Nikola Tesla (1856-1943): The Mind Behind the Master of Lighting
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Nikola Tesla was a Serbian-American inventor. He was born in the small village of Smiljan at midnight on July 10, 1856. In 1884 he moved to the United States where he eventually established himself as an inventor in New York City. Multiple works have been composed about the life of Nikola Tesla; in this paper I will focus on the mind of Nikola Tesla. This biography will not follow the conventional, chronological layout. Instead, each section will relay, describe, and implement an idea. Through this method, an understanding and appreciation for the mind of the generally unknown electrical genius will be attained.

The Cultivation of Will: A Vivid Imagination

When Nikola Tesla was awarded the Edison Medal in 1917, he explained to his fellow electrical engineers, "When I get an idea, I start right away *to build it up in my mind*. I do not rush into constructive work. I make improvements, I experiment, I run the device in my mind. In this way, you see, I can rapidly develop and perfect an invention, without touching anything."[1] During his childhood, Tesla cultivated this ability to perfect an invention in his imagination. However, this discipline did not come easily. Through self-determination, Nikola Tesla harnessed his imagination and strengthened his will.

In 1863 the Tesla family moved from their village home of Smiljan in modern-day Croatia to the larger town of Gospić. This abrupt move was commenced by Nikola's distraught father after the death of his eldest son, Dane. When Tesla was about seven years old, he witnessed the tragic death of his older brother, who was killed by their father's Arabian horse.[2] The sudden move and loss of his brother deeply disturbed Nikola, and caused him to develop many strange preferences and habits.[3]

Nikola Tesla grew up with little confidence because his parents, Milutin and Djuka, had pinned all of their hopes on their eldest son.[4] Tesla's lack of self-esteem was also due to his emotions, which greatly afflicted him by coming in waves and surges that vibrated between extremes.[5] In his 1919 autobiography, Tesla compared his childhood wishes to the heads of a hydra in that they were uncontrollable and multiplied. Young Nikola Tesla was oppressed by thoughts of pain in life, death, and supernatural religious concepts. He was influenced by superstitions and lived in constant fear of unholy monsters of the dark. Tesla defined the character of his adolescent self as weak and vacillating, stating that he "had neither courage nor strength to form a firm resolve."[6]

As a young boy Nikola Tesla suffered from what many scholars have classified as hallucinations. He was afflicted and debilitated by the appearance of images and strong flashes of light. [7] In his autobiography, Tesla explained that these episodes occurred when he experienced immense excitement. Their appearance caused him severe discomfort and anxiety

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[1] Carlson, W Bernard, *Tesla: Inventor of the Electric Age* (New Jersey: University of Princeton Press, 2013), 9.
[2] Bernard, *Tesla: Inventor of the Electric Age*, 21.
[3] Nikola Tesla, *My Inventions: The Autobiography of Nikola Tesla* (Unabridged Start Publishing LLC, 1919) 12.
[4] Bernard, *Tesla: Inventor of the Electric Age*, 21.
[5] Tesla, *My Inventions*, 12-13.
[6] Tesla, *My Inventions*, 12-13.
[7] Tesla, *My Inventions*, 6.

because he had no control over them. Nonetheless, what Tesla was experiencing were certainly not hallucinations. Apart from these appearances and his emotional instability derived from the traumatic experience of witnessing his brother's death, Nikola Tesla was normal and healthy in all other respects. What Tesla was enduring was the result of a photographic mind. Nikola Tesla thought with images instead of words, picturing what he was thinking of as if it were really before his eyes. He went on to describe the workings of this phenomena:

> When a word was spoken to me the image of the object it designated would present itself vividly to my vision and sometimes I was quite unable to distinguish whether what I saw was tangible or not. To give an idea of my distress, suppose that I had witness[ed] a funeral or some such nerve-racking spectacle. Then, inevitably, in the stillness of night, a vivid picture of the scene would thrust itself before my eyes and persist despite all my efforts to banish it. Sometimes it would even remain fix[ed] in space tho[ugh] I pushed my hand thr[ough] it.[8]

To free himself of these uncomfortable appearances temporarily, Tesla concentrated his mind on other things he had seen. However, because he had seen little of the world and was only aware of his immediate surroundings, it was not long before he had exhausted all of the images at his command. Tesla recalled that "[a]s [he] performed these mental operations for the second or third time, the remedy gradually lost all its force."[9] To compensate, Tesla made excursions beyond the limits of the small world he knew.

