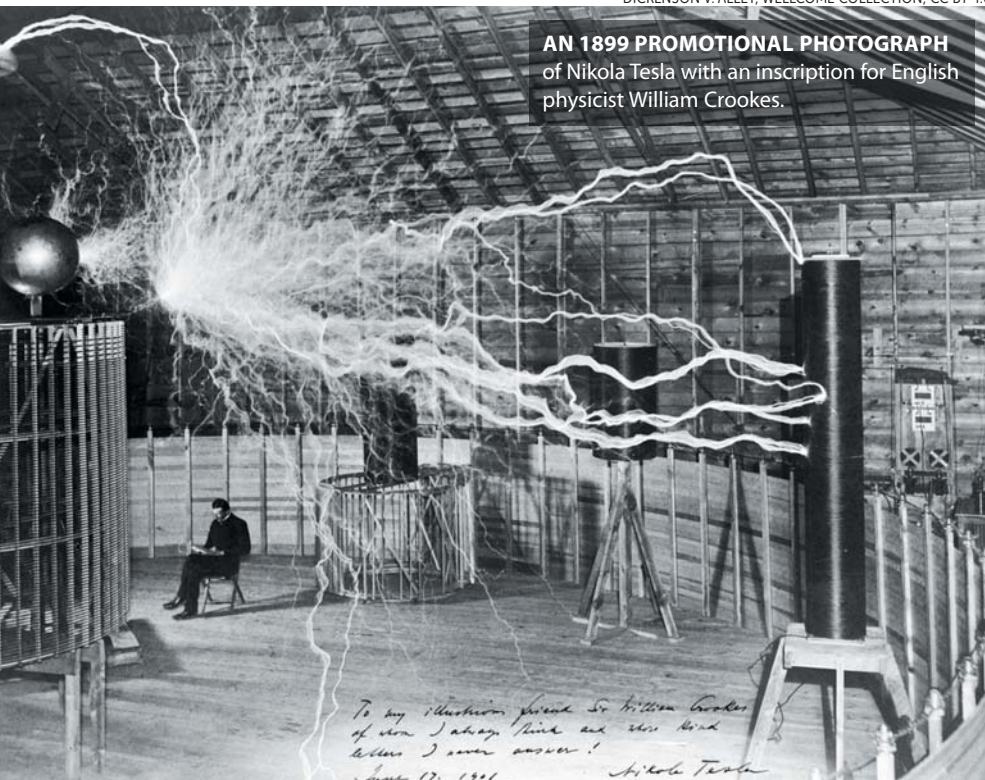


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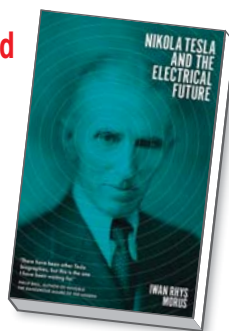
Nikola Tesla, a man of his time

Today, a futuristic electric car carries the name Tesla in honor of a man who, more than a century ago, imagined transforming the world. Nikola Tesla was an electrical engineer notable for his innovative work on alternating current (AC) power distribution systems, polyphase motors, and induction coils. Many biographies of Tesla written after his death in 1943, such as Margaret Cheney's *Tesla: Man Out of Time* (1981), paint him as an esoteric genius and a neglected underdog out of step with the cutthroat entrepreneurial culture of the Victorian era. Is this a true portrait of the man or a caricature?

In *Nikola Tesla and the Electrical Future*, historian of science Iwan Rhys Morus examines this “man of apparent contradictions” in the context of the cultural and technological revolutions of the late 19th century. The book includes an extensive bibliography and endnotes; the author clearly is an authority on the history of electrical technology. Morus convincingly dispels the image of Tesla as a man out of time and replaces it with a more real-

Nikola Tesla and the Electrical Future

Iwan Rhys Morus
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istic view of a brilliant inventor who was nevertheless the product of his era, his interests and activities shaped by the world in which he lived.

Morus's journey into the world of Nikola Tesla has five parts. The first, “The Electrical Century,” describes how the Industrial Revolution influenced Tesla from his early childhood in Croatia through his college years and up to his first job at Thomas Edison's incandescent bulb factory in Paris. Part 2, “Battle of the Systems,” recounts Tesla's decision to come to the US to work in Edison's laboratory. Tesla had viewed Edison as a hero, but that hero worship quickly soured and

was replaced by a new conviction that he alone was responsible for his destiny as an inventor.

