

the break was followed by a hissing, buzzing, inchoate white noise that inspired me to adjust the dial, so to speak, and retune my circuits.

Eventually, reaching a new frequency and finding the Tesla sign changed my view of this complex, multilingual scientist and inventor. The sign led me to the realization that Tesla's rhetorical moves deserve the kind of contextual consideration and discourse analysis offered to his contemporary, Thomas Edison, by Bazerman's ground-breaking study *The Language of Edison's Light* (1999). Like Edison, Tesla was much more than researcher and inventor—he was a writer who had to negotiate different languages, conventions, and rhetorics to bring ideas to fruition.

PART 2. TESLA IN A NETWORK OF "ELECTRICITY" AND "LANDSCAPE"

When the Tesla sign disappeared, I was dialed in and committed to finishing my dissertation, "Power-Lines: Electricity, Landscape, and the American Mind." "Power-Lines" was charged by experiences far from the city and strung upon a single, sinewy conceptual thread that, when linked to subsequent threads, eventually comprised a broad network. In fact, my ability to more fully receive Tesla's visions for a wireless planet and read *between* the power lines only occurred after I had spent years tracing, connecting, and untangling those lines.

I began my research process examining representations of telegraph, telephone, and power lines in essays, novels, poetry, and other cultural texts. To better understand this ambivalence between "ugly" overhead lines and the necessary technologies, groups, and cultural traditions they served, my research spread from representations of overhead wires to explore the overlaps between the history of electric technologies and popular rhetoric: How did the meanings and practices of "electricity" and "landscape," as materials and metaphors, evolve in philosophy, literature, and the visual arts, from the time of Benjamin Franklin's first electrical kite experiments through the gradual deployment of overhead wires to every corner of the nation?

The methods were loose, the materials legion and unwieldy. Nikola Tesla's place in all this was modest. In fact, in the summer of 2010, a few months before the sign disappeared, the audience's response to a public lecture I gave at the Midtown Manhattan branch of the NYPL made me feel it would be better to *delete* Tesla from the dissertation altogether. My talk concerned the interdisciplinary overlaps among the inventor Tesla, the psychologist and philosopher William James, and the historian Frederick Jackson Turner. For instance, Tesla and James were

two of the most prominent Americans theorists to write about the relationships among electricity, sense perceptions, and automata (James in "Are We Automata?" and Tesla in "On the Problem of Increasing Human Energy"). Meanwhile, Tesla and Turner each made epochal presentations at the 1893 Columbian Exposition in Chicago—Tesla with his patented alternating current system, and Turner with his now famous "frontier thesis" regarding the closing of the West in 1890. Turner's thesis presented America's tendency for expansion in terms of an inherent "energy." Even if the physical frontiers were closed, Turner predicted, "American energy will continually demand a wider field for its existence" ("Significance of the Frontier" 37). Tesla, who was accomplishing materially what Turner spoke of metaphorically—widening the possibilities for the production, transmission, and consumption of "American energy"—couched the "pioneering" of electrification in frontier rhetoric when he asked in 1897: "For where is there a field, in which [the electrical engineer's] God-given powers would be of a greater benefit to his fellow-men than this unexplored, almost virgin, region, where, like in a silent forest, a thousand voices respond to every call" ("On the Problem" 103). For Turner, the "virgin region" was geographic; for Tesla, it was electric. Putting James, Turner, and Tesla into conversation highlighted an interdisciplinary tendency of late nineteenth-century thinkers to use electrical metaphors to consider both the innermost landscapes of the mind and the seemingly endless landscapes of westward (and electrical) expansion.

The majority of the eighty-plus attendees seemingly ignored my thesis about American intellectual history; they heard about Tesla. Following my presentation, an open question-and-answer period was dominated by questions about Tesla, which evolved into comments and eventually the voicing of random, Tesla-related conspiracy theories. The evening was entertaining, but further research about this polarizing figure seemed like unnecessary baggage for me to take on in my rhetoric-focused dissertation.

Perhaps this was a mistake. Tesla has been neglected by histories of science and technology (and entirely overlooked in rhetoric and writing studies). In 1888, six years after immigrating to the United States, this tall Serbian with piercing eyes, who spoke six languages, invented and displayed an alternating current system that sparked the process of worldwide electrification. Between 1891 and 1900, in his late thirties and early forties, Tesla-the-inventor obtained dozens of patents, helped win the "battle of the currents," and became as famous as Thomas Edison. Meanwhile, Tesla-the-scientist was compared to other major figures in physics and electrical engineering including William Crookes,

James Clerk Maxwell, and Heinrich Hertz. After 1900, Tesla's career began to disintegrate. In 1943 he died poor, discredited, and alone in his room at the New Yorker Hotel (less than a mile from the future Nikola Tesla Corner).