Nikola Tesla's capability to execute these cerebral expeditions was the result of an array of mental exercises that Tesla's father made him perform daily. These exercises included discovering the defects of some form or expression, repeating long sentences, guessing one another's thoughts, and performing mental calculations.[10] These laborious mental activities strengthened Tesla's memory and critical reasoning. They also provided him with the tools to replace the appearances that plagued him with positive images found within the books of his father's library.

At eight years old, Tesla discovered his love of reading while he was a prisoner of his new home in Gospić. His father forbade him from reading the books in his library because he did not want young Nikola Tesla to spoil his eyes.[11] Nevertheless, whenever he could, Tesla snuck into the sanctuary of literature and read until dawn. When the appearance of images again afflicted him, Tesla saw new sights. [12] At first they were blurred and indistinct, dissipating upon his attempts to impose his will on them. When Tesla gave into the visions, however, he discovered comfort in exploring these new worlds and subsequently thrived at improving them. In this way Nikola Tesla would travel the world. He would live in different cities and countries, experiencing their sights, meeting new people and making influential friendships. Even though these relationships were strictly fictional, they formatively impacted the confidence and will-power of the young Nikola Tesla.

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[8] Tesla, *My Inventions*, 6.
[9] Tesla, *My Inventions*, 8.
[10] Tesla, *My Inventions*, 4-5.
[11] Tesla, *My Inventions*, 13.
[12] Tesla, *My Inventions*, 7-8.

"In the course of time, this vigorous mental exercise became second nature," stated Tesla in his 1919 autobiography.[13] Tesla applied his newfound method to the story of *Abafi,* which follows the transformation of the life of a Hungarian knight from selfish indulgence to selfless chivalry. After reading this novel, Tesla believed that he, too, could practice self-control over his emotions and desires. Consistently conforming these images to his will, Tesla gradually conquered his weak resolve. When he was around twelve years old, Tesla successfully accomplished the willful banishment of a distressing image from his vision. Tesla later said, "I felt a pleasure I never knew before— that of doing as I willed."[14]

When Nikola Tesla was around twenty years of age, he developed an infatuation for gambling.[15] Though he abandoned school to dedicate more time to gambling, Tesla did not see danger in his new habit. Tesla explained in his autobiography, "I had a strong resolve but my philosophy was bad."[16] In 1878, Nikola Tesla ran away to Maribor, Austria, where he worked as a draftsman and further indulged his gambling habit. [17] When Milutin, Tesla's father, discovered his son's actions, he traveled to Maribor in March of 1879 and begged Tesla to return home and resume his studies. Tesla refused, claiming that he could cease to gamble whenever he pleased. The following month, Nikola Tesla was arrested by the Maribor police and deported to Gospić as a "vagrant." Shortly after Tesla's forced return home, Milutin succumbed to serious illness and passed away.

Tesla's mother, who better understood Tesla's character, implemented a different strategy.[18] One afternoon, when Nikola was penniless and desperate for a game, Djuka gave him the remainder of their money. She instructed him to go and enjoy himself, because the sooner he lost all that they had left, the better it would be. It was in that moment that Tesla conquered his passion for gambling. He later asserted, "I not only vanquished but tore it from my heart so as not to leave even a trace of desire."[19] From that day forward, Tesla felt nothing but indifference toward gambling. Just like the knight in the novel *Abafi*, Nikola Tesla had cultivated within himself a strong will, self-discipline, and command of his imagination, mental skills that served him well as an inventor. [20]

The Alternating Current: Master of Lightning

It was on a dry winter evening while he pet the back of his cat, Macak, that the young Nikola Tesla witnessed the phenomena of electricity. "As I stroked Macak's back, I saw a miracle that made me speechless with amazement," remembered Tesla. "Macak's back was a sheet of light and my hand produced a shower of sparks loud enough to be heard all over the house."[21] Tesla's experience inspired him to pursue an understanding of electricity and develop an alternating current (AC) motor.

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[13] Tesla, *My Inventions*, 13.
[14] Tesla, *My Inventions*, 13.
[15] Tesla, *My Inventions*, 14.
[16] Tesla, *My Inventions*, 14.
[17] Bernard, *Tesla: Inventor of the Electric Age*, 47.
[18] Tesla, *My Inventions*, 14.
[19] Tesla, *My Inventions*, 14.
[20] Bernard, *Tesla: Inventor of the Electric Age*, 24.
[21] Bernard, *Tesla: Inventor of the Electric Age*, 18.

