

Book Review

Power Lined: Electricity: Landscape and the American Mind—Daniel L. Wuebben (Lincoln, NE, USA: Univ. Nebraska Press, 2019, 236 pp.)

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■ **LET ME BEGIN** with a provocation: I assert that Henry David Thoreau loved the telegraph. If you have recently read *Walden*, you might well dispute this with the following passage from Thoreau's most notable work:

"We are in great haste to construct a magnetic telegraph from Maine to Texas, but Maine and Texas, it may be, have nothing important to communicate... We are eager to tunnel under the Atlantic and bring the old world some weeks nearer to the new, but perchance the first news that will leak through into the broad flapping American ear will be that Princess Adelaide has whooping cough."

And I will take as my rebuttal a passage from Thoreau's journal of 1851. In that year, walking alongside some telegraph wires in Concord, MA, USA, he hears the conductors vibrating in the wind. Enthralled by their sound, which he compares to an Aeolian harp, he remarks in his journal that the wires reminded him that "there were higher, infinitely higher, planes of life, which it behooved me never to forget." The Aeolian harp was an instrument devised in Europe, about 200 years before Thoreau's writing, whose

sound evolved from the vibrations induced in a set of gut strings by the wind.

This small contretemps whose source is one man gives us a glimpse of the very rich subject in Daniel Wuebben's book: a long history of how electric lines (power, telephone, and telegraph) and the poles and towers supporting them have engaged the attention of poets, essayists, conservationists, artists, and politicians. His work has a well-defined beginning: in 1844, Congress appropriated money for Samuel Morse to construct a telegraph line stretching between Baltimore and the District of Columbia. Strange to say, initially Morse planned to bury the wires underground but a series of mishaps resulted in their being suspended between poles. There seems to have been no objection to their appearance and the first message sent was, famously, "What hath God wrought." The message was appropriate: for the first time in the United States, communication had been reliably separated from transportation. By 1851, more than 75 companies were sending Morse-coded messages over wires with 21,000 miles of wires, much of it along railroad rights of way—partly because railroads were a natural ally of the telegraph, relying on the telegraph to avoid accidents and send messages of the status of trains. Seeing telegraph poles became part of the landscape viewed by a train passenger.

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About 30 years later, there were 291,000 miles of telegraph wires and 34,000 miles of telephone wires, the telephone having been introduced circa 1876 which was beginning to push the telegraph to near obsolescence.

There is some irony in Morse's having started the revolution marked by poles and wires. He was a landscape painter who lectured on landscape gardening and painting. An article in 1846 in *Yankee Doodle Magazine* mocked Morse by sarcastically referring in a cartoon to his "great national historical work of art" a rather ugly picture of poles and wires. Starting in the early 1880s, the public saw yet a third set of wires on poles: electric power lines. Interestingly, initially, some telegraph wires were used to convey small amounts of power: in 1896, Western Union Telegraph used its wires to carry energy from a hydroelectric installation at Niagara Falls to New York City.

Following Morse's work and the spreading of wires, several major intellectuals were so enthralled that they used metaphors of electricity in their writing. Wuebben quotes Emerson, who asserts that "the Poet" had a power "transcending all limits and privacy" and was a "conductor of the whole river of electricity." Later, in 1855, Walt Whitman in his *Leaves of Grass* has a poem "I Sing the Body of Electric," which uses a metaphor of electricity as a juice swimming from body to body. Melville had also used electricity as a metaphor in discussing kinds of fish in *Moby Dick*, while Thoreau warned that the telegraph would clutter minds with useless news. Wires and poles found their way into landscape painting. Most notably just nine years after Morse's wires connected Baltimore and Washington, Asher Durand, a major American landscape artist, exhibited a painting, *Progress (The Advance of Civilization)*, depicting its left trees, forests, and Native Americans, while on the right, impinging on them, were steamboats, railroad, wagon trains, and telegraph wires.