Tesla's somewhat mysterious demise and the recent realization of some of his vision for wireless technologies and artificial intelligence have helped transform this tragic figure into a cult hero. That figure is what the audience at the NYPL wanted to hear about; however, at the time, Tesla was not getting serious scholarly attention. Most of my colleagues only recognized Tesla as the character played by David Bowie in the science-fiction film *The Prestige* (2006), in which "Mr. Tesla" invents a magical duplicating machine and is hounded by Edison's cronies. Others were familiar with his name because of Tesla Motors, which in 2010, as I was writing and making daily acknowledgments of the Tesla Corner sign, was about to make an initial public offering on the New York Stock Exchange. Amid this period of increased Tesla popularity, the sign, perplexingly, disappeared.

Further research regarding Tesla was not my priority, but when I saw that the sign was missing, I wanted answers. As I wrote emails to the New York City Department of Transportation, Department of Parks and Recreation, and the Bryant Park Corporation, I tried to mimic the outrage I imagined would have been felt by one of the Tesla conspiracy theorists I had met at my lecture. I wrote that I was appalled that the sign had been removed or stolen, outraged by "this disgrace to the memory of Nikola Tesla," and certain that "significant parties interested in Tesla's legacy" would not rest until this mistake was corrected. A few days later I received a response from the management company responsible for a renovation of Bryant Park:

Daniel:

The Tesla sign was inadvertently removed when we installed the new Bryant Park style illuminated street name sign. I am retrieving it from our contractor. Your sign would be very much improved and dramatic if it shared the design/style as ours. Would you be interested in purchasing one of these illuminated signs so that it matches ours? If so, I will provide you with the cost and schedule for this. Thanks and our apologies for accidentally removing the Tesla sign.

From the white noise of my mind, a signal became discernible. "Yes," I responded, "please send the cost and schedule." I tried to conceal my excitement and ended, "thank you for helping to restore this

important honor to Tesla." I kept reading the email, coming back to the same line and one specific word, over and over: "Your sign would be very much improved . . ."

I had tried to sound authoritative in my email, but I had no real responsibility for the sign or the resources to purchase a "much improved and dramatic" replacement.¹ Fortunately, a week later, rather than the cost and schedule, I received an email saying that the management company had ordered a new sign (and they did not expect me to pay). Along with this came an inquiry from Craig LaCuruba, the person from the management company responsible for the renovation project: "I just read a book about Edison. What's the first one I should read about Tesla?"

The signals were being received—and strengthening. The new sign was ordered, Mr. LaCuruba seemed personally concerned, and the "Edison versus Tesla" rivalry had been activated. I responded enthusiastically, citing two popular Tesla biographies and concluding with what seemed like a long shot: "ps. Is there a plan for the old sign? Could it be purchased?" Mr. LaCuruba quickly responded: "I'll hold onto it for you."

For the next few months, I continued my routine and focused on the last two commands of my dissertation mantra: Defend, Deposit. In April 2011, shortly after the new Nikola Tesla Corner sign was installed and the dissertation was defended, Mr. LaCuruba and I met on the steps of the NYPL. I offered him a copy of the most accessible Tesla biography available at the time, *Tesla: Man Out of Time* by Margaret Cheney. He handed me the older Nikola Tesla Corner sign with white lettering on a reflective blue background. A few weeks later, I deposited the dissertation and then received my doctoral diploma. Today, the Nikola Tesla Corner sign with interior illumination (which is indeed much improved) stands over the corner of Bryant Park. Another, smaller Nikola Tesla Corner sign with white letters on a reflective green background has been mysteriously sited across Sixth Avenue. The former Nikola Tesla Corner sign hangs above my fireplace.

PART 3. INCREASING TESLA'S WIRELESS SIGNALS

Investigating the missing Tesla sign and then receiving this special artifact was certainly serendipitous. The experience renewed my interest in Tesla and his writing and taught me two lessons about research: first, negotiating the tensions between the archive (which included Tesla's essays, lectures, and interviews) and the environment (from which the Tesla sign disappeared) can be critical. Second, a rhetorical analysis, like

the alternating currents Tesla mastered, can be enhanced by alternating from close readings and the “wired” connections between authors and their texts to ephemeral contexts and the more socio-cultural “wireless” forces that influence communication acts at certain times and places. To clarify the dialectics between archive and environment, text and context, this final section turns to Tesla’s place in the network of metaphors, definitions, and various manifestations of electricity and landscape discussed in “Power-Lines” and how my attention has since been returned to see Tesla as a rhetorician promoting wireless ideas in a particular, pre-wireless context.

