particular aspect of cognitive ability ${ }^{6}$. His tests, each aimed at one age group, are still the most famous and widely used ones in the world (WPPSI, WISC, and WAIS ${ }^{243}$ ).

To him, intelligence was the faculty to be logical, reach one's goals, and be in control of one's life outcomes. ${ }^{7}$
Wechsler's tests, in the USA, rival with James McKeen Cattell's ${ }^{8}$ who was the first American psychology professor, and author for the Science Journal. He eventually designed his own test, based on a wider scale than Wechsler's.

### 1.2.2 Nowadays

Nowadays, standardized tests involving several types of puzzles are used to rank a person's intelligence in the main cognitive areas. The resulting score is compared to the average intelligence of the test-taker's countrymen by converting it to a rank positioned on the normal distribution function ${ }^{9}$. This rank corresponds to the proportion of people who share the same intelligence degree in the same age-group. There have been several legitimate I.Q. tests used by psychologists for decades ; some are aimed at children whereas others are for adults. They differ by author, scale, standard deviation, subtests ${ }^{19}$, main cognitive skills focus, but their mean (or Esperance) is usually set at 100 .

Most tests assess the main intelligence categories, albeit in different groupings of reaction time, verbal, numerical, spatial, abstract, or logical etc.... subtests. Abstract reasoning is particularly interesting as it impacts every other skill ${ }^{36}$ and can be perceived as a kind of core fluid intelligence ${ }^{79}$ influencing cognitive abilities and their related psychological traits.

Points are, at that moment, attributed to all subtests, and afterwards, a rank in the form of a global score, or a percentile ${ }^{29}$, is calculated and given to the "patient". A percentile is the percentage of people who did worse than the test-taker on the assessment.

The most famous tests, available nowadays, are the Wechsler Adult Intelligence Scale ${ }^{10}$ (or WAIS), the Stanford-Binet ${ }^{11}$, the Cattell Culture Fair Intelligence Test ${ }^{12}$, the Raven Progressive Matrices ${ }^{13}$ and a few others. Each of them employs a particular scale.
The scale I resort to, in this book, is the most widely used in the world (except in the USA): the Wechsler scale ${ }^{22}$.

The average of most modern tests is set at 100 by default. It is considered mean intelligence. On the Wechsler Scale, the scores follow a bell curve with a fat hump of $68 \%$ of people who fall within the average range: between 85 and $115 ; 16 \%$ are above $115,16 \%$ are below 85 . On the Cattell Scale the ranges boundaries are distinct.
Untimed tests for high-range ${ }^{244}$ intelligence exist as well. Sadly, due to the limited number of people with such high cognitive abilities, they are normed with smaller groups and frequently developed outside of official structures. As a result, they are considered fairly unreliable.

Two main scales:

| Wechsler scale | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cattell Scale | 20 | 36 | 52 | 68 | 84 | 100 | 116 | 132 | 148 | 164 | 180 | 196 | 212 |
| Percentile | 0.05 | 0.36 | 2.27 | 9.47 | 25,25 | 50 | 75.41 | 90.53 | 97.72 | 99.62 | 99.96 | 99.997 | 99.999 |
| 1 person in | 1 | 1 | 1.02 | 1.1 | 1.33 | 2 | 4 | 11 | 44 | 261 | 2330 | 31560 | 652598 |

To explain the table 22 above, a person with an I.Q. score of 120 on the Wechsler Scale does better than $90.53 \%$ of the population of his or her country and such a level (or above) is found in 1 person out of 11. Similarly, a person with an I.Q. score of 90, does better than $25.25 \%$ of people and such a score (or higher) can be found in 100 people out of 133 (1/1.33).

### 1.3 Are Official Tests Accurate?

Every so often, I meet people who distrust I.Q. tests assuming they cannot measure intelligence properly.
Is there any basis to that assumption, or are tests really trustworthy?

### 1.3.1 I.Q. Tests are Flawed Tools.

A handful of flaws have been observed, over the years, which put a damper on the notion of the all-powerful, unquestionable I.Q. test score. These defects are to be attributed to the configuration of the test itself, but also, to the emotional state of the test-taker.