Morus delves into the famous AC/DC controversy, which pitted Edison's preferred direct current (DC) distribution against Tesla's more stable AC system, and explains the roles that both Tesla and businessman George Westinghouse played in the conflict with Edison. Although Edison initially gained ground by instilling unwarranted fear in the public's eye about the dangers of AC, its technological superiority, lower cost, and more manageable safety risks would eventually enable AC systems to flourish.

In part 3, “Scientific Showman,” Morus examines Tesla's epiphany that being an inventor required business savvy and self-promotional efforts in addition to new ideas. The author describes Tesla's involvement with a successful hydroelectric power plant at Niagara Falls in New York and his public lectures at international exhibitions where he became known as a master showman, able to exploit the power of spectacle to promote his ideas. However, Tesla's dream of limitless power distribution and worldwide communications via Earth's crust, as Morus shows in part 4, “Selling the Future,” ended in dismal failure when his massive communications tower, the Wardenclyffe, failed to produce the breakthroughs for which he had hoped. The book concludes with an examination of Tesla's life, his prognostications, and his posthumous image in the final part, “Visions of Tomorrow.”

Morus's argument that Tesla was a product of his time is carefully developed and supported with clear and convincing evidence. Tesla lived in a world where the wonders of electricity appeared boundless. The grand exhibitions of the day provided a glimpse into the future for everyone to see, and larger-than-life personalities like Edison were the iconic figures whom many, including Tesla, sought to emulate. But Tesla quickly discovered that he wasn't the type of person who collaborated well with others—he wanted to control the outcome of his visions. Succeeding as an inventor, however, required him not just to make new things, but to sell a vision of the future to those who had the money to back him. Morus shows the reader how Tesla learned from his experiences and crafted

an image as an iconic, eccentric inventor through his showmanship and connections with the media.

Morus emphasizes that Tesla was a great inventor with a gift for visualizing new apparatuses and accurately imagining how a new instrument would work in response to various stimuli. But *Nikola Tesla and the Electrical Future* also shows that the man was not a traditional scientist or engineer. He appreciated only his version of the future and downplayed major breakthroughs by others; for instance, he dismissed the “illusion of Hertzian waves” and declared that “there is no such element as Radium.” Further-

more, although Tesla’s visions always held great promise for the future of society, they often lacked the details necessary to make his imagined future a reality.

Nikola Tesla and the Electrical Future is not simply another biography of Tesla, but rather, a scholarly study of him in the context of his place and time. In a seamless and comprehensive narrative, Morus successfully weaves together Tesla’s personal life with the cultural influences that shaped it and illuminates a very complex person. The clear and engaging writing is a pleasure to read. Although the book was written for a general audience, it would also serve nicely as sup-

plemental reading in a course on the history of technology.

Morus concludes the book by examining how our ideas about the art of invention have and have not changed since Tesla’s day. The melding of invention with business has strengthened over the years, while the role of individualism has waned. Nonetheless, inventiveness—the cornerstone of Tesla’s life and afterlife—can have far-reaching and perhaps unintended consequences. There is an important lesson here for all of us.

Richard Bradley

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A COLLAGE OF REAL SCIENTISTS—and just one tie. Clockwise from top left: Jared Boyce, Nicole Sharp, Sean Carroll, Danielle Twum, Yeom Han-Woong, Ximena Cid, and Suchi Narayanan. (Photo of Nicole Sharp by Kelley Sharp; Sean Carroll by Sgerbic, CC BY-SA 4.0; Danielle Twum by Susana Jett; Yeom Han-Woong by Rickinasia, CC BY-SA 4.0; and Suchi Narayanan by Orion Lyau. All others provided by their subjects.)

Essays from a career in science writing

How can scientists share their insights with laypeople in a way that encourages audience members to reframe their perspective? Sidney Perkowitz, a popular science writer and professor of solid-state physics, has been attacking that question from all angles since his retirement from academia in 1990. His new

book *Real Scientists Don't Wear Ties: When Science Meets Culture* is an anthology of 50 essays he wrote between 1989 and 2018. The pieces are diverse in form and subject; articles explaining research concepts and technological innovations sit beside musings on science’s relationship with art and society. Over the course of the

**Real Scientists
Don't Wear Ties
When Science
Meets Culture**

Sidney Perkowitz
Jenny Stanford
Publishing, 2019.
\$29.95



collection, Perkowitz triumphs, entertains, and stumbles, illustrating the full breadth of his career writing for the public.

Real Scientists Don't Wear Ties has