In addition to being an inventor and visionary, Tesla was a fairly prolific writer and frequent public speaker between 1888 and 1901. In my initial readings of Tesla’s writings and speeches, I was pleased to find beautifully poetic views of electricity, nature, and sense perceptions. For example, in “On Light and Other High Frequency Phenomena,” Tesla describes the incredible sensitivity of the human eye and its close relation to intellect. He ruminates, “In no way can we get such an overwhelming idea of the grandeur of Nature, as when we consider, that in accordance with the law of the conservation of energy, throughout the infinite, the forces are in a perfect balance, and hence the energy of a single thought may determine the motion of a Universe” (*The Inventions* 298). Such poetic claims may not be scientifically accurate or practical, but for my study they clearly registered as akin to popular representations of electricity and nature in American literature, especially those composed by Ralph Waldo Emerson.² Tesla and Emerson envisioned the potential for “a single thought” to have far-reaching consequences and used electricity as a way to present the pervasiveness, intensity, and evanescence of such thinking. For example, in “Nature,” Emerson relates the act of reasoning to “an instantaneous in-streaming causing power” (47); in “The Divinity School Address,” he urges us to “see how this rapid intrinsic energy worketh everywhere, righting wrongs, correcting appearances, and bringing up facts to a harmony with thoughts” (77); and in “The Poet,” published in 1844, the same year Samuel F.B. Morse sent the first official electromagnetic telegraph message, Emerson states that the poet has a “dream-power” that must be transmitted: “a power transcending all limit and privacy, and by virtue of which a man is the conductor of the whole river of electricity” (467).

Emerson advised poets to act as “conductors”; Walt Whitman followed suit with his song of the “body electric.” A half century later, Tesla, inspired by his readings of contemporary scientists including Heinrich Helmholtz, Edmund Spencer, Carl Stumpf, and Ernst Mach,

took the idea a step further, and concluded that if he could decipher and then re-create the electric vibrations and currents he believed initiated all thoughts and sensations in the human nervous system, then he could use attuned frequencies to produce and control the circuits and “thoughts” of an external mind (“On the Problem of Increasing Human Energy” 27). Novelists and poets in the second half of the nineteenth century often acknowledged electricity in their bodies, in nature, and in the national “body electric”; Tesla wanted to design and program an *artificial* body electric. This remote-controlled automaton, he predicted, would be “a machine embodying a higher principle, which will enable it to perform its duties as though it had intelligence, experience, judgment, a mind” (“On the Problem of Increasing Human Energy” 23).

These primarily textual connections seemed to “wire” Tesla into the humanist network of American thinkers, including Emerson, James, and Turner. Additional literary and philosophical connections have since been revealed in Bernard Carlson’s thorough biography, *Tesla: Inventor of the Electrical Age* (2013). Carlson shows the importance of Tesla’s upbringing in the Serbian Orthodox Church and his lifelong appreciation for poetry, including the work of Goethe and Jovan Jovanovic’ Zmaj (whose work Tesla translated from Serbian into English). As Tesla’s closest friend, Robert Underwood Johnson, explained in a letter to faculty members of Columbia University urging them to award Tesla an honorary doctorate (which they did): “I may say that he knows the language and is widely read in the best literature of Italy, Germany and France as well as much of the Slavic countries, to say nothing of Greek and Latin. He is particularly fond of poetry and is always quoting Leopardi or Dante or Goethe or the Hungarians or Russians. I know few men of such diversity of culture or such accuracy of knowledge” (quoted in Carlson 204). Tesla’s “diversity of culture” can be witnessed throughout his writing, and the sweeping success of his early speeches, patents, interviews, and essays provides critical *context* for understanding his rhetorical successes as well as his professional failures.

Neither this context nor a full analysis of Tesla’s rhetoric can be developed here. The Tesla sign nevertheless sparked my interest, Carlson’s biography “stepped up” the signals, and my vision of a Tesla-focused rhetorical analysis has changed. The foundation for this new project is the fact that between 1888 and 1893, years before he began his attempts to send power across the Atlantic, Tesla, his financiers, and his patent lawyers composed powerful arguments for Tesla’s AC inventions. As Carlson explains, “By carefully shaping the discourse

about Tesla's motor; they effectively altered the ways in which electrical engineers thought about motors in the utility industry and thus created a 'space' for Tesla's invention" (116). Grafting such a space requires diction, images, and metaphors that resonate appropriately with an audience. For a time, Tesla was a master rhetorical craftsman. In 1891, during a lecture at Columbia College (which at the time was on Forty-ninth Street and Park Avenue), Tesla explained to an awed audience that the electrostatic forces he had harnessed to illuminate lightbulbs without the use of wires provided merely a glimpse of the dynamic, ephemeral, and transcendent presence of "nature's immeasurable, all-pervading energy" (Carlson 145). Nature's electric forces, Tesla explained, "ever and ever change and move, like a soul animates an innate universe" (145–46). After speaking for almost three hours, waving glowing bulbs and touching magnetic induction coils with his bare hands, Tesla concluded by again evoking the audience's wonder: "We are whirling through endless space with an inconceivable speed, all around us everything is spinning, everything is moving; everywhere is energy" (197). The future health and welfare of mankind depended on "availing ourselves of this energy more directly" (197). Simultaneously sparking the imagination with his words and touching the coils with his bare hands, Tesla generated a feverish expectation that he might soon tap the potential of nature's pervasive energy and usher in an electrified *and* wireless society.