## Test Issues

I.Q. tests are imperfect tools, yet, so far, nothing else has been able to measure intelligence comprehensively, with some degree of certainty, in a scientific way.
I.Q. measuring occasasions several significant contuncerns:

- The tests measure "The g factor" ${ }^{16-17}$ (the general intelligence factor), a component directly correlated to efficient cognitive functioning. This factor, involved in cerebral performance also characterizes the perception of what intelligence represents. But these I.Q. assessments only account for about $70 \%$ of " g " 18 ; consequently $30 \%$ of intelligence is never considered. A WAIS result, for example, is often given with an accuracy of $95 \%$ by providing a confidence interval ${ }^{19}$, hence the range sometimes given to the patient (ex: 123-133) instead of a single number (ex: 130), the confidence level of which, would be much lower.

In short, only part of your intelligence is considered in an I.Q. test and the result is a little uncertain.

- An I.Q. score somewhat depends on the type of test used. Some tests give a slight advantage ${ }^{248-}$ ${ }^{249}$ to people who are good at 3D puzzles, others to people who work better with letters or who
are highly logical. Some tests items involuntarily measure knowledge ${ }^{245}$ instead of inference; others possess more than one possible answer ${ }^{246-247}$, in this way, quantifying mainstream thinking instead of cleverness.

So, if you take 3 different assessments you will get 3 dissimilar I.Q. scores for the same "volume" of intelligence.

- Since these tests aim at quantifying one's ability to find solutions to problems one has never met before ${ }^{250}$, one cannot become excessively familiar with these types of questions for fear of invalidating the accuracy of the calculated score.

Therefore, having taken a previous I.Q. test may potentially alter the result of a future one.

- The most troublesome test feature for very clever individuals is the existence of test ceilings ${ }^{20-}$
${ }^{21}$. Because putting together normative groups of superior intelligence is arduous, I.Q. tests are particularly designed for people of average intelligence ${ }^{41}$ (I.Q. score from 85 to 115). For others, the score is merely an approximation to be confirmed by further I.Q. test-taking, which, as we have just seen, may actually prevent precision. The WAIS' maximum score is 160 , but its real upper limit is undoubtedly closer to 135-140 due to additional ceilings in all subtests ${ }^{251}$. As a result, the higher the total, the more artificially lowered it gets. People in the upper realms of intelligence typically hit every ceiling and end up with official scores around 135-140 unless specific extended subtests ${ }^{252}$ are added. In addition, the higher one ranks on the curve, the stronger one's aptitude in pattern-detection when presented with a great deal of seemingly unrelated information ${ }^{253}$. This is never considered in regular I.Q. tests, in which simple patterns are employed.

So, the less average your intelligence, the less accurately assessed by I.Q. tests it is.

- In psychometrics ${ }^{254}$ (psychological measurements), a global I.Q. score is valid if all the subtests' indexes are homogeneous. When subtests scatter ${ }^{23}$ is too great, the psychologist is not able to calculate a meaningful average. The test-taker may feel cheated for not receiving a concrete result, even if subtests can be interpreted individually. Besides, when subtest averaging is possible, a global I.Q. score doesn't necessarily hold much meaning on its own. Indeed, discrepancies between subtests highlight dissimilar functioning at the same intelligence level. It is especially interesting, to Neuro-atypicals ${ }^{255-256}$ (cognitively nonconforming people) for selfawareness reasons, as well as clever individuals as, the further removed from the average, the more spread out the subtests ${ }^{84}$. In any case, abstract reasoning, having an impact on every subtest ${ }^{36}$; it is undoubtedly the most trustworthy beacon to gauge somebody's intelligence.
Consequently, a global I.Q. score may be meaningless if subtests are too uneven.
- I.Q. tests largely estimate male reasoning proficiency ${ }^{37-38}$ in spatial and numerical logic. Consequently, the higher the score is, the greater the gap between the genders in the number of persons represented at each increment. This is confirmed by the enhanced variability of male brains' I.Q. scores ${ }^{24-25}$ compared to females. I'm referring to the brain structure here and not necessarily the sex of its owner. Still, men's scores are naturally more spread out, being more present at both ends of the curve ${ }^{257}$ (in the lower and higher ranges), than women's scores which are primarily found in the middle.

In a nutshell, I.Q. tests may be less suited to account for women's intelligence.

