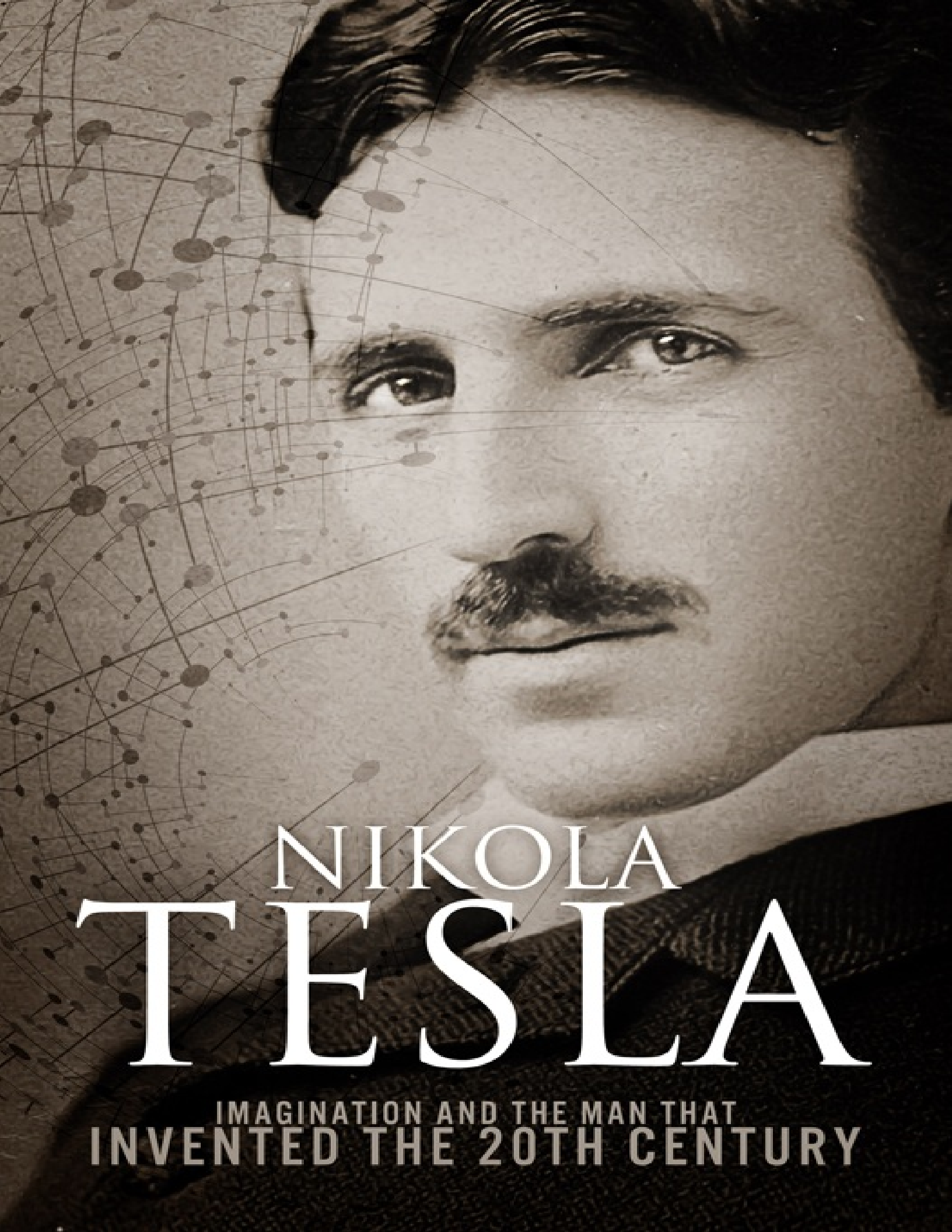
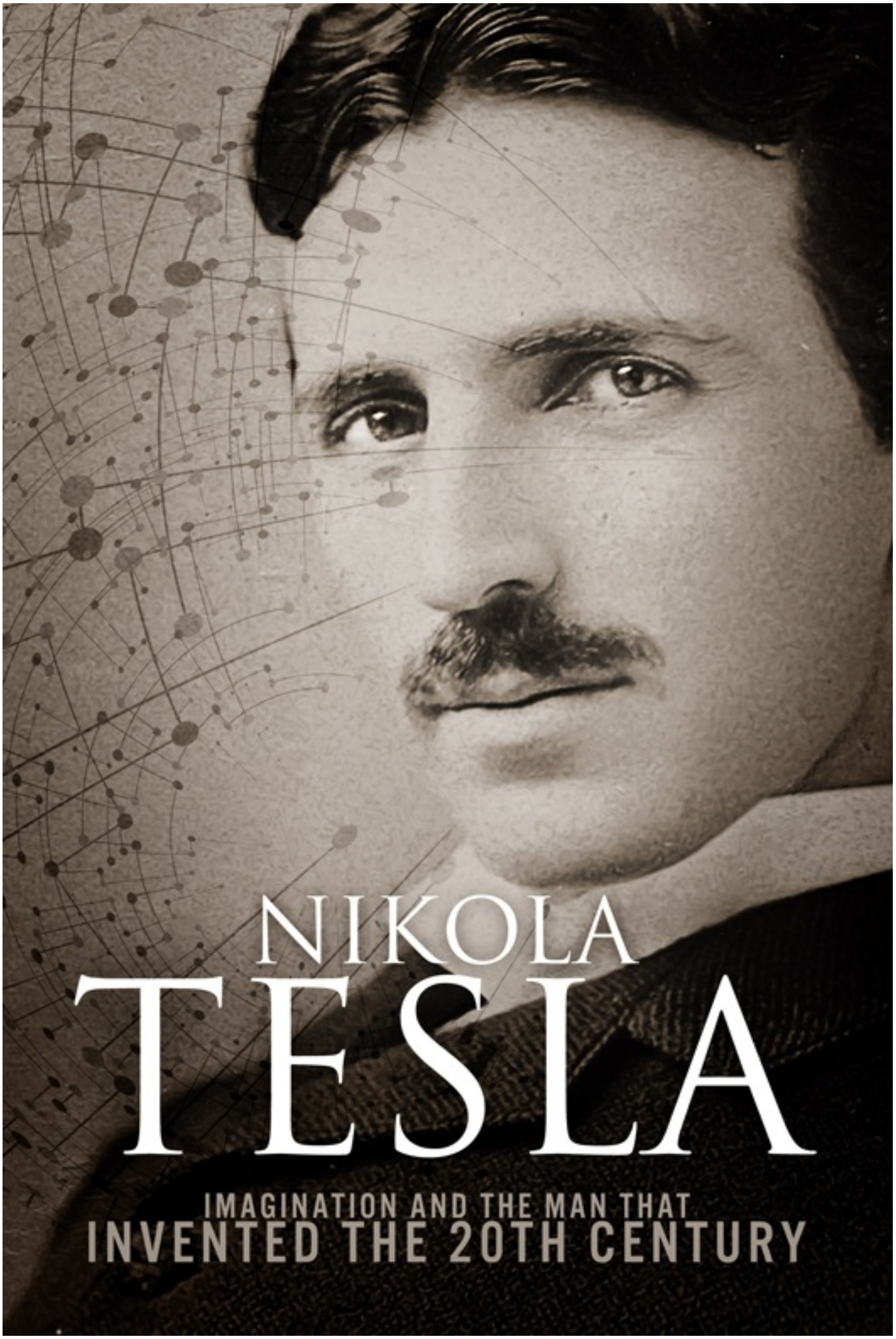


NIKOLA TESLA

IMAGINATION AND THE MAN THAT INVENTED THE 20TH CENTURY


NIKOLA
TESLA
IMAGINATION AND THE MAN THAT
INVENTED THE 20TH CENTURY

Nikola Tesla

Imagination and the Man That Invented the 20th Century

Written by Sean Patrick

First Edition

The Great Mystery of Genius

"Thousands of geniuses live and die undiscovered—either by themselves or by others."

-Mark Twain

If I could write one sentence that would magically increase your IQ by thirty points, would you be interested in reading that sentence?

Probably. But why? What would be in it for you? Do you think it would help you make more money? Make a name for yourself? Find love, happiness, or fulfillment?