In the fall of 1875, Nikola Tesla began his studies at the Joanneum Polytechnic School in Graz, Austria.[22] The lectures given by the professor of physics, Jacob Pöschl, introduced Tesla to the science of electricity. The recently developed Gramme generator or dynamo utilized electric currents to transmit power over a distance.[23] By connecting the Gramme dynamo to a power source such as a battery, the dynamo functioned as a direct current (DC) motor. The DC motor transformed direct current into alternating current that, in turn, produced a rotating magnetic field. Finally, the alternating current reverted back to direct current to power its objective. This switching of the currents was accomplished by an external source, a battery and commuter brushes. However, the dynamo's commuter brushes were prone to spark and required careful adjustment.[24]

When Tesla observed this sparking during a lecture, he concluded that the motor could operate more efficiently without an external source. Tesla suggested that the motor, already using systematically alternating current, should forfeit direct current completely.[25] This suggestion elicited a lecture from the Professor: "Mr. Tesla may accomplish great things, but he certainly never will do this."[26] This rebuke only served to fuel Tesla's ambitions, for he was convinced that his insight was correct. Tesla began investigating the mechanics of an alternating current motor in his imagination.

> I started by first picturing in my mind a direct-current machine, running it and following the changing flow of the currents in the armature. Then I would imagine an alternator [an ac generator] and investigate the processes taking place in a similar manner. Next I would visualize systems comprising motors and generators and operate them in various ways. The images I saw were to me perfectly real and tangible. All my remaining term in Gratz [sic] was passed in intense but fruitless efforts of this kind, and I almost came to the conclusion that the problem was insolvable.[27]

In 1880 Tesla resumed his engineering studies in Prague. The following year, Tesla prematurely ended his schooling and moved to Budapest. There the opportunity arose for him to work as a draftsman in the Central Telegraph Office of the Hungarian government.[28] In the Telegraph Office, Nikola Tesla worked on the calculations, estimates, and designs of new installations. He also improved the Central Station's telephone repeater or amplifier. Tesla observed that, "The knowledge and practical experience I gained in the course of this work was most valuable and the employment gave me ample opportunities for the exercise of my inventive faculties."[29] However, this was an intermediate position that Tesla held until the Puskás brothers,

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[22] Bernard, *Tesla: Inventor of the Electric Age*, 35.
[23] Bernard, *Tesla: Inventor of the Electric Age*, 41.
[24] Bernard, *Tesla: Inventor of the Electric Age*, 42.
[25] Bernard, *Tesla: Inventor of the Electric Age*, 45.
[26] Tesla, *My Inventions*, 39-40.
[27] Tesla, *My invention*, 40. However, the addition of "an AC generator" is found in the same citation from Bernard, *Tesla: Inventor of the Electric Age*, 42.
[28] Bernard, *Tesla: Inventor of the Electric Age*, 50.
[29] Tesla, *My Inventions*, 46.

who were working to build a telephone exchange in Europe for Thomas Edison, arranged the project's financing and hired him.

In 1882, Mr. Puskás offered Tesla a position at the Edison works in Ivry, a city on the outskirts of Paris. While working at the factory in Ivry, Tesla sharpened his understanding of dynamos and motors and built the foundation necessary to pragmatically assess how to convert his conceptualized ac motor into an actual machine. [30] Tesla gave himself over completely to the intense practice of mentally examining the machine. [31] One evening, Tesla drew diagrams of his AC motor in the dirt for some of Edison's colleagues and Anthony Szigeti, one of Tesla's close friends. He described to the men an intricate system in which a generator produced three independent alternating currents that were carried to the motor over six separate wires. The Edison men were not impressed with Nikola's proposal, and he was greatly disappointed.

In October of 1883, Nikola Tesla was sent to solve a problem with the wiring in the new central railway station in Strasbourg. While there, Tesla, with the aid of Szigeti, constructed and tested a small AC motor in secret. At first, the motor did not perform as Tesla had imagined it would. Nevertheless, after several adjustments, Tesla "finally had the satisfaction of *seeing rotation effected by alternating currents of different phase, and without sliding contacts or commutator*, as [he] had conceived a year before."[32] The Strasbourg motor gave Tesla first-hand experience with the practicality of converting his ideas into functioning machines. By February 1884, Tesla had resolved the problems in the Strasbourg railway and returned to Paris.