- The average I.Q. score varies from country to country ${ }^{27}$. Since it is a comparison to the rest of a given population, a score appraised with a test aimed at a specific country is only valid in that country ${ }^{258-259-260}$. Similarly, taking a test in a foreign language, even for fluent people, artificially lowers one's verbal I.Q ${ }^{261}$. score as well as the whole evaluation.

So, if you take an I.Q. test devised for foreigners or in a foreign language you may be at a disadvantage.

## The Flynn Effect:

The Flynn effect ${ }^{28}$ (noticed by James R. Flynn) is an apparent score increase, attributed, for the most part, to greater life complexity ${ }^{65}$ and heightened guessing habits ${ }^{64}$, which, in some measure, improve pattern recognition to favor higher scores. That gain is merely statistical and doesn't reflect actual betterment in cognitive ability. To make up for that artificial progression, I.Q. tests are overhauled every ten years ${ }^{262}$, so that, the same scores calculated decades ago and nowadays remain equivalent.

## The hidden decline in intelligence:

For environmental reasons ${ }^{263}$, to some extent, the tendency to become parents later in life ${ }^{43}$ and the higher percentage of childlessness among high I.Q. people ${ }^{40-43}$, intelligence has been declining, mainly in first world countries ${ }^{28-43}$, for over a century. Yet, that decline, which has been masked by the Flynn effect, has commonly been ignored. Undeniably, in spite of the everrising ceiling of tests, we don't seem that much smarter than our ancestors.
Actually, a deterioration in I.Q. scores ${ }^{42}$ as well as an important decrease in intellectual capacity ${ }^{43}$ has been noticed in the impoverishment of vocabulary, hue differentiation, reflexes, memory, and attention span. That slow drop in intelligence, by nearly three points per decade ${ }^{264-}$ ${ }^{265}$, is worrisome, as it causes an alteration of the distribution, primarily at its extremities. To illustrate ${ }^{296}$, a drop of 3 points can be estimated to lower the proportion of people with a score above 120 by over $30 \%$ and that of gifted people by roughly $40 \%$; at the same time scores under 80 increase by about $40 \%$.

## People's Issues

An I.Q. test-taker is classically given a score or a range (sometimes a percentile ${ }^{29}$ ) by a psychometrician. Such a test can be sought, out of curiosity, or to ascertain that everything is normal in the cognitive area, but if one is looking to establish the presence of giftedness ${ }^{266}$ (I.Q. in the top $2 \%$ of a given population), the result provided merely helps the practitioner who also requires a psychological evaluation to establish such a diagnosis ${ }^{0}$.

Why is it so? Most importantly because one's state of mind impacts psychometric results!
Under most circumstances, in spite of life ups and downs, the intelligence of adults ${ }^{78}$ remains stable. One's I.Q. level as measured by tests, however, is bound to vary, fluctuating according to one's emotional balance ${ }^{267}$.
A test score can be rendered inaccurate because of personal impairment, may it be, fleeting or permanent:

- I.Q. results fluctuate according to one's level of confidence ${ }^{271}$, health, anxiety ${ }^{267}$, or energy level during the test. Therefore, someone's I.Q. could amount to 145 on a good day, but only to 120 on a bad day, or even as low as 100 on an even worse day.
- Dyslexia ${ }^{30}$, dyscalculia ${ }^{31}$, depression ${ }^{35-104-267}$, social anxiety disorder ${ }^{32}$, bilingualism $^{33}$, and $\mathrm{ADHD}^{34}$ add extra hurdles to a correct I.Q. measurement:
- Dyslexia ${ }^{269}$, dyscalculia ${ }^{270}$ and ADHD $^{268}$ increase reflection time.
- Social anxiety ${ }^{347}$ makes it harder to concentrate when one is being watched.
-Depression impairs ${ }^{104}$ memory, attention span, cognitive processing, and decision-making abilities thus, reduces scores significantly. Since giftedness frequently entails existential depression ${ }^{105}$, it also goes hand in hand with unreliability in I.Q. scores.
Being bilingual reduces the quantity of words one knows in either language (compared to monolingual speakers, on average ${ }^{272}$ ), whereas total vocabulary in both languages is larger. As a
result, test-measured verbal I.Q., typically evaluated in only one language, gets artificially truncated.