Because of the benefits of telephone, telegraph, and electrification, the public was initially accepting of the appearance of wires and poles. The principal exception was New York City, especially Manhattan, where a forest of these artifacts was soon evident. Wuebben shows us an illustration from *Harper's Weekly* of July 1889: a dreadfully dense thicket of wires and poles at the corner of Broadway and John Street which over the next two decades were to be replaced with buried wires. The book mentions

90-ft poles carrying 30 cross arms each with up to 300 wires. If you visit Manhattan today, there is no sign of wires anywhere. Aside from their ugliness, the burial of wires in Manhattan was motivated by a number of fatal accidents involving pedestrians who came in contact with downed conductors or were crushed by poles. In the period between 1887 and 1889, 17 New Yorkers were killed by electric shocks, in many cases from wires in the street. The blizzard of 1888 in New York served as a further catalyst for burying wires. Telephone, power, and telegraph poles came down in abundance; communication to and from New York was paralyzed, while telegraph signaling between New York and Europe, which involved cables buried in the ocean, was, ironically, unaffected.

Power Lined is book-ended by two geographical regions: New York in the late 19th century and California in the 20th. However, California in a way had an early start: in 1879, three years before Edison began selling electricity in New York, San Francisco had an electric light system: unlike Edison's installation, it used arc lamps instead of Edison's later, incandescent lights. The California story of electricity has its roots in the late 19th century when it was realized that distant streams and rivers would provide power to generate electricity. As early as 1895, 40-ft cedar poles supported wires at 11,000 V, three phases, from Folsom, CA, to downtown Sacramento, where it found a use (after the voltage was reduced) in street lamps, street cars, motors in shops, mills, and breweries. Hydroelectric power flourished so that by 1924, 23.5% of California homes had electricity when compared to just 2.5% nationwide. In 1910, Los Angeles could boast of having the highest consumption of electric power of any city in the United States.

The high-voltage lines crossing the state of California were supported not by the familiar poles that we see in most residential neighborhoods in the United States, but by enormous pylons or towers, many times longer and wider than poles, which maintained power lines carrying kilovolts of potential, hundreds of feet above the ground. Power companies, aware of public concerns about these enormous structures, began to incorporate images of towers and lines in their reports and stationery, trying to convince the public that their spread was part of the romance, starting with pioneers, of settling the West. By 1917, Southern California Edison was the fifth-largest utility

in the United States. In 1917, the company advertised itself with an Adonis-like figure holding a transmission tower. The historian Frederick Jackson Turner presented a paper in 1893 to the American Historical Society postulating that the American frontier had at last closed, with ramifications for the American psyche. Turner maintained that Americans would find new frontiers, and by the 1920s, an American electric power company, Samuel Insull's Middle West Utilities picked up on this trope proclaiming that the "equalitarian" process of electrification was the next frontier.

Receptivity to power lines and poles in rural areas

The 1930's was a decade of receptivity to power lines and poles in rural areas, thanks to the Rural Electrification Act of 1936. This part of Roosevelt's New Deal provided small towns and groups of farmers with the means to finance electrification. The effects were felt as late as the 1950s, by which time the act had helped bring electricity to 79% of American farms. In 1933, only 11% of farms had electrical service. Imagine walking into a barn at night and having to carry a lantern in one hand so that one can tend to the livestock versus just flipping a switch to turn on an overhead bulb. For the most part, farmers were receptive to having wires and poles spread over their land. Between 1936 and 1941, landowners in the country granted over 1 million separate easements for electricity. In 1941, folk singer Woody Guthrie wrote and performed a song celebrating the Columbia River hydropower which served to bring electricity to rural areas.

The 1960s was a period in which pressure to expand power grids in California was often countered by the public's demand that wires be buried—a costly undertaking. The power industry in California countered with an effort to design and construct attractive towers and pylons. A major figure in designing these supports in California was the noted American industrial designer, Henry Dreyfuss. His exposure to the problem of making them attractive has its roots in 1931 when Bell Telephone Laboratories approached the 27-year-old Dreyfuss with the problem of making telephone poles more sightly. His reputation grew with his design of such common household products as telephones, vacuum cleaners, and thermostats. Some 30 years later, he was engaged by Southern California Edison to design

attractive pylons for its electric power distribution. By then, much public opinion was mobilized against the spread of towers and lines. Between 1964 and 1968, Dreyfuss made at least three types of designer power lines. One, called the "Starburst" can still be seen from Hollywood Boulevard. In 1969, Dreyfuss and the electrical executive Robert Coe received the national "Design in Steel" award for their "futuristic" and "ultra-modern" structures. Based on his work, Dreyfuss authored an entire book, *Esthetic Designs for Transmission Structures*. He maintained that these monuments of engineering could and should have the same visual beauty as some of the great 20th-century bridges.