Tesla's skill and ingenuity had not gone unnoticed. Charles Batchelor, the newly appointed manager of the Edison Machine Works in New York, transferred Nikola Tesla to the United States. Tesla arrived in New York City on June 6, 1884, and immediately demonstrated his potential when the recently-installed dynamos on the S.S. *Oregon* failed upon the ship's attempted departure. Tesla volunteered to help the work crew make the necessary repairs, and, after working through the night, they completed the task, allowing the *Oregon* to depart on the morning of June 7. This feat so impressed Edison that he instructed Tesla to begin his employment at the Edison Machine Works in New York the following day. Over the next six months, Tesla continued to think about his ac motor but did not attempt to develop it further.[33] Ultimately, Nikola Tesla felt unfulfilled and left his position at Edison's company.

In December of 1884, businessmen Benjamin A. Vail and Robert Lane hired Nikola Tesla. Together, they organized the Tesla Electric Light and Manufacturing Company in Rahway, New Jersey for the purpose of producing an arc-lighting system. Tesla contemplated the prospect of undertaking other endeavors, particularly the AC motor, but refrained after realizing his partners' limited interest. When the system was complete and the patents granted, Vail and Lane, retaining the rights to the arc-lighting system, deserted Tesla.[34] Tesla, jobless once more, was unable to use his own invention.

In March of 1886, however, Tesla's fortune changed after he patented a thermomagnetic motor. This motor introduced Tesla to Alfred S. Brown and Charles F. Peck, who became his patrons. Together the three men founded the Tesla Electric Company in 1886. They agreed upon a division of profit whereby Tesla received a third, Peck and Brown shared a third, and the

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[30] Bernard, *Tesla: Inventor of the Electric Age*, 63-64.
[31] Tesla, *My Inventions*, 45-46.
[32] Bernard, *Tesla: Inventor of the Electric Age*, 68.
[33] Bernard, *Tesla: Inventor of the Electric Age*, 70.
[34] Bernard, *Tesla: Inventor of the Electric Age*, 75.

remaining third was invested back into the company. A couple months later, Anthony Szigeti rejoined Tesla to work as his assistant. In the fall of 1886, the company rented a laboratory for Tesla and Szigeti in lower Manhattan.

Nikola Tesla finally had the necessary facilities to complete his other inventions and turn his full attention to producing his AC motor. In 1887, Tesla developed a pyromagnetic generator that converted the heat from burning coal directly into electricity. After the generator's completion, Tesla focused his attention on the electric motor he had envisioned five years earlier.[35] Tesla believed that a motor utilizing multiple alternating currents could produce a rotating magnetic field. To test his idea, he "had the AC generator deliver two separate currents to coils on opposite sides of the ring."[36] Much to Tesla's satisfaction, the design worked. By the late summer of 1887, Nikola Tesla had achieved his dream of developing an AC motor.

In his biography of Nikola Tesla, Carlson W. Bernard inquired into two facets of Tesla's ambition for the alternating current. First, he wondered why Tesla made the shift from DC to AC although the majority of electrical work in the 1870s utilized direct current.[37] Second, he remarked that "it is unclear how a second-year engineering student would know enough to do this."[38] In his biography, Tesla explained his pursuit of alternating current: "Instinct is something which transcends knowledge. We have, undoubtedly, certain finer fibers that enable us to perceive truths when logical deduction, or any other willful effort of the brain is futile."[39] Nikola Tesla's correct assumption of the superiority of the alternating current flowed from his intuition and imagination long before his ideal machine became a reality.