Therefore, although having become fluent, as an adult, in at least one additional language, compared to your peers in the same cultural background (for example, being an American who speaks Spanish fluently if you're not of Hispanic decent) is a sign of high intelligence ${ }^{44-45-46}$, your verbal subtest score gets artificially reduced.

### 1.3.2 Why use an I.Q. scale at all?

Why bother employing an I.Q. scale ${ }^{10}$, at all, if I.Q. tests are somewhat unreliable?
In spite of the aforementioned flaws, I.Q. tests allow the assessment of human cognitive abilities, at a specific time, and under well-defined circumstances, even though emotional and psychological impairments remain unheeded.

Besides, the Intelligence Quotient is a well-known concept that has been capturing people's imagination. Who hasn't heard of the I.Q. score of various scientists and authors, rumored to be through the roof, even if its consequences on aptitude or psychology remain unclear? Einstein's I.Q. score of $160^{47}$ is quite famous, although it appears to be a meaningless oversimplification of what his intelligence, in physics, represented.
Moreover, it's an easy way to discern the degree of intelligence involved, as well as its frequency.
The Intelligence Quotient theory, by itself, is already pretty comprehensive. Contrary to what the uninitiated may think, the concept of I.Q. is not in competition with "Emotional Intelligence" ${ }^{49-50}$ (also known as E.Q.) or with the "Theory of Multiple Intelligences" ${ }^{51-52}$. Even if I.Q. tests do not directly measure social intelligence, creativity, imagination, learning ability or long-term memory, these notions are all highly positively correlated to " g "53-54-55.

In a nutshell, the Intelligence Quotient theory works, scientifically speaking, even if its implementation is not entirely trustworthy because of the human factor. The integration of psychology, in my opinion, is paramount to avoid misestimating the subject's level.
My goal, in this book, is to do away with any kind of emotional, learning, health issues which weaken the assessment's precision and to observe the direct consequences of " g " ${ }^{18}$, characterized by our inner emotional mechanisms and noticeable behaviors.
This approach offers a good approximation of the extent of one's intelligence throughout one's life, in a global, holistic way, regardless of ups and downs, impairments, subtests ceilings, and lack of access to a sometimes pricey, psychometric test.

## 2. Variations in I.Q. Scores


#### Abstract

Many studies about identical twins suggest intelligence is largely genetic ${ }^{48-86}$ the rest being attributed to environmental ${ }^{67}$ (food quality, pollution), social ${ }^{67}$ (lack of brain stimulation) or even medical reasons ${ }^{67-68}$.


### 2.1 Genetics: Variations in Brain Structure

The differences in I.Q. levels essentially originate in the brain structure ${ }^{56}$. As seen earlier, the tests evaluate " $g$ ", the general fluid intelligence ${ }^{18}$ : problem-solving and learning skills. Because half of " $g$ " relates to how rapidly the nervous influx is propagated through the brain ${ }^{69}$ via its neurons, the more efficient the brain is:

1 - the lower the dendrite density ${ }^{60}$, permitting a greater brain plasticity.
2- the higher the density of Glial Cells ${ }^{58}$, for a more direct transfer of information.
3- the higher the myelination of the axons ${ }^{57}$, increasing the swiftness of neurological signals.
Similarly, the greater the brain performance is:
1- the higher the curvature of the Corpus Callosum ${ }^{58}$, determining the efficiency with which both hemispheres interact.
2- the lower the need for glucose consumption ${ }^{59}$, decreasing fatigue resulting from the same task.

Besides, as intelligence rises, the electrical signal speed in the brain increases. When this signal is strong enough, instead of naturally fading rapidly, it eventually reaches brain areas unsolicited by the current task. This situation known as low latent inhibition ${ }^{61-62-63}$ increases creativity in people with elevated I.Q. scores.

### 2.2 Environment, Society and Healthcare: Variations in Nurture

Other differences in intelligence stem from various other issues. A child growing up in a low intellectually stimulating milieu or with poor schooling ${ }^{67}$ will undoubtedly have difficulties evolving harmoniously and will lose potential brain power.

Malnutrition ${ }^{67}$, disease and lack of access to medical care ${ }^{68}$ are also factors leading to a decrease in potential intelligence.
At the same time, head injury (permanently) or depression ${ }^{70}$ (transiently) can alter proper brain functioning and artificially lower an I.Q. score.