I've asked many people these questions and their answers are invariable. "Of course it would." The *cultural* correlation is undeniable: we've been indoctrinated to believe that the higher the IQ, the more likely one is to succeed in life. Hence, we assume that the scientists that win Nobel Prizes, the businesspeople that go from rags to millions, the authors that write runaway bestsellers, register in the highest ranges of IQ simply because they're enjoying sweet successes.

Well, a tremendous amount of research has been done into the *scientific* correlation between IQ and real-life success, and a very different picture has emerged.

IQ and success are related...to a point. Sure, someone with an IQ of 150 (a "genius" by all normal standards) is going to do much better in life than someone with an IQ of 80 (nearly "mentally disabled"). Similarly, a person with an IQ of 130 ("near genius") has a significant upper hand in life when compared to a person with an IQ of 100 ("average").

But here's the catch: the relation between IQ and success follows the law of diminishing returns. That is, when you compare two people of relatively high IQs, you can no longer predict success by IQ alone. A scientist with an IQ of 130 is just as likely to rise to the top of his discipline as one with an IQ of 180.

Dr. Liam Hudson, a British psychologist that headed up Cambridge's Research Unit of Intellectual Development in the sixties, compared IQ to basketball. If you're five foot five, your prospects of becoming even an NBA bench warmer are slim-to-none. The fact is if you're less than six feet tall, you can pretty much forget about your dreams to challenge King James in his court.

Statistical data shows us that you have to be at least seventy-two inches tall to be allowed on the ride, and each inch you push over that is probably better for you. There comes a point, however, when height just doesn't matter much anymore. Just because someone is seven feet tall doesn't mean he's a better player than someone who's six foot six (Michael Jordan's height). The point is you only have to be tall *enough* to have a shot at the pros.

The same pattern is true of intelligence and success in life. You only have to be smart *enough* to fulfill the intellectual requirements for success. History's greatest achievers—practical, savvy people that did big things and changed the world—are heralded as the greatest geniuses to ever have walked the earth, but while many of them had remarkably high IQs, many others were just smart enough.

If we can't explain their success in terms of IQ alone, what else did they possess that allowed them to rise to such heights?

Most people would answer along the lines of "extraordinary inherent talent." And they would be

wrong.

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Call in the inspired bard, Demodocus.

God has given the man the gift of song.

That's one of the many god-given gifts of characters in the *Odyssey*. We've learned much since it was written—we've decoded human DNA and discovered our place in the universe—but we still marvel at the abilities of geniuses in the same way as the ancient Greeks did.

Whether we listen to a sonata of Beethoven's, watch highlight reels of Michael Jordan, or learn a law of Newton's, we view extraordinary human skills as gifts granted by unknown forces for unknown reasons. Such an explanation is convenient, but is it correct?

For the last two centuries, behavioral scientists have studied that question through focused research on great performers of all types: business managers, chess players, swimmers, surgeons, jet pilots, violinists, salespeople, writers, and many others. Their findings, numbering in the hundreds, have led to conclusions that fly straight in the teeth of what "everybody knows" about ability.

The studies conclusively disproved the notion that great performance stems primarily from a natural "gift" or talent. While some people display innate talents for certain activities early on, amazingly average people have become champions in all manner of endeavors. Many such top performers overcame their average—or even below-average—intellects and nonexistent aptitudes to develop outstanding abilities in disciplines such as chess, music, business, and medicine.

Examples of such remarkable transformations abound throughout history. Henry Ford failed in business several times and was flat broke five times before he founded the Ford Motor Company. In his youth, Thomas Edison's teachers told him he was "too stupid to learn anything." Beethoven was so awkward on the violin that his teachers believed him hopeless as a composer.

The world of sports reveals similar findings. Many athletes viewed as superhuman in their abilities were found to have little or no inherent advantage over their peers when they first began their journeys to greatness. Michael Jordan didn't make his sophomore team because he was deemed too short and average to play at that level. Stan Smith, a world-class tennis player and winner of Wimbledon, the U.S. Open, and eight Davis cups, was once rejected for the lowly position of a ball boy because the event organizers felt he was too clumsy and uncoordinated.

How do we explain such unintuitive findings?

While many theories were put forth, there was one common factor that researchers recognized in all great performers: they practiced so hard and intensely that it hurt.

Ted Williams, a baseball legend considered the most "gifted" hitter of his time, was believed to have natural abilities far beyond ordinary men, including eagle-like vision, extraordinary hand-eye coordination, and uncanny hitting instincts. Williams later said that such stories were all "a lot of bull." He had a much better explanation for his superior skills.

Williams began his path to greatness at the age of seven, when he decided to dedicate his entire life to one singular task: hitting a baseball as perfectly as possible. Starting at that young age, Williams spent

every free minute he had at San Diego's old North Park field hitting balls, every day, year after year after year. His childhood friends recall finding him on that field smashing balls with the outer shells completely beaten off, with a splintered bat, and with blistered, bleeding hands. He would spend his lunch money to hire other kids to shag his balls so he could hit as many as possible every day. When the city turned off the field's lights, he would go home and swing a rolled-up newspaper in the mirror until he went to bed.

This obsession continued throughout William's entire professional career, and it's no surprise that he excelled because of it. For "The Kid," as he was known, greatness was a long, grueling process—not a gift from the beyond (a claim that he found insulting).

Studies of people with extraordinary abilities, like Ted Williams, have given rise to what Swedish psychologist Dr. K Anders Ericsson called the "10,000 hour" rule. The rule's premise is that, regardless of whether one has an innate aptitude for an activity or not, mastery of it takes around ten thousand hours of focused, intentional practice. Analyzing the lives of geniuses in a wide range of intellectual, artistic, and athletic pursuits confirms this concept. From Mozart to Bobby Fischer to Bill Gates to the Beatles, their diverse journeys from nothing toward excellence in their respective fields shared a common denominator: the accumulation of ten thousand hours of unwavering "exercise" of their crafts.

To put that number in perspective, if you practiced an activity four hours per day, seven days per week, it would take you about *seven* years to reach ten thousand hours. That kind of dedication can only come from the heart—a true love and passion for the activity.

So, what does all this tell us? First, that the seed of greatness exists in every human being. Whether it sprouts or not is our choice. Second, that there are no such things as natural-born under- or overachievers—there are simply people that tap into their true potentials and people that don't. What is generally recognized as "great talent" is, in almost all cases, nothing more than the outward manifestations of an unwavering dedication to a process.

Thus, the advice of "work toward your ten thousand hours" sounds completely reasonable. Right? But there's a problem. There are millions of people that work incredibly hard, yet have little success to show for it. Is ten thousand hours too simple of a prescription for greatness?

Yes. It overlooks another aspect of great achievement that cannot be ignored: *opportunities*—conditions that often appear to be plain old dumb luck.

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As Malcolm Gladwell explains in *Outliers*, in many ways, the opportunities presented to one are just as important to success as one's own inherent talents and willingness to put in thousands of hours of work. For instance, if your dream is to become a professional athlete, it's quite possible that you won't be able to work hard enough to overcome a most devious obstacle: your birthday. How could that possibly be a hurdle?

Easy. Most sports enforce age cut-offs—that is, the ages that determine whether you can play another year in your current age bracket as a "senior," or whether you have to move up and be a "freshman" in the next.

In Canadian junior hockey leagues, the age cutoff was formally January 1 (it's now December 31). The closer your birthday was to January 2, the better. Why? Well, let's say you were playing in the Bantam category, which is for children aged 13 – 14. If your birthday was in December, you were going to get two

years of play at this level. You were going to turn fifteen and have to move immediately into the next category, Midget (which is for kids aged 15 – 16). If your birthday was January 2, however, you'd get an entire additional year to play in Bantam (and every other age group) because when the ages were checked on January 1, you were still fourteen years old.

An extra year of play against players younger than you is a *huge* advantage. Your body becomes bigger, stronger, and faster every day, giving you an opportunity to truly stand out from your birthday-handicapped peers. This extra developmental time predisposes you for selection onto more elite teams, which in turn leads to more ice time and better coaching, which advances your abilities even further.