The Task of an Inventor: Inventions with Purpose

Nikola Tesla defined the function of "the inventor, who is often misunderstood and unrewarded," as "harnessing the forces of nature to human needs."[40] He believed that the development and survival of mankind depended upon invention. Therefore, the purpose of the inventor was to manufacture the "products of his creative brain" for the betterment of humanity and society. Because of this ideology, "Tesla himself showed little interest in developing inventions for commercial application."[41] Instead, he authored many works intended for both expert and public use.[42]

Tesla wished to harness the power of nature in order to produce electricity through inexpensive and renewable methods. At the age of ten, Nikola Tesla became interested in water turbines. His primary school classroom contained a few models that inspired him to construct many of his own. Young Tesla found great pleasure in operating them and told his uncle that he would someday venture to America and make one for Niagara Falls.[43] Tesla's uncle did not

[35] Bernard, *Tesla: Inventor of the Electric Age*, 84.
[36] Bernard, *Tesla: Inventor of the Electric Age*, 84.
[37] Bernard, *Tesla: Inventor of the Electric Age*, 44-45.
[38] Bernard, *Tesla: Inventor of the Electric Age*, 44-45.
[39] Tesla, *My Inventions*, 30.
[40] Tesla, *My Inventions*, 1.
[41] Eliot Marshall, "Seeking Redress for Nikola Tesla," *Science* 214 (1981): 524.
[42] Snežana Šarboh, "The Patents of Nikola Tesla," *World Patent Information* 32 (2010): 335.
[43] Tesla, *My Inventions*, 28.

approve of his engineering pastime and rebuked his enterprise. Nonetheless, Tesla held onto his childhood dream and adamantly pursued it when the opportunity arose.

In the early 1880s the Niagara Falls Power Company wished to implement a large-scale power plant utilizing the waters of Niagara Falls. Tesla worked tirelessly at designing and patenting practical and efficient hydroelectric generators. By 1887, Tesla had successfully submitted nine patents pertaining to the design of two-phase alternating current, hydroelectric generators to the U.S. Patent Office.[44] In the two-phase, AC design, "[e]ach of the two currents could be separated and used to power single-phase incandescent lights."[45] The two alternating currents could be transferred to power two separate direct current apparatus.

In 1888, George Westinghouse of the Westinghouse Electric and Manufacturing Company acquired the rights to seven of Tesla's patents. From 1888 through 1889, Tesla worked with the Westinghouse Electric Company on the practical realization of these patents.[46] By 1893 the Niagara Falls Power Company was ready to contract either the Westinghouse Company or Thomas Edison's General Electric Company (GE) to begin work. Edward Dean Adams, the head of the Niagara Falls Power Company, was forced to decide between GE's design, and the Westinghouse Company's two-phase AC design.

In 1893 Nikola Tesla met and corresponded with Adams on behalf of the Westinghouse Company. Tesla argued that the two-phase ac contained many practical advantages including its efficiency and adaptability. At the Chicago World's Fair in the summer of 1893 Tesla demonstrated the capacity and potential of ac by showcasing his oscillating transformer, early motors, new lamps, and egg of Columbus apparatus.[47] His campaign succeeded, and in October of 1893 Westinghouse was awarded the contract to build the generators. GE was granted a separate contract for building the transmission line from Niagara to Buffalo. Three years later, in 1896, the company completed the Niagara Falls power station, which began to power an industry in Buffalo.[48] Although Westinghouse got the credit, nine out of the thirteen patents used for this project were designed by Nikola Tesla. "Thirty years later," exclaimed Nikola Tesla, "I saw my ideas carried out at Niagara and marveled at the unfathomable mystery of the mind."[49]

Throughout the 1890s Tesla conducted experiments to improve the progressive medium of photography. At this point in time, capturing a photographic image required a relatively long exposure time in which lighting was crucial. However, artists and scientist lacked a good source of artificial lighting. Tesla conducted "experiments with the view of ascertaining the applicability of the light emitted phosphorescent vacuum tubes to ordinary photography."[50] He invented vacuum tubes that could produce light as bright as the noonday sun.[51] These vacuum tubes were more luminous and efficient than the widely used incandescent lamps because they used Tesla's improved oscillators to produce alternating current. The vacuum tubes greatly reduced exposure time and allowed the artist or scientist freedom to manipulate the amount of lighting present.

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[44] Snežana Šarboh, "The Patents of Nikola Tesla," 335.
[45] Snežana Šarboh, "The Patents of Nikola Tesla," 335.
[46] Bratislav Stojiljkovic, "Nikola Tesla and Samuel Clemens: the friendship between two luminaries of the Gilded Age," *Mark Twain Journal* 52 (1954): 24.
[47] Bernard, *Tesla: Inventor of the Electric Age*, 172.
[48] Snežana Šarboh, "The Patents of Nikola Tesla," 335.
[49] Tesla, *My Inventions*, 28.
[50] "Vacuum Tube Light," *The Photogram*, September 1898, 57.
[51] "Night Photography," *St. Louis and Canadian Photographer*, June 1898, 6.