### 2.3 I.Q. Scores Discrepancy

Since intelligence is both impacted by nature and nurture, it isn't uniformly scattered throughout the world, but rather, typically exists in clusters of similar levels ${ }^{71-72-73}$ in countries, social and professional groups, families etc...
However, this is a controversial ${ }^{27}$ topic as many claim that I.Q. tests, which were originally designed for flourishing countries of the Western world, are not a good measure of intelligence for certain cultures. Furthermore, in no way do I subscribe to the idea of entire races being less intelligent than others.

On the other hand, being aware of these discrepancies permits the reader, living outside of the USA, to use, with some accuracy, the I.Q. tests aimed at US residents provided at the end of this book.

### 2.3.1 Among Countries

According to some studies, the world mean I.Q. score, on the Wechsler Scale, is around $85^{73}$, with countries ranging from the high 50 's to almost ${ }^{72-73} 110$. Since different countries have different average I.Q. scores, in order to compare them, the test scores have to be adjusted to the Greenwich I.Q. standard ${ }^{73}$ which mean is set at 100 .
On the next page, here are a few examples of mean I.Q. scores by country in 2020-2021 ${ }^{72}$ :

| Country | Mean IQ score of population |
| :---: | :---: |
| Singapore | 108 |
| Hong-Kong | 108 |
| South-Korea | 106 |
| Japan | 105 |
| China | 104 |
| Switzerland | 102 |
| The Netherlands | 102 |
| Canada | 101 |
| Iceland | 101 |
| The UK | 100 |
| New Zealand | 100 |
| Belgium | 100 |
| Germany | 100 |
| Austria | 100 |
| Australia | 99 |
| Norway | 99 |
| Sweden | 99 |
| Denmark | 99 |
| Estonia | 99 |
| USA | 98 |
| France | 98 |
| Hungary | 98 |
| Italy | 97 |
| Spain | 97 |
| Russia | 96 |
| Portugal | 95 |
| Vietnam | 94 |
| Ireland | 94 |
| Greece | 92 |
| Argentina | 90 |
| Chile | 89 |
| Costa Rica | 86 |
| Philipines | 86 |
| Mexico | 86 |
| Cuba | 84 |
| Indonesia | 84 |
| Brazil | 83 |
| Peru | 82 |
| India | 81 |
| Nepal | 77 |

### 2.3.2 Among People

The difference in I.Q. ranks between individuals is far greater; scores range from well under 50, for people with cognitive disabilities, to a little above ${ }^{74} 175$. I.Q. scores beyond 200 are either dubious ${ }^{273-274}$ or calculated from a totally different scale (the Cattell scale or ratio scales ${ }^{76-77}$ for instance).
However, even if intelligence is largely innate ${ }^{48-86}$, not all gifted people (I.Q. above 130) originate from the union of two gifted individuals ${ }^{85-86}$. This highlights the small, but objective influence of one's environment on one's intelligence, especially during the first years of life.
After a brief adjustment during the teenage years ${ }^{78}$, intelligence remains pretty constant throughout adult life. Fluid intelligence (reasoning skills unrelated to knowledge) seems to plateau at approximately 30 years of age ${ }^{79}$ only to decrease steadily with agedness while crystallized intelligence (knowledge related aptitudes) increases slowly ${ }^{79}$.

Examples of elevated I.Q. scores associated to various illustrious names; (while some have been. officially evaluated others are merely estimates based on on accomplishmentents):...

Albert Einstein ${ }^{47}$ : From 160 to 190. Actually, this must be a misleading oversimplification of the physicist's intelligence for, suffering from high-functioning autism ${ }^{47}$ (which results in unbalanced intelligence: very high in one area and average or low in others ${ }^{80}$ ), the subtype of intelligence that permitted him to create the Theory of Relativity was, in all likelihood, closer to 190 or 200 on the Wechsler Scale.