Sociologists call this phenomenon an "accumulative advantage." For the elite Canadian junior hockey leagues, the result of this advantage was that for many years, the distribution of birth dates for the top performing kids was heavily weighted toward "first-quarter" babies—kids born between January and March.

Whether we're talking birthdays in sports, or the fact that Bill Gates just happened to go to a high school that housed one of the most advanced computers of the time—a computer that most colleges didn't even have—we can easily see that being in the right place (physical, educational, societal, or otherwise) at the right time can influence our destinies as much as anything else.

Now, that doesn't mean our fates are written in the stars. We can wholly control our dedication to thousands of hours of study, training and work. And grasping opportunities is equally controllable. Sure, we may not be built for the NFL or Kentucky Derby, but we're surrounded by opportunities every day, everywhere we go. There is no shortage of problems to be solved, needs and desires to be fulfilled, and innovative ways to help others.

But there's a catch. Most opportunities never announce themselves with trumpets and confetti. They're easily missed, mistaken, or squandered. They can be scary. And they never come with a 110% money-back guarantee. They're often nothing more than chances to improve on something other people are already doing.

Opportunities are whispers, not foghorns.

If we can't hear their soft rhythms—if we are too busy rushing about, waiting for thunderclaps of revelation, inspiration, and certainty—or if we can spot them but can't nurture them into real advantages, then we might as well be blind to them.

This realization points us to the real heart and mystery of greatness. Just knowing that great achievers work very hard and take advantage of opportunities isn't enough. Why do some people recognize, appreciate, and pursue opportunities with passion and determination, whereas others don't? Why are some people willing to push through hell and high water to win, whereas others quit early and easily? Are there practical answers to these questions, or are they unsolvable enigmas of human psychology?

Well, I believe there are very practical answers to what makes a genius tick. I believe there are principles that we can isolate and use to better our own lives. I believe that genius is a *path* that we can all take and derive much benefit, happiness, fulfillment, and success from...not a genetic windfall or divine gift. Ultimately, this is the *path* to greatness.

Not sure if you buy into that? Well, I wouldn't either if I didn't know about Dr. Alfred Barrios.

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Psychologist Dr. Alfred Barrios conducted research on the nature of genius in the seventies. He set out to answer the same basic question I posed just a page ago: why do some people rise to greatness whereas others don't?

To look for an answer, he decided to analyze the lives of many of history's greatest geniuses. Were there patterns of circumstances, events, behaviors, attitudes, or ideas that could account for their success? Did the chronicles of their lives collectively hold the secrets to their greatness? He was going to find out.

He first noted and categorized a long list of factors outside of the geniuses' control. Things like lineage, birthright, geography, genetics, education, familial ties, upbringing, and unexpected windfalls. The more data he accumulated and analyzed along this line, however, the more it looked like a dead end. The backgrounds of our species' greatest thinkers and achievers appeared infinitely varied. If there were patterns among the data, he couldn't see them.

Barrios was undeterred and continued to study. Eventually, a different kind of common denominator emerged, one that he found *within* each of the people he studied. Barrios discovered that his subjects had each developed and routinely displayed a combination of very specific characteristics throughout their lives, and not just mildly but conspicuously.

This character-driven idea fascinated Barrios. It suggested that genius is much more than high intelligence, innate talent, extraordinary work ethic, or uncanny luck, but rather a composite manifestation; a synthesis of very specific types of worldviews and behaviors. The more he looked at data through this lens, the more things started to make sense.

Barrios then wondered if anyone could operate at a genius level—and achieve genius-level greatness—simply by learning and adopting the same educated views and disciplined behaviors that so repeatedly characterized history's greatest achievers.

By the end of his research, Barrios had pieced together his "genius code"—a profound insight into what really spawns greatness. He also concluded that we could all indeed use his genius code as a roadmap to walk in the footsteps of history's brightest and boldest, thereby learning to operate at a genius level.

An attractive concept, no doubt, but is it true?

In this book, we will delve into a single characteristic of Barrios' code: *imagination*. We will look at how it defined one of history's greatest geniuses, Nikola Tesla, and how we can further develop it in ourselves.

My proclamation is that while Barrios' research may not be the end-all on the subject, it certainly illuminates the path to greatness via a unique, accessible, and practical decoding of genius.

This immediately involves us in a bigger picture question, too—one that's deeply penetrating and personal: why do we desire to heighten our genius and pursue the path of greatness?

We all face a fundamental choice in our lives. Do we take the path prescribed by our "now you're supposed to" society, or do we take our own path to toward the life we feel we ought to be living? Do we choose our life's work based on the U.S. Department of Labor's list of highest-paying jobs, or do we follow our bliss? Do we heed the call to conformity, or the call to adventure?

Every day we see how people have answered these questions, whether consciously or otherwise. We're constantly confronted with the lazy, the apathetic, the immoral, the indifferent, the irresponsible,

and the disconnected—the signs of a decaying culture.

"What does it all mean?" many wonder while chasing purposes they're told are worthwhile, but which feel empty. "What is the purpose of this life?" humans have wondered for millennia, contemplating how insignificant we are in the great cosmic symphony.

Well, as the preeminent mythologist Joseph Campbell said, deep down inside, we don't seek the meaning of life, but the experience of being alive. And that's what the nature of genius is ultimately about.

It's about how we can empower ourselves to bring true meaning to our lives and the lives of others in ways most people would consider impossible. It's about rising above a life of, as Thoreau said, "quiet desperation" that ends with our songs still in our hearts, and experience the rapture of truly living. It's about saying yes to our adventures.

We rely on geniuses to entertain us, educate us, lead us, and show us all what our species is capable of. We rely on geniuses to give us smart phones, electric cars, cures for diseases, social networking sites, sublime art, world-class food, and, indeed, the very fabric of our culture.

If you've ever dreamed of playing a hand in the development of humankind, or if you just have a burning desire to improve one small aspect of it, then you have an adventure waiting.

Will you take it?

This book is your invitation.

Imagination and the Man Who Invented the 20th Century

"Facts and ideas are dead in themselves and it is the imagination that gives life to them."

-W. I. B. Beveridge

Many calls to adventure are puzzles waiting to be solved. Anyone can apply, but the price of admission is paid in imagination. As journeys unfold, new challenges arise and pressures mount. These successive tolls must too be paid in creativity and ingenuity, as they were by history's most imaginative minds.

The only way that Jason can claim his rightful place as ruler of Iolcus, Greece is by retrieving the fabled Golden Fleece from distant lands. The problem? Everyone considers the task impossible, fraught with terrifying perils certain to kill any man. Jason isn't so sure. He assembles a mighty team of warriors —the Argonauts—and builds the largest ship ever constructed. He then figures out how to successfully navigate the legendary maze of crushing rocks known as the Symplegades, yoke fire-breathing, bronze-hoofed oxen, trick a mighty army guarding the Fleece into ravaging itself to pieces, and drug a sleepless dragon into its first slumber. Four months after departing, Jason returns with the Fleece to take his throne.

It's the late 1800s. Anesthesia has just been introduced. Surgeries are on the rise, but a disturbing number of patients are dying due to infection. Joseph Lister is determined to figure out why and what can be done about it. After much research and thought, he concludes that Pasteur's controversial germ theory holds the key to the mystery. Killing germs in wounds with heat isn't an option, however—a completely new method is required. Lister surmises that there may be a chemical solution, and later that year, he reads in a newspaper that the treatment of sewage with a chemical called carbolic acid reduced the incidence of disease among the people and cattle of a nearby small English town. Lister follows the lead and, in 1865, develops a successful method of applying carbolic acid to wounds to prevent infection. He continues to work along this line and establishes antisepsis as a basic principle of surgery. Thanks to his discoveries and innovations, amputations become less frequent, deaths due to infection plummet, and new surgeries previously considered impossible are being routinely planned and executed.

Andrew Carnegie is thirteen years old and changing spools of thread in a cotton mill twelve hours per day, six days per week. Two years later, he gets a job as a telegraph messenger for $2.50 per week, and he's determined to advance through the company's ranks despite his age. He quickly learns to distinguish the different sounds of incoming telegraph signals, and then learns to translate them by ear. Within a year, he's promoted as an operator. By the time he's in his mid-twenties, he's made a small fortune through shrewd investments in railroad-related industries, and he's working to repair and re-open rail and telegraph lines vital to the Union's war efforts against the Confederacy. The war impresses upon him the importance of manufacturing to the overall success of the American economy, which informs his shift of capital and interest to ironworking. Over the next thirty years, Carnegie's innovations set the standard for cheap, efficient, and profitable mass production of steel, achievements that forge the most extensive iron and steel operations ever owned by an individual in the United States.

