

# I, SCIENCE

THE SCIENCE MAGAZINE OF  
IMPERIAL COLLEGE



**MONEY, POWER, & INFLUENCE**

SPRING 2020

# ADA LOVELACE: A TANGLED LIFE

Cristina Coman sheds light on the complicated legacy of Ada Lovelace. »

**T**he Enchantress of Numbers, a nickname given by Charles Babbage to Ada King, countess of Lovelace, is remembered amongst the top scientists of all time. As a nineteenth century socialite, she moved in high intellectual circles, mixing with some of the greatest minds of the time, such as Michael Faraday, Charles Wheatstone, Augustus De Morgan, and Charles Babbage himself. Regarded as a visionary, Ada is considered one of the first computer programmers—thanks to her contributions to Babbage's Analytical Engine, the first design of the modern computer.

There are, however, a lot of controversies regarding both her personal life and work as a scientist. In

her biography, 'Ada, a Life and a Legacy,' psychologist and computer programmer Dorothy Stein attempted to untangle the mysteries behind the Countess of Lovelace's short life. Most quotations throughout this article were taken from this book.

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**"It is fair to say that Ada's life was plagued by drama, some as a consequence of her own decisions, and some circumstantial."**

own decisions, and some circumstantial. As the daughter of two gifted parents, Ada was required to be a genius. As the only legitimate child of Lord Byron, "the mere consciousness of this connection was enough to shape her existence". It most likely did.

Concerned about keeping up appearances after her drama-filled marriage with poet Byron, and fearful of him and his

family's negative influence on Ada, Lady Byron took control of her daughter's life and learning from a very young age. Considered "more fortunate than any of her intellectual female contemporaries", Ada was encouraged and supported in her scientific pursuits, particularly mathematics.

Through the power of her family name and her great financial resources, Lady Byron provided young Ada with the very best private tutors. Eager to "make her mamma proud", Ada did her best to emulate her mother, who was reputed for her great learning and ability.

Unfortunately, in spite of able tutors, a questioning spirit and abundant time at her disposal, by the time she was 28, Ada was only a "promising 'young beginner'" as she had "great difficulty getting beyond her probing 'first queries' and acquiring a firm grasp of mathematical ethical practice".

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just 36. On top of this, she started obsessively gambling "out of the resentment she felt against a mother and husband who seemed so wealthy, free and powerful at her expense". It is a pity that someone with such a promising future, endless

opportunities and high aspirations achieved so little.

Celebrated as a key figure in mathematical history, portrayed as a heroine for female scientists, this image of Ada Lovelace hides a more important message of her life experience from other women. As Stein mentioned in an interview with the New-York Times in 1986, Ada's titles, connections and money did not give her the freedom she so longed for her entire life, as she remained enslaved by the "condition of being a woman in society". ■

Her translation of Luigi Manabrea's paper on the Analytical Engine—and the personal set of notes she added to the document—form the basis for Ada's reputation as a mathematician. However, much of this work can hardly be considered original due to the Countess's "dependence on Babbage as sole authority on his machines". It seems she was mostly a promoter of Babbage's personal work.

Important scientific figure or not, her innumerable struggles as a woman living in Victorian aristocratic society left an imprint both during and after her life. Her overbearing mother controlled all aspects of her life until Ada married Lord William King and she passed guardianship to him. King, who was soon after made the Earl of Lovelace, followed clear instructions from his mother-in-law to keep a close eye on Ada's intellectual interests while also managing her finances. Upon Ada's death, Lady Byron militated to protect her daughter's reputation from her late-life mistakes and revelations: gambling debts and a love affair.

It is difficult not to be moved by Ada's life-long struggles. She was constantly battling to find a field she could excel in, having already considered a career in music in 1836. She also suffered never-ending health issues from a young age: measles that left her legs temporarily paralysed, cholera, and eventually uterine cancer, which was to take her life aged



# TESLA'S DESPERATION

Kenna Castleberry writes about how financial hardship affected one of the world's most famous inventors.

**D**arkness fell on Nikola Tesla's lab, deserted after a long day of work. Tesla had left around midnight, working another 12 to 14-hour day. It was 1895, and he had competitors to best. Marconi, a fellow inventor, was gaining fame for developing a system to transmit radio waves. Tesla had already lost to Edison for powering light through New York. He couldn't afford to lose again.

His lab lay in silence. In the basement, an employee of a steam-appliance company, Mr. John Mahoney, was fighting sleep. He had been working overtime. He decided to take a quick walk around. As he shut the door behind him, he forgot to turn off the solitary gas stove burner, which he had been using to keep his coffee warm.

This turned out to be one of the biggest mistakes in Tesla's and Mahoney's lives.

When Mahoney returned, he found flames running across the floor of the basement. The heat made his eyes water. He yelled for help and tried to douse the flames. The police arrived, but everyone was driven out of the building when the flames spread to the upper floors. Bystanders on the streets stared as the floors where Tesla's laboratory was burst into fireballs of heat. Light bulbs shattered with the intensity of the flames. With a rumble, the floorboards of the laboratory began to snap loudly as the fire split boards in two. Suddenly, the laboratory fell two floors down, destroying one side of the building. Firemen fought the flames for the next three hours and ordered the houses next to the building to evacuate for safety.

Tesla returned to his beloved laboratory the next morning unaware of what happened. Upon arriving on the scene, his eyes were met with burned wreckage. Ash floated above his head and filled the air with choking dust. The streets were closed around him. Tesla didn't say anything but asked the nearest policeman if he could see if there was anything worth saving from the fire. In the twisted metal and shattered glass, he could find nothing.

Six hours later, Tesla had returned home and was busy drawing designs for a new oscillator. He had lost so much in the fire,

and from nothing he had to build himself up again. There was only one man who Tesla knew could finance his dreams.

That man was J.P. Morgan, one of the wealthiest men during the time. He was the head of the largest banking firm, and using his wealth, controlled many other companies such as AT&T, currently the world's largest telecommunications company. He was an imposing figure with a large moustache and staunch attitude.

Over the course of his career, Tesla wrote 500 letters to J.P. Morgan – each one a ploy for money. In each letter he would complement

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Morgan on his wise investments and describe to him the inventions which could build his wealth. Morgan was not fooled by Tesla's dreams of grandeur. But Tesla's desperation and dedication to continually writing to Morgan eventually won him over.

In 1901, the city of Shoreham, Long Island, became the site of Tesla's wireless transmission tower, called Wardenclyffe. It was 187 feet high, and had a large imposing metal

dome. Tesla planned to use the earth's ionosphere to transmit wireless radio messages across the world. Though Morgan pledged \$150,000 originally to help finance the tower, Tesla hounded him for more money, explaining how much it would cost to maintain it. By 1917, Morgan had had enough and told Tesla he would no longer finance any of his projects, and that the Wardenclyffe tower had to be taken down.

Tesla's debts were rising high at this point as he had asked other investors for money, but he continued to come up short. In 1917, the Wardenclyffe tower was taken down and sold for scrap metal to pay off Tesla's debts.

I wouldn't be surprised if J.P. Morgan had some satisfaction about Tesla's failure, hoping that he would learn to use investment money more wisely. With Wardenclyffe's ruin behind him, Tesla continued working, fighting poverty again and again, as he sacrificed his life for his inventions. When he finally passed away in 1943, he was almost penniless, but satisfied knowing that he had contributed to furthering the world. ■



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