Nikola Tesla's work in photography led to his investigation of x-rays in 1894. Photography piqued Tesla's curiosity after he observed "mysterious damage to photographic plates in his laboratory."[52] Tesla was attempting to obtain an image of his close and personal friend, Mark Twain, when he accidentally produced the first x-ray image in the United States.[53] Upon further experimentation, Tesla obtained images of the human body, which he dubbed shadowgraphs.[54] He sent these shadowgraphs to Wilhelm Conrad Roentgen. Roentgen is the German engineer and physicist who is accredited with the discovery of x-rays on November 8, 1895. Roentgen congratulated Tesla on the beauty and clarity of his images and inquired into his methods. Though he had made the discovery a year earlier, Tesla granted Roentgen full credit.

Nikola Tesla was among the first to realize the biological hazards of working with x-rays.[55] He observed and worked to combat the harmful effects of x-rays, although he was not aware at the time that they were due to radiation. He advised those who worked with x-rays at close proximity to limit their exposure to fewer than three minutes: "He also tried to construct a protective shield made of aluminum wires connected to the ground."[56] Through his research, Tesla ascertained the three crucial aspects to radiation protection: time, shielding, and distance. These three concepts are widely implemented today in areas where proximity to radiation is a factor. Unfortunately, most of Tesla's work on x-rays was destroyed when his New York laboratory burned down on March 13, 1895.

As an inventor, Nikola Tesla's ultimate aim was the elimination of human casualties in war. To realize this goal, Tesla experimented with radio waves and wireless communication. By 1898 Nikola Tesla had "patented a method and an apparatus for controlling the mechanism of moving vessels or vehicles" wirelessly.[57] Tesla believed that through wirelessly controlled devices, human presence in combat would become obsolete. To demonstrate this idea, he built a model boat and presented it to the New York public in 1897. This boat was controlled from a transmitter on shore, and was also capable of firing explosive rounds; it could achieve its objective without putting any people in harm's way. Tesla explained that this research "[i]ntroduces into warfare an element which never existed before – a fighting – machine without men as a means of attack and defense. The continuous development in this direction must ultimately make war a mere contest of machines without men and without loss of life – a condition which must be reached as preliminary to permanent peace."[58] Today's technology is on the precipice of fulfilling Tesla's goal with the institution of Unmanned Aerial Vehicles (UAV's).

Nikola Tesla was a man who understood the world in a way that we are just beginning to grasp. His ideas, dreams, and aspirations were beyond the capabilities of the technology of his

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[52] "Nikola Tesla and the Discovery of X-rays," *Radio Graphics*, August 28 (2008): 1190.
[53] Nikola Tesla and Samuel Clemens (aka Mark Twain) maintained a friendship that lasted nearly twenty years, until the death of Mark Twain in 1910. In his autobiography, Nikola Tesla credits the works of Mark Twain for his miraculous recovery from a string of ailments that almost took his life during his youth. Recalling that "Twenty-five years later, when I met Mr. Clemens and we formed a friendship between us, I told him of the experience and was amazed to see that great man of laughter burst into tears."
[54] "Nikola Tesla and the Discovery of X-rays," *Radio Graphics*, 1190.
[55] "Nikola Tesla and the Discovery of X-rays," 1190-1191.
[56] "Nikola Tesla and the Discovery of X-rays," 1190-1191.
[57] Snežana Šarboh, "The Patents of Nikola Tesla," 336.
[58] Bernard, *Tesla: Inventor of the Electric Age*, 308.

time. Nonetheless, he strived to impact this world by developing inventions that helped and advanced humanity as a whole. Tesla discussed the potential of alternative and inexpensive energy produced by "windmills, solar-power, geothermal energy, hydroelectric plants, and ideal heat engines," some of which are being utilized by the world today.[59] His experimentation with remote-controlled devices greatly impacted the technology of modern warfare, most prominently with UAV's. Furthermore, his work with the alternating current has been a driving force behind the continued development of technology and humanity. Despite the fact that "Tesla" is no longer a household name and many of his patents and designs have yet to be accomplished, he fulfilled the task of the inventor. His work continues to inspire the people and technology of the digital age, even seventy years after his death.

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[59] Bernard, *Tesla: Inventor of the Electric Age*, 308.

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