The philosopher Edmund Burke said "there is a boundary to men's passions when they act from feelings; but none when they are under the influence of imagination." Imagination is the life force of the genius code. This force amplifies and colors every other piece of the code, and unlocks our potential for understanding and ability. It's no coincidence that geniuses not only dare to dream of the impossible for their work, but do the same for their lives. They're audacious enough to think that they're not just an ordinary player.

Few stories better illustrate this better than the life of the father of the modern world, a man of legendary imaginative power and wonder.

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Nikola Tesla strolled through the Varosliget city park of Budapest with a friend, reciting Goethe's *Faust*, unaware that he was about to change the course of history.

The year was 1882. Only two years earlier, Edison had patented a system for electricity distribution using direct current generators, which produced a flow of electricity in one direction. Edison's breakthrough was a modern miracle despite having serious limitations. Namely, the generators had no efficient way to change the voltage of direct current circuits, so generation plants could only serve customers within a two-mile radius. Thus, it was unlikely that this form of electricity would ever be available in non-metropolitan areas.

Telsa was admiring the prismatic rays of the Hungarian sunset when a vision struck him. Following a blinding flash of light, he saw the complete workings of a motor that used a rotating magnetic field to produce an electric current that alternated its direction many times per second. He grabbed a stick and diagrammed the motor in the sand while his friend watched, unsure of what to think. After all, such a machine was theoretically impossible. In fact, seven years earlier, his professor at a college in Austria ridiculed him for suggesting that direct current generators could be modified to produce an efficient alternating current. Telsa dropped out of college a year later, but his imagination never quit.

Shortly after his Varosliget park revelation, Tesla took the first step to make it a reality: he relocated to Paris to work for the *Continental Edison Company* installing lighting systems in commercial properties. His passion, however, was designing improvements to the equipment brought overseas from Edison's ideas. If he could catch the attention of his superiors with his work, there was a chance he could present his revolutionary motor and win funding and support. Tesla's aptitude for electrical engineering was quickly noticed, and several ideas of his were implemented to improve Edison's direct current dynamos.

A year later, Tesla was in Straasbourg, France to repair a railway lighting system. He made the necessary repairs, but that wasn't all he did. He built the first prototype of his visionary alternating current motor, which worked exactly as he had conceived it in his mind. His own miracle in-hand, Tesla immediately courted investors for his radical device. One by one, wealthy businessmen that couldn't understand the device and didn't see the commercial value in it rejected him. Tesla was undaunted. He concluded that the only way he could realize his motor was to meet the world's greatest electrical engineer, Thomas Edison, directly.

There's a lesson here. In every field of human endeavor, the more visionary the work, the less likely it is to be quickly understood and embraced by lesser minds. For one reason or another, many people just "don't get it." Tesla took this in stride. As he saw it, he was offering an opportunity not only make an untold fortune, but to change the world forever. Instead of wasting time trying to convince ignorant naysayers to see the forest for the trees, Tesla chose to take his work to another extraordinary mind who would, he assumed, immediately recognize it for what it is.

Later that month, Tesla arrived at the Straasbourg railway station to travel to the harbor and board the ocean liner *Saturnia*, which would take him to New York City—to Edison. His uncles had given him some money, and his boss had given him a letter of recommendation that read, "I know two great men and you are one of them; the other is this young man."

After almost missing his train, losing all his money along with his ticket, passport, and luggage, Tesla still managed to make it aboard the steamship. A mutiny broke out during the voyage, and he got caught in the middle of a battle royale between crewmates. Tesla was arrested, pleaded innocence, and was released, and finally arrived to New York City on June 6, 1884. He had nothing but a few cents in his pocket, a few poems, calculations for a flying machine he dreamed of building one day, and the letter of recommendation. He went straight to meet his hero, Edison, and was starstruck. He briefly described the engineering work he had done for Edison's company, and talked about his plans for an alternating current motor.

Direct current was barely a decade old when Tesla shook hands with Edison. His distribution network in Manhattan was not only immensely profitable, but it was the only option if you wanted electricity. So, when Tesla explained that alternating current would be the future of electricity, Edison dismissed it as fanciful and unnecessary. Direct current was getting the job done, people liked it, and it was making Edison and his financier, J.P. Morgan, exorbitant sums of money. In Edison's eyes, anything that challenged it was seen not as a praiseworthy advancement of science and industry, but a threat.

Despite his monopolistic perspective, Edison liked Tesla and hired him on the spot to work with his electrical engineers. Tesla's work began with simple tasks such as repairing lighting systems, but within several months, he was one of Edison's most valuable engineers, and was solving some of the company's most difficult problems. Edison referred to him as a "damn good man."

In 1885, Tesla informed Edison that he could greatly improve his direct current generators by redesigning key elements. Edison thought it impossible and promised Tesla $50,000 if he could deliver on his claims. Tesla worked tirelessly for the better part of a year to improve the generators, installing parts of his own design. Once completed, his generators were a vast improvement over Edison's. They were far more efficient and durable, and thus far more profitable. Edison was thoroughly impressed, but when Tesla asked to be paid, Edison laughed and claimed he was only joking about the reward.

"Tesla, you don't understand our American humor," he said. Instead, Edison offered Tesla a raise of $10 more per week, to be added to his current salary of $18 per week. Tesla was disgusted and immediately resigned. This was the beginning of a lifelong feud between these two great inventors—one that Edison would later lament as his "greatest mistake."

Betrayed by men he trusted, Tesla found himself unemployed and in desperate need of work to survive. Ironically, he took a job as a ditch digger for an Edison company, and was paid $2 per day. He described this time as one of "terrible headaches and bitter tears," a dark period so grim that he began to question the value of his education and knowledge. But despite his heartbreak, he continued to expand on his designs for an alternating current system of generators, motors, and transformers, but lacked the money to build prototypes and apply for patents.

Word slowly spread among Manhattan's elite that a man of incomparable genius was digging ditches to survive. Sensing an opportunity, a band of wealthy investors eventually approached Tesla to develop an improved system of arc lighting. Although it wasn't the ideal opportunity for Telsa, it beat shoveling dirt. Plus, the group was willing to finance the Tesla Electric Company, so Tesla agreed. As the proud owner of a new company, he immersed himself in the venture and developed a unique arc lamp of beautiful design and efficiency.

Once the company became profitable, Tesla realized that he had been swindled. The vast majority of the earnings were going to the investors, and when he tried to interest them in financing his alternating current motor, they not only rejected his ideas but also ejected him from the company. Tesla was again

dejected, unemployed, and broke. But his luck was about to change.

Two men approached Tesla—Alfred Brown, director of Western Union, and Charles Peck, a New York City attorney—in 1887 to learn more about his alternating current theories and designs. Tesla passionately described how the entire system would work, from generation to transmission. The men were impressed and agreed to invest in the project. They set up Telsa with a small laboratory close to Edison's office, where he quickly developed all the necessary components for the system.

"The motors I built there," Tesla later said, "were exactly as I imagined them. I made no attempt to improve the design, but merely reproduced the pictures as they appeared to my vision and the operation was always as expected."

In November 1887, Tesla filed for seven U.S. Patents for his inventions, which were so original that they were issued without challenge. These patents comprised a complete system of generators, transformers, transmission lines, motors, and lighting. They would become the most valuable patents since the telephone. In accordance with their agreement, Tesla split the ownership of the patents on a fifty-fifty basis with his investors.

Tesla had won the battle to produce his revolutionary alternating current motors, but the war was far from over.

Word of the extraordinary patents reached the academic world. Tesla was soon invited to lecture before the American Institute of Electrical Engineers. His presentations were lauded as visionary, breakthrough, and incredibly practical. Engineers around the world were abuzz, and this caught the attention of business magnate George Westinghouse, the inventor of railroad air brakes. He had a dream of providing electricity throughout the entire United States, and he believed that alternating current was the future of electrical generation and long-distance transmission.