Sheldon Cooper: ${ }^{187}$. The beloved character's I.Q. score, in "The Big Bang Theory" ${ }^{\text {"66 }}$, is undoubtedly calculated on the Wechsler Scale which places him in the profoundly gifted category. On the show Leonard is presumed to have scored 173, Raj 170, Amy 180, Bernadette 160, Howard 150, and Penny 110. It is needless to point out the imperfect portrayal of those characters, many not even being within communication range ${ }^{81-83}$ ( 15 to 30 points) of each other.
Garry Kasparov ${ }^{39}$ : over 190. This score is rumored to be accurate for the chess master.
Terence Tao ${ }^{39}$ : From 210 to 230 . The mathematician's I.Q. score is a ratio assessment taken during his childhood. On the Wechsler Scale, he would score much lower, but definitely in the profoundly gifted range (above 175).
William Sidis ${ }^{39}$ : From 200 to 300. The man portrayed in "Good Will Hunting" boasts an I.Q. level certainly south of 200, on the Wechsler Scale, for few official tests reach beyond 200 and none show accuracy at that level.

Leonardo Da Vinci ${ }^{39}$ : From 180 to 220. The famous painter and inventor's I.Q. score was definitely in the profoundly gifted range.
Marilyn Vos Savant ${ }^{39}: 228$. The columnist's I.Q. level was calculated from the Stanford-Binet test, it could actually be the highest ever recorded, but was deemed unreliable and taken down by the "Guinness Book of Records".

Evangelos Katsioulis ${ }^{39}$ : 198. A Greek psychiatrist boasting the highest officially tested I.Q. score in the world.

Isaac Newton ${ }^{39}$ : From 190 to 200. The physicist's alleged score also falls in the profoundly gifted classification.
Marie Curie ${ }^{39}$ : From 180 to 200. The first woman to win the Nobel prize and the first person to win it twice.
William Shakespeare ${ }^{39}: 210$. The English playwright and actor's I.Q. score is believed to be off the charts.

### 2.4. The Homogeneity of Intelligence Levels in Social Groups

Social circles are very homogeneous along I.Q. lines. In a group of friends, or between spouses, I.Q. score disparity must not be greater than 20 points ${ }^{82}$, from one individual to the next, for the group to be harmonious. This law applies to sentimental, but also, to professional groupings. Failure to comply has dire consequences on long-term support and cooperation.
Similarly, successful leaders need I.Q. scores closer than 20 points ${ }^{83}$ from those of their audience, lest their ideas fail to be followed, due to a lack of understanding. Because the average person's score is 100 , leaders display an average I.Q. score of 120 . Anyone above that point won't be fully comprehended and will confuse his or her target audience. As a result, for instance, typical college entrants (averaging an I.Q. score of 115) will not be taught well by someone whose level is superior to 135 .

Besides, for any meaningful exchange to take place, between two persons, the divergence in I.Q. scores must remain under 30 points according to Grady Towers ${ }^{81}$ or, I think more accurately, 15 points as stated by Simonton ${ }^{83}$; this is known as the "communication range". Above that threshold, people communicate within a set of rules that is alien to each other. They don't interact on the same bases, aren't interested in the same topics, don't share the same values and frames of reference; in short, they don't understand each other.
The "optimal social adjustment I.Q. ${ }^{87}$ bracket" which favors the harmonious development of successful individuals, socially and professionally, lies between 120 and 140. Under that range, people won't show remarkably high rate of professional success. Above that range, people will have difficulty adapting to regular social environments and will undergo some type of rejection.

According to Ferguson, every hierarchy is composed of several types of individuals: The Followers ${ }^{88}$ (employees with an I.Q. score between 98 and 125) who are being directed by The Leaders ${ }^{88}$ (112-138) who are being guided by The Advisors ${ }^{88}$ (125-155). As outliers, we find The Clueless ${ }^{88}$ (I.Q. score under 98) and The Excluded ${ }^{88}$ (I.Q. score above 150) who are respectively not bright enough to really follow instructions or too bright to be convincing and, therefore, regarded as trusted leaders.

Thus, the probability of landing and remaining in an intellectual occupation such as physician, lawyer, college teacher, manager, scientist, engineer increases, up to an I.Q. score of $133^{88}$, then declines by a third on the $140^{88}$ mark and likewise, sinks by $97 \%$ above a score of $150^{88}$. Consequently, intellectual professions sport an average score of $125^{88}$ and $95 \%{ }^{88}$ of people, in an intellectual elite occupation, boast a level ranging from 112 to 138 .

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