After World War II, the public's warm feelings toward rural transmission lines cooled. Much of the book deals with how this played out in California. Interestingly, Frank Lloyd Wright complained that the view from his house would be spoiled by pylons and wires and it is thought that he complained to no avail to President Truman. Wuebben tells us that even today the view from Wright's architectural gem is compromised and that "lattice steel towers mar the vista from this desert jewel of American architecture."

Much of the latter quarter of *Power over People* deals with social protest and political uprisings directed toward preventing, typically, the appearance and encroachments of high-voltage lines and their supports. Unlike in the 1930s, the American people mostly had electric power, and the growth of high-voltage distribution systems in no way seemed to affect their ability to have electricity. In some cases, protestors engaged not only in peaceful protest but in guerilla warfare. Minnesota was the site of some of this. The CU Project was a 430-mile, 400-kV line that went from central North Dakota to Minneapolis and St. Paul. From 1976 to 1978, 120 power line protesters of the project were arrested in Minnesota and were charged with trespassing and assault.

Battle between Southern California Edison and Chino Hills

A major and concluding subject of the book is the battle between Southern California Edison and the people of Chino Hills. In 2009, the California Public Utilities Commission allowed California Edison's plan to construct a 500,000-V elevated transmission line right down the middle of a suburban neighborhood, Chino Hills, for 3.5 miles. A thousand homes

would be within 500 ft of the towers. The book illustrates one such tower, dwarfing a small private residence—and one sympathizes with the well-organized protestors. Members of the Commission visited the proposed site and saw some of the recently erected towers. In 2012, the Commission voted 3–2 to force Edison to remove these towers and to bury 3.5 miles of the line. Wuebben asserts that this decision was to cost Edison \$300 million. A member of the commission who had changed his vote, thus causing removal, said that the “towers did not seem right in the community.” The organization fighting the lines and towers, *Hope for the Hills*, had made effective use of videos on YouTube as well as postings on Twitter and Facebook. Wuebben observes that “During the second half of the 20th century and the first part of the 20th, utopian visions of America’s industrial ascendancy have given way to greater technological pessimism and a dawning environmental consciousness.” He also observes that when a utility is forced to alter its plans, it means extra financial costs which may be passed on to the shareholders and ratepayers, or taxpayers in a distant city. Among the major issues which he briefly touches on is the question of health hazards for those living near power lines. Power line opponents have been claiming since 1979 that children living in homes with high electromagnetic fields have a greater chance of developing leukemia, citing an article in the *American Journal of Epidemiology*. This theme was explored in Paul Brodeur’s book *Currents of Death* (1989). However, in more recent decades, there have been numerous refereed articles debunking the link between cancer and power line fields. It seems as if there is a need for a new book examining this subject. On the subject of new books, I would also suggest one treating the recent occurrences in California of fires, in wooded areas, caused by power lines.

Reading Wuebben’s work is a rich experience. One particular strength lies in his showing how power and telegraph lines appear in places one

would not expect. He alludes to a 1930 poem by W. H. Auden containing the lines:

“Pylons falling or subsiding, trailing dead high-tension wires”

while a poem by Stephen Spender, another British poet, three years later has

“That trails black wire
Pylons, those pillars
Bare like nude giant girls that have no secret.”

DANIEL WUEBBEN is a professor with the English Department of the University of Nebraska and his book was published by that university’s press. Although I strongly recommend this work to historians of the nexus of technology and society, I want to end by saying that I hope someone from that press is reading this review. This book, at under 200 pages, sells for \$45. I took it home from a nearby store, began to read it, and almost immediately the pages, which are glued, not sewn in place, began to fall out. I own paperback books with sewn bindings that are 50 years old and have never lost a page. ■

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