Westinghouse visited Tesla's lab and made an offer for his patents: $25,000 in cash, $50,000 in stock in his company, and a royalty of $2.50 per horsepower of alternating current motors sold. The terms were more than acceptable—if his motors were going to be as successful as he and Westinghouse envisioned, the royalties alone would make him one of the richest men in the world.

Tesla happily accepted, spent half of his cash payment to construct a new lab, and oversaw the building and installation of alternating current systems across the country. He also immediately began research into what he termed "radiant energy." His studies led him to discover what we now know as X-rays, and how to use them to produce radiographs. He didn't make his discoveries widely known, however, which is why they would later be attributed to German physicist Willhelm Rontgen. X-rays were the first of several groundbreaking discoveries of Tesla's that would wind up misattributed to others.

Tesla was never one to chase recognition—he was after the pure thrill of discovery and creation. His imagination was a factory with unlimited resources, and the world an exciting playground with unlimited possibilities. He was excited to see men like Rontgen pioneer new fields of understanding, and was happy that his work contributed to the rise of other great men.

With Tesla's electrical revolution poised to redefine the world of industrial development, Edison and Morgan launched a full-scale propaganda assault against alternating current. Edison knew that direct current would have to stamp out alternating current to survive. More personally, he was heavily invested both financially and emotionally in his direct current network of generators and distribution lines.

Edison declared publicly that alternating current delivered to a home would kill a customer within six months. Leaflets about the dangers of alternating current were distributed. Lobbying efforts were made in New York to limit levels of electricity to 800 volts “as a matter of public safety,” which would conveniently make long-distance alternating current transmission impossible.

Edison’s efforts then took a turn for the grisly. He began holding weekend demonstrations of the hazards of Tesla’s work by electrocuting animals found roaming the streets. He directed two technicians to do the same, including the execution of cattle and horses. The morbid campaign climaxed in 1890 with Edison’s involvement in the use of a Westinghouse generator to execute a convicted ax-murderer. The voltage to kill had been misjudged, leaving the criminal badly injured, and the process had to be repeated. A journalist described the event as an “awful spectacle, far worse than hanging.” The torturous method of execution was dubbed “Westinghousing,” and Morgan and Edison tried to popularize the term in the media.

Disgusted by Edison’s shameless cruelty and dishonesty, Tesla began performing regular exhibitions of his technology in his laboratory in which he lighted lamps by allowing alternating current electricity to flow through his body. Public opinion swung to and fro, unsure of whom to believe.

In this we can see the necessity of being willing to fight for your creations. Morgan and Edison weren’t satisfied with trying to ruin Tesla through capitalistic competition—they were resorting to outright depravity and dishonesty. Imagine the pressure Tesla faced: both the world’s most powerful financier—one of the last enemies you’d want—and the world’s greatest inventor were trying to draw a bead on him and pull the trigger. Most men would’ve quietly resigned, or begged for scraps, but not Tesla.

Ultimately, no amount of opposition could stifle Tesla’s creative powers. Enthused by his discoveries with X-rays, he devoted his energies to the realm of high-frequency electricity. Two decades earlier, James Clerk Maxwell had proven mathematically that light was electromagnetic radiation—electricity that was vibrating at an extremely high frequency. In 1888, Heinrich Hertz had confirmed that an electric spark emits electromagnetic waves. Tesla knew that this unexplored territory would yield astounding inventions—lights could glow brighter, energy could be transmitted more efficiently and even pass through the body harmlessly.

The first milestone in this new research was Tesla’s invention of what became known as the “Tesla coil.” It was a device that took normal sixty-cycle-per-second alternating current electricity and stepped it up to an ultra-high frequency of hundreds-of-thousands of cycles per second, and extremely high voltages. Tesla used his coil to invent the first high-efficiency, high-frequency fluorescent lamp. This discovery pales in comparison to what he uncovered next, however.

In 1891, in his New York City lab, Tesla proved that energy could be transmitted through the air by wirelessly lighting lamps. This discovery fascinated Tesla, sparking his lifelong obsession with wireless energy. He immediately envisioned a network of transmission stations that would provide free, wireless energy to not only the United States, but the world.

His coils helped him discover yet another phenomenon that would change the world: radio waves. When Tesla tuned two coils to resonate at the same frequency, he found that he could send and receive signals. He had accidentally built the first radio transmitter and made the first transmissions, methods he would patent within two years.

Tesla’s continued research in the field of ultra-high-frequency energy led him to conclude that it was only a matter of time until science would discover a veritable source of inexhaustible, free energy—a

way to attach machinery to “the very wheelwork of nature.”

While Tesla had begun envisioning the dawn of an electrical era of unimaginable sophistication, he and Westinghouse still had to prove that alternating current was a worthy heir to direct current’s throne. The “War of the Currents” was at a fever pitch. Edison’s gruesome stunts and vigorous propaganda campaign were driving wave after wave of negative press, but alternating current won an opportunity to once and for all prove its value.

The Westinghouse Corporation won a bid for illuminating the 1893 Chicago World’s Fair, which was to be the first all-electric fair in history. The fair was also to be a celebration of the 400-year anniversary of Columbus’ discovery of America. Because of the efficiency of Tesla’s inventions, Westinghouse’s proposal was half of what Edison’s newly formed General Electric company required for the job. Edison was furious that he lost the bid, and forbid the use of his light bulbs in the fair. Westinghouse would use Tesla’s fluorescent bulbs instead, and Tesla even had the idea to bend the glass tubes and thus spell the names of famous scientists. Thus, the world’s first neon signs.

On the evening of May 1, 1893, over 27 million people anxiously awaited to see the future of electricity. When President Grover Cleveland pushed a button, over 100,000 lamps, wired to 12 new thousand-horsepower alternating current generators, turned night to day. Attendees looked on in awe, dubbing the wonder the “City of Light.”

During the fair, Tesla amazed the millions of fairgoers by allowing electricity to flow through his body to illuminate light bulbs. He also used his coils to shoot large, harmless lightning bolts into the crowd, frightening and delighting the audience. He even demonstrated wireless energy by lighting lamps that had no wires.

Within a week, the entire nation was raving about alternating current as the future of electricity. The fair was a debilitating blow to Edison’s direct current, and foreshadowed the coup de grace in the War of the Currents.

Westinghouse was contacted late in 1893 by the Niagara Falls Commission, which had been charged with developing a power plant that would harness the force of the falls. The commission had solicited and rejected proposals from around the world, reviewing schemes that ranged from using pneumatic pressure to constructing bizarre devices of ropes, springs, and pulleys. Lord Kelvin, the famous British physicist, headed the commission and, after inspecting Tesla’s work, was certain that the falls needed to produce alternating current electricity.

It was a dream project for Tesla, and Westinghouse was awarded the contract. Construction began immediately, and Tesla would oversee it. Progress was slow. The project was perilous and fraught with setbacks, doubts, and financial crises, despite having the backing of opulent financiers like J.P. Morgan, Lord Rothschild, John Jacob Astor, and W.K. Vanderbilt. After five years, the venture approached completion, but the investors were less than optimistic that the unproven and expensive machines would work. Tesla, however, assured them that they would work just as they did in his mind.

A year later, the Niagara power plant was ready for operation. When the switch was thrown, all worries and anxieties melted. The first power reached Buffalo at midnight November 16, 1896, nearly 22 miles away. Plans were immediately set in motion to power all of New York City with the station. Tesla was praised worldwide as a hero, and was referred to as the “Wizard of the West.”

Morgan, who controlled Edison’s direct current patents, was now fully convinced that alternating

current had defeated Edison's work. He approached Westinghouse to strike a deal. Morgan didn't care what kind of electricity was used in the world, as long as he controlled it.

One of Morgan's managers, Charles Coffin, gloated to Westinghouse about how easily Morgan had established Edison's monopoly by bribing local politicians and installing systems that are too expensive to change. The same could be done for Westinghouse and alternating current, Coffin claimed. Westinghouse rebuffed Morgan's offers and made it clear that their styles of business weren't compatible.