More immediately, Tesla's 1891 speech and demonstration turned the tide in the "battle of the currents" between his alternating current and Edison's direct current systems. During this publicity battle, both Tesla and Edison used multi-modal arguments to sway diverse audiences. Edison, Bazerman explains, was "savvy enough as a rhetorician to use . . . material arguments" such as night lighting, electrocutions, and consistent service to show electricity's wonder, power, and profitability to financial backers, patent offices, and the press (*Language of Edison's Light 3*). Tesla seemed poised to have similar success. In response to his 1891 lecture, the *New York Times* article "Wireless Electric Lamps" praised Tesla for combining "the most occult branches of theoretical electricity" with "Layman's descriptions" of how electric currents were used in lighting systems. A writer from *Harper's Weekly* also focused on Tesla's presentation skills and congratulated the foreign scientist for describing complex theories in "pure, nervous English" during a three-hour "rhetorical performance" (Weizler).

Tesla's rhetorical performances continued, even as his empirical research and financial backing faltered. In 1900 Tesla published

a 22,000-word manifesto "On the Problem of Increasing Human Energy," which included theories related to human intelligence, fertilizers, fighting machines, and wireless devices that could be used to communicate anywhere on the planet. While imploring for sanitation reform, Tesla argued, "for every person who perishes from the effects of a stimulant, at least a thousand die from the consequences of impure drinking water" (11). The idea seems valid, but how did Tesla reach this figure? Without a clear answer, an op-ed in a New England newspaper complained, "Mr. Tesla [is] more of a rhetorician than a scientist." The biting critique continues, "When Mr. Tesla, who has managed to get a reputation as a scientific man, goes into the realm of rhetorical sentiment and calls it science he does a grave injustice to men who are less showy, but more dependable" (*Evening Standard*). Indeed, by the turn of the twentieth century, it seemed that Tesla's rhetorical prowess had in some sense begun to overshadow his scientific reputation and practical inventions.

The shift from text to context in my rhetorical analysis has helped to boost my appreciation for the "wireless" signals surrounding Tesla. Analyzing the entirety of those signals and the ways they intersected Tesla's rich cultural diversity, his willingness to engage popular culture, and the expectations of his audiences (tabloid and trade journal readers, scientific peers, patent lawyers, and financiers) will require additional research. Yet, in addition to gaining a better understanding of the wired and wireless forces networks that shaped Tesla's writing and its reception, it might also be helpful for scholars to consider the signals Tesla received from his environment. Indeed, as Tesla fed pigeons near the corner of Fortieth Street and Avenue of the Americas almost a hundred years ago, he may have looked up to see a web of wires. Beginning in 1888, many of Manhattan's telegraph and telephone wires were buried in the tunnels being dug for the subway, but as Tesla was promoting wireless transmission of power, power lines were just beginning to stretch across the planet. Years after his plan for wireless transmission systems failed, Tesla may have sat near the site where his sign would someday disappear, glanced at the wires hanging over Sixth Avenue, and imagined how his life may have been different if his wireless systems had made this wily clutter obsolete. Then again, had Tesla's visions for wireless come true, subsequent overhead wires may have been absent from our planet, leaving fewer threads for researchers like me to serendipitously follow through the landscape and one less set of lines to read between in the archive.

Notes

1. I still do not know who initiated the process to commemorate Nikola Tesla Corner. As of January 2015, the New York City Department of Transportation has attached a second Nikola Tesla Corner sign to a street pole on the northwest corner of Fortieth Street and Avenue of the Americas (the original location is the northeast corner). This duplication implies that the initial statue for honoring Tesla with a street corner (now corners) may be unclear.
2. Emerson is discussed at varying lengths in many new studies of electricity and nineteenth-century culture, including Eric Wilson's *Emerson's Sublime Science*. Sam Halliday's *Science and Technology in the Age of Hawthorne, Melville, Twain, and James: Thinking and Writing Electricity*, and Paul Gilmore's *Aesthetic Materialism: Electricity and American Romanticism*, which examines Emerson as part of a "distinct strain of romantic thinking" that emerged from literary, popular, and scientific understandings of electricity (6).

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