Morgan retaliated with a strategy that would become one of his hallmarks. He spread rumors to Wall Street that Westinghouse's company was financially unstable, which dissuaded investors from giving Westinghouse the capital that he needed to expand the production and installation of his alternating current generators. Morgan then began an attack through stock manipulation, and moved to gain control of The Westinghouse Corporation, and thus Tesla's patents.

By the end of 1897, Westinghouse was nearly bankrupt, and it looked as though Morgan would usurp everything that Tesla and Westinghouse had built together. Westinghouse owed Tesla over $1 million in royalties, an amount that grew daily. When Westinghouse described to Tesla the desperate situation, Tesla replied with the following:

"Mr. Westinghouse, you have been my friend, you believed in me when others had no faith; you were brave enough to go ahead when others lacked courage; you supported me when even your own engineers lacked vision. ... Here is your contract, and here is my contract. I will tear them both to pieces, and you will no longer have any troubles from my royalties."

In time, these royalties would've made Tesla the world's first billionaire. Instead, they enabled Westinghouse to save his company. Tesla's selflessness was a testament not only to his generosity and goodwill, but his belief in his ability to continue to create his future. He was certain that his best work still lay ahead of him, and that he would soon invent machines that would dwarf everything that he had accomplished thus far.

This is the beauty of imagination. An unexpected dead end in one journey is merely an opportunity to set a new course for another. Losing what we have can only do us real harm when we feel we can't create it, or something equally valuable or compelling, again, and that ability resides squarely in our imagination.

"There is something within me that might be illusion as it is often case with young delighted people, but if I would be fortunate to achieve some of my ideals, it would be on the behalf of the whole of humanity," Tesla wrote.

Tesla's imagination inspired him to focus a large portion of his efforts on radio, high-frequency electricity, and radiation. He formulated principles that led to the discovery of cosmic rays, and invented an "electric igniter," or spark plug, for internal combustion engines.

In 1898, Tesla announced his latest invention: a way to remotely control machines with radio technology. Skepticism was widely expressed and quickly diffused thanks to his Madison Square Garden demonstration of remotely driving a small metal boat through an indoor pond. Many spectators believed that he was somehow controlling the boat with his mind.

The brand new use of radio technology could be used for many things, Tesla said. He envisioned one or several operators directing scores of vessels or machines through radio transmitters and receivers tuned to different frequencies. When a *New York Times* writer suggested that Tesla's discovery could be

used in war to create a remote-controlled torpedo, Tesla quickly refuted him, “You do not see there a wireless torpedo, you see there the first of a race of robots, mechanical men which will do the laborious work of the human race.”

In his new Manhattan lab, funded meagerly by friends, Tesla’s wondrous imagination led him to research the resonant frequencies of the earth. He mistakenly caused an earthquake that engulfed the surrounding city blocks, breaking windows and shaking the plaster off of the walls. He announced that he had discovered how to turn the earth into a giant tuning fork, and that, in theory, the principles could shatter the Empire State Building or even possibly cause the earth to “split open like an apple.”

Tesla then suspected that the upper atmosphere of the planet could be used to transmit electrical power great distances due to thinner, more conductive air. He decided that to fully explore these possibilities, he would need to establish a lab in relative seclusion so as to not endanger neighboring buildings and people.

With money from his friend and patent lawyer, Leonard Curtis, and magnate John Jacob Astor, Tesla and several assistants moved to Colorado Springs and began building a new experimental research station. He told local reporters that he intended to send a radio signal to Paris, but provided no details.

While his lab was under construction, Tesla studied the phenomenon of lightning, and made what he considered his most important discovery to date. He found that the earth was “literally alive with electrical vibrations,” and that the entire planet can be “thrown into vibration like a tuning fork.” Tesla was absolutely certain that this phenomenon could be used to transmit unlimited electrical power and telecommunication signals anywhere in the world with virtually no signal loss or degradation.

“When the great truth accidentally revealed and experimentally confirmed is fully recognized, that this planet, with all its appalling immensity, is to electric currents virtually no more than a small metal ball and that by this fact many possibilities, each baffling imagination and of incalculable consequence, are rendered absolutely sure of accomplishment,” he wrote.

Once completed, his new lab’s most prominent feature was a wooden tower that stood over 80 feet tall and supported a 142-foot metal mast that was capped by a large copper ball. Inside the tower was the world’s largest Tesla Coil, which was to be used to send powerful electrical surges into the earth.

To further test his theory of the conductivity of the earth, Tesla needed to create electrical effects on the scale of lightning. The result was the creation of the world’s largest man-made lightning bolts, which shot out from his tower over 100 feet into the air, and which blew out the generator of the local power company. The experiment was a resounding success for Tesla; his lightning “flashed a current around the globe,” proving that he could indeed deliver power to any point on the surface of the planet.

For the next nine months, Tesla conducted a wide variety of experiments at Colorado Springs. He wirelessly lit over 200 lamps from a distance of over 25 miles, proving that electricity could be transmitted great distances through the air. Through the transmission of ultra-low-frequency signals through the space between the surface of the earth and the ionosphere, he calculated that the resonant frequency of this area was approximately eight hertz—a discovery that was dismissed in his time but confirmed nearly 50 years later. His research indicated that if he could send a charged beam of electricity about 50 miles into the sky—into the ionosphere—that it could be carried around the world and drawn upon for power.

While working late one night, Tesla noticed that his powerful radio receiver was picking up a strange,

rhythmic signal for which he had no explanation. One thing was certain: the pulses were not of natural origin. He concluded that they must be communications from the stars. When he revealed this incident, he was widely ridiculed for suggesting such “nonsense.”

After Tesla left Colorado Springs in January 1900 to return to New York City, he wrote a sensational article for *Century Magazine* in which he eagerly described his plans for a future where we could tap the sun’s energy, control the weather with electricity, end war with machines that would make it an impossibility, wirelessly transmit power and radio signals around the entire globe, engage in interplanetary communications, and even construct robotic “automatons” that would conduct themselves independent of operators. To many readers, this vision was almost incomprehensible, but Tesla was fully convinced that it all—and more—could be accomplished, and that he knew how.

The article caught the attention of J.P. Morgan, who called on Tesla. Tesla met with Morgan and explained that he could build a “world system” of wireless communications to relay telephone signals, news, private messages, secure military communications, and even pictures to any point in the world. “When wireless is fully applied the earth will be converted into a huge brain, capable of response in every one of its parts,” Tesla promised.

Morgan offered to fund the construction of the power plant and transmission tower necessary to pursue Tesla’s fantastical claims. One would think that Tesla would balk at any offerings of Morgan’s as he clearly couldn’t be trusted—he was one of the driving forces behind the propaganda used against Tesla in the War of the Currents. And just three years earlier, Morgan maneuvered to steal Westinghouse’s company, costing Tesla his lucrative royalty agreement. Nevertheless, Tesla chose to partner with Morgan, a decision that would prove to be the biggest mistake of his life.

Tesla calculated that he would need about $1 million to construct the power station and transmission equipment. Morgan offered $150,000 instead and, in exchange, wanted 51% ownership in all of Tesla’s existing and future patents and inventions relating to both electric lighting and wireless telegraphy or telephony. Tesla accepted Morgan’s hard-fisted terms and went to work immediately.

Tesla acquired 200 acres on the cliffs of Long Island Sound and, in December 1901, began construction on the project. The most prominent feature of the installation would be a 187-foot tower capped by a 55-ton steel sphere housing a massive Tesla Coil. Beneath the tower was to be a shaft that would plunge 120 feet into the ground. Sixteen iron rods would be driven over 300 feet deeper for sending electrical currents deep into the earth. “It is necessary for the machine to get a grip of the earth, otherwise it cannot shake the earth,” Tesla said. “It has to have a grip ... so that the whole of this globe can quiver.”

Construction of the Wardenclyffe Tower, as it became known, was slow and expensive. Delays in receiving equipment plagued Tesla due to the complicated and unusual nature of his designs. In 1903, the tower structure was nearly complete, and the transmitter was operational. As testing began, residents in the area reported seeing “all sorts of lightning” flashing from the tower’s poles, filling the air with “blinding streaks of electricity which seemed to shoot off into the darkness on some mysterious errand.”

“As soon as it is completed, it will be possible for a business man in New York to dictate instructions, and have them instantly appear in type at his office in London or elsewhere,” Tesla explained in an interview. “He will be able to call up, from his desk, and talk to any telephone subscriber on the globe, without any change whatever in the existing equipment. An inexpensive instrument, not bigger than a watch, will enable its bearer to hear anywhere, on sea or land, music or song, the speech of a political leader, the address of an eminent man of science, or the sermon of an eloquent clergyman, delivered in

some other place, however distant. In the same manner any picture, character, drawing, or print can be transferred from one to another place. Millions of such instruments can be operated from but one plant of this kind. More important than all of this, however, will be the transmission of power, without wires, which will be shown on a scale large enough to carry conviction."

Last-minute design changes were required, however, necessitating more money. Tesla had already obtained a second loan from Morgan, and when those funds ran out, he again approached the financier for additional capital. In an attempt to convince the powerful Morgan to invest another large sum, Tesla explained that the tower could be used for more than transmitting radio signals—it could be used to saturate the entire globe with electricity harmless to living things so that everyone could obtain usable power by simply sticking wires in the soil.

Morgan considered Tesla's words carefully and coldly replied, "If anyone can draw on the power, where do we put the meter?" He refused Tesla's pleadings for more money, forcing Tesla to use his own funds, which he knew to be insufficient to complete the project. Undaunted, Tesla approached other potential investors, including John Jacob Astor, but nobody was interested in picking up a project abandoned, and now condemned, by the most powerful man in America. Despite his continued efforts, Tesla watched in horror as his Wardenclyffe dream began to fade.

Only months later, in 1904, the U.S. Patent Office stripped Tesla of his radio patents and awarded them to the Italian inventor Guglielmo Marconi, instead. Marconi had used radio technology pioneered by Tesla 11 years earlier to transmit the letter "s" in morse code over 2,000 miles, which gave him no claim to the patents, of course. What did give him claim, though? He had the financial backing of Morgan, Edison, and steel baron Andrew Carnegie, all of whom held sway in every level of government.

By 1905, Tesla ran out of money and was forced to lay off the Wardenclyffe workers and shut down the facility. Newspapers decried it as his "million dollar folly," to which Tesla responded, "It is a simple feat of scientific electrical engineering, only expensive ... blind, faint-hearted doubting world."

His malaise couldn't snuff his imagination and love of his work, however. He refocused his efforts on commercially viable machinery and—in 1906, on his 50th birthday—presented a 200-horsepower bladeless turbine engine to the world. He was also contracted by the Waltham Watch Company to build the world's first and only air-friction speedometer, which he patented.

Marconi was awarded a Nobel Prize in 1911 for his "achievements" in radio, and was hailed as the "father of radio." Tesla was infuriated and, in 1915, sued Marconi for infringement on his patents. He didn't have the money to take on the flush Marconi, however, and the suit was dismissed. In the same year, it was announced that Tesla and Edison were potential laureates to share the Nobel Prize of 1915. Both men refused to accept the award together, or separately if the other were to receive it first.

A year later, Tesla was forced to declare bankruptcy due to back taxes owed, inciting the media to disparage him as a penniless wizard. Humiliated and defeated, Tesla began to spend more time visiting the New York City parks, rescuing injured pigeons and nursing them back to health in his hotel room at the Hotel New Yorker, where he lived. This fueled rumors that he had lost his mind, and that nothing more would come from his extraordinary genius. They were wrong.

The *New York Herald Tribune* ran a story on October 15, 1911 called "Tesla's New Monarch of Machines." In it, Tesla proclaimed that he was working on a flying machine that "will have neither wings or propellers" or any on-board source of fuel, and that would resemble a gas stove in shape. Using the gyroscopic action of an engine that Tesla had built, and assisted by devices that he was "not prepared to

talk about," the machine would be able to "move through the air in any direction with perfect safety, higher speeds than have yet been reached, regardless of weather and oblivious of 'holes' in the air." Further, it would be able to "remain absolutely stationary in the air, even in a wind, for great length of time."

Allis Chalmers, an American manufacturing company, and the railway and lighting division of the Westinghouse Company contracted Tesla to build his flying machine, but the project never began for unknown reasons.

After the outbreak of World War I, in 1917, the U.S. government was looking for a way to detect German U-boats and put Edison in charge of finding a workable method. It was Tesla, however, that proposed the use of radio waves to detect the ships—the first description of radar. Edison rejected the idea as ludicrous, and the world had to wait nearly two decades before Emile Girardeau would develop an obstacle-locating radio device "conceived according to the principles stated by Tesla," as he put it.

Tesla spent the 1920s working as an engineering consultant, regularly finding himself at odds with his employers due to the "impractical nature" of his plans and designs. In 1928, at the age of 72, he received his last patent, "Apparatus For Aerial Transportation." This was an ingeniously designed flying machine that was a hybrid of a helicopter and airplane. The vehicle would weigh 800 pounds, ascend vertically, and then rotate its engines to fly like an airplane. This was the predecessor of what we now know as the tiltrotor, or VSTOL (Vertical Short Takeoff and Landing) plane. Unfortunately, Tesla lacked the funds to build a prototype.

TIME Magazine featured Tesla on its cover for his 75th birthday, in 1931, and Einstein praised him as "an eminent pioneer in the realm of high frequency currents." Later that year, Tesla announced that he was on the verge of discovering an entirely new source of energy, and when the press asked him to describe it, his reply was, "The idea first came upon me as a tremendous shock... I can only say at this time that it will come from an entirely new and unsuspected source."

The following year, the Pierce-Arrow automobile manufacturer and George Westinghouse commissioned Tesla to develop an electric motor to power a car. The motor he built measured a mere 40 inches long and 30 inches across, and produced about 80 horsepower. Under the hood was the engine: a small, 12-volt storage battery and two thick wires that went from the motor to the dashboard.

Tesla connected the wires to a small black box, which he had built the week before with components he bought from a local radio shop. "We now have power," he said. This mysterious device was used to rigorously test the car for eight days, reaching speeds of 90 mph. He let nobody inspect the box, and cryptically said that it taps into a "mysterious radiation which comes out of the aether," and that the energy is available in "limitless quantities." The public responded superstitiously with charges of "black magic" and alliances with sinister forces of the universe. Affronted, he took his black box back with him to New York City and spoke nothing further of it.

Meanwhile, Europe was again marching toward war. Tesla had long dreamed of a way to make war technologically impossible. On July, 11 1934, the *New York Times* ran a front-page headline that read, "TESLA, AT 78, BARES NEW 'DEATH BEAM,'" and described a new "teleforce" invention that would send "concentrated beams of particles through the free air, of such tremendous energy that they will bring down a fleet of 10,000 enemy airplanes at a distance of 250 miles..." Tesla said that war would be unfeasible when every country had his "invisible Chinese wall."

The announcement generated considerable controversy, and Tesla was widely criticized as a "mad

scientist" whose sanity was slipping. Undaunted, he approached J.P. Morgan Jr. in search of funding for a prototype, but unsurprisingly, Morgan Jr. wasn't interested. Rumors spread that Tesla had interested the Prime Minister of Great Britain, Neville Chamberlain, but this prospect evaporated when Chamberlain resigned from his position.

Frustrated by the lack of interest in his "super weapon to end all war," Tesla sent detailed schematics to a number of Allied nations, including the United States, Canada, England, France, and the Soviet Union. None were willing to make the investment required to build the device, but two years later, one stage of the plan was tested by the USSR. They sent Tesla a check for $25,000, gave little details of their experiment, and communicated nothing further.

Tesla continued to work diligently, and in 1937, stated to the press that he had completed a "dynamic theory of gravity," and that he would hope to soon give it to the world. It would never be published. He also criticized Einstein's theory of relativity, calling it a "magnificent mathematical garb which fascinates, dazzles, and makes people blind to the underlying errors."

On January 5, 1943, Tesla placed a small "do not disturb" sign on his door in the New Yorker Hotel. Two days later, the sign remained. The maid entered to find him dead in his bed. He was 86 years old. Despite receiving over 800 patents in his lifetime, and quite literally inventing the twentieth century, he died penniless and alone. A medical examination determined a blood clot in his heart was responsible for the death, and that there were no suspicious circumstances.

When his cousin, Sava Kosanovic, arrived at his room the next morning, Tesla's body was already gone as were his effects. Papers and notebooks were missing, including a treasured black notebook that contained hundreds of pages of technical research notes. Two days later, the U.S. Office of Alien Property seized all of Tesla's possessions, and his papers were declared top secret by the War Department due to the nature of the inventions and patents.

One year later, nearly three decades after Tesla began the fight, the U.S. Supreme Court confirmed that Marconi's radio patents indeed infringed on Tesla's and therefore declared Tesla as the true "father of radio."

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Einstein said that "imagination is more important than knowledge," because "knowledge is limited to all we now know and understand, while imagination embraces the entire world, and all there ever will be to know and understand."

All great geniuses are incredibly creative in their own ways. They're able to take what is known, dream of new possibilities, and bring them into the world. Every mathematical enigma solved, every masterful symphony composed, every revolutionary machine invented, every brilliant philosophy penned, every great corporation built...they all sprang from a person with an extraordinary imagination.

Marcus Aurelius once said that a person's life is "dyed with the color of his imagination." Your journey to greatness certainly will be too. Stop and think for a second the frontiers that lie ahead for our species. The Earth has been thoroughly conquered. The once radical philosophies of equality, tolerance, and individualism are embraced by much of the civilized world. The secrets of the atom have given us the ability to extinguish every living thing on the planet. What is next? We look to the imagination of geniuses for the answers.

What is imagination, though? Michelangelo said he saw angels in the marble and carved until he set them free. Most of us regard creativity in the same way we regard that statement—as a mysterious gift that can't be explained or cultivated. But we're wrong. Like genius itself, creativity is a process, not a providence.

The Secret to Creativity

Dylan's *Like a Rolling Stone*. Shakespeare's *Hamlet*. Bell's telephone. Pythagoras' theorem.

How did they come up with such unique, profound ideas? Well, there's an answer, and it's probably not what you think.

Steve Jobs said creativity is "just connecting things."

Salvador Dali said "those who do not want to imitate anything, produce nothing."

Picasso said "good artists copy but great artists steal."

Mark Twain said "all ideas are second-hand, consciously and unconsciously drawn from a million outside sources."

No magnificent product of the imagination—whether a machine, painting, or philosophy—was created in a complete vacuum. The invention of the telegraph took the efforts of a thousand, but the last man, who added that final inspired touch, got the credit.

When you start viewing creativity as a process of combination, and imagination as the ability to connect, stretch, and merge things in new ways, creative brilliance becomes less mystifying. A creative genius is just better at connecting the dots than others are.

That's why the coffee house in the Age of Enlightenment and the Parisian salons of modernism were such engines of creativity; they were spaces where many people from many different backgrounds and areas of expertise came to swap, join, and borrow many different ideas.

Don't confuse creativity and imagination with "thinking" either. Ray Bradbury said that thinking is the enemy of creativity because it's self-conscious. When you think you sit calmly and try to reason through something in a structured, logical way. Creativity dances to a different tune. Once you flip that switch, things get a bit chaotic. Ideas start buzzing. Images start popping into your head. Fragments of all kinds of data find their way into orbit. We're pulled in one direction, then suddenly our instincts send us flying in another. Material collides and fuses, disappears and reappears. This chaos is essential to the creative process. A breakthrough occurs when pieces happen to come together in unique and harmonic ways.

"Our first endeavors are purely instinctive prompting of an imagination vivid and undisciplined," Tesla wrote. "As we grow older reason asserts itself and we become more and more systematic and designing. But those early impulses, though not immediately productive, are of the greatest moment and may shape our very destinies."

There's a catch to "combinatorial creativity," though. Before you can connect dots, you need to have dots to connect. The more material you're exposed to in the world, the more grist you'll have for your imagination mill. Tesla fully immersed himself in the world of electricity. He read hundreds of books. He conducted thousands of experiments and took copious notes. The more varied your knowledge and

experiences are, the more likely you are to be able to create new associations and fresh ideas.

Your mind has an incredible ability to cross-pollinate—that is, to connect disparate things to solve problems in unique ways or envision new creations. Einstein attributed many of his physics breakthroughs to his violin breaks, which he believed helped him connect ideas in very different ways.

This brings us back to the beginning of the genius code: curiosity. It's an essential part of becoming more creative. Expand your interests in life. Seek out new, interesting experiences, no matter how mundane or inconsequential they might seem to others. Read books, watch documentaries, and discuss your ideas with others. No subject, no matter how specialized or esoteric, is off limits. You never know where your imagination will find pieces for its puzzles.

"The air is full of ideas," Henry Ford said. "They are knocking you in the head all the time. You only have to know what you want, then forget it, and go about your business. Suddenly, the idea will come through. It was there all the time."

By exposing yourself to an abundant variety of ideas, facts, art, and stories, and by pulling from your vast collection in many different ways—by entertaining any idea no matter how seemingly absurd—you can bring your imagination to life. And when you do, there's no telling what new things you can bring into the world and how it will change. Or, as Tesla put it, "A single ray of light from a distant star falling upon the eye of a tyrant in bygone times may have altered the course of his life, may have changed the destiny of nations, may have transformed the surface of the globe; so intricate, so inconceivably complex are the processes in Nature."

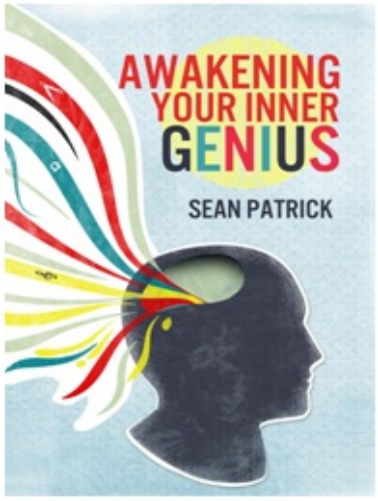
It takes curiosity to find your call to adventure, it takes courage to venture into the unknown, and it takes imagination to create your path. And to, like Tesla did, create it exactly as you envision it, no matter how much work it takes, or how many people try to stop you.

What ends will you work toward on your journey, and why? Where will you diverge from the trails laid by people before you, and where will you go instead? How will you tackle problems faced by your predecessors, and what will you do that they didn't? When will your eureka moments strike?

A genius answers those questions audaciously and lavishly. She dares to imagine everything and anything as possible, and carries our culture to worlds that never were. You can do the same.

Did You Like This Book? Then You Should Check Out the Author's Other Work!

If you'd like to know what some of history's greatest thinkers and achievers can teach you about awakening your inner genius, and how to find, follow, and fulfill your journey to greatness, then you want to read *Awakening Your Inner Genius* today.



This book reveals things like...

- **How to view and deal with the world as Leonardo da Vinci did, and embrace the one trait that most accounted for his incredible genius and talents.**
- How Thomas Edison was able to go from a mischievous academically challenged kid to the world's most successful inventor, and how you too can formulate and realize goals like he did.
- **The secret to Alexander the Great's superhuman drive and work ethic, and how you can inspire yourself to pursue your own goals and dreams with the same vigor and tenacity.**
- What geniuses like Elizabeth I can teach you about the importance of individualism in your journey to greatness, and how to strengthen your will to break away from conventions, ignore the naysayers, and stay true to your vision and principles.
- **How Hippocrates' epic quest to reform medicine in ancient Greece was fueled by his unparalleled judgment, and how you too can sharpen your ability to make the right decisions at the right times and thus move closer to your dreams, one good call at a time.**
- And much, much more...

In this book you're going to learn something most people will never know: **What it really takes to find and follow your bliss, and how you can use the lessons passed down to us by some of history's greatest geniuses to systematically rise to top of your fields, activities, and endeavors.**

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Thank you for reading my book. I hope you enjoyed it! I'm positive that if you decide to walk the path to greatness, you can unlock possibilities for happiness and accomplishment that you never believed possible.

I have a small favor to ask. Would you mind taking a minute to write a blurb on Goodreads about this book? I check all my reviews and love to get feedback (that's the real pay for my work—knowing that I'm helping people).

Click here to leave me a review on Goodreads

Also, if you have any friends or family that might enjoy this book, spread the love and lend it to them!

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Thanks again, I hope to hear from you, and I wish you the best!

Sean