

POWER LINES: ELECTRIC NETWORKS AND THE AMERICAN LITERARY
IMAGINATION

BY

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DISSERTATION

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Abstract

Between 1870 and 1916 electricity occupied the minds of some of America's most prominent authors. Before Mark Twain published *A Connecticut Yankee in King Arthur's Court* (1889), he visited Nikola Tesla's laboratory and recognized that the alternating-current machine he saw there would revolutionize American life. Before Jack London tried his hand at authorship, he spent six months training to become an electrician. My dissertation explores the literature of this period in relation to the rise of electric networks to reveal a complex and consequential set of interactions with technology previously unaccounted for within the scholarship of "the machine age." Where the machine signified the sudden intrusion of industry into pristine nature, electricity represented latent power in the water and wind; where the machine connoted determinist aspects of the human self, electricity signified vitality, inventiveness, and even the sublime. By tracing the evolution of these technological symbols, I argue that writers of this era developed new literary forms, as well as rhetorics of the modern network society, that continue to shape our understanding of technology and modernity.

The field of literary production incorporated electricity in everything during the turn of the twentieth century, from improved methods of printing (including electrotype and high speed presses) to figurative language that linked electricity with modern life. At the same time, electrical advertisements and trade journals frequently included poetry and literary allusions, while an array of scientists and technologists, from Harvard Professor of Physics John Trowbridge through General Electric engineer Charles Ripley, took up literary forms to capture the beauty and power of electricity. This feedback between technologists and literary artists

contributed to an electric vocabulary—marked by new concepts like “electrocution” and “live wire”—which, I argue, inflected the rise of the modern American novel.

Chapters One and Two investigate how electric execution challenged conventional narratives about technological modernity. In *A Connecticut Yankee*—published after New York passed its Electric Execution Act (1888) but before the first electric execution—Mark Twain illustrates the tension between the dangerous, tantalizing power of the electric charge and the symbolic progressivism of the electrical network. Alternating between technical and melodramatic depictions of electric circuits, he situates the fatal electric spark on the borders between realism and fantasy. Yet after the chair was first put to use in 1890, neither of these representational frameworks appeared suitable for describing the social meanings of this new device. Even Alphonso David Rockwell—an electro-medical doctor who helped “improve” the electric chair—described the electrocutions he witnessed as “unreal.” Drawing on archival and popular texts, Chapter Two explores how authors such as Stephen Crane, William Dean Howells, and Gertrude Atherton experimented with new representational frameworks for describing electrocution. Unlike writers who depicted electrocution as instantaneous, Atherton illustrates how the electric chair’s meanings are consistently produced around, as well as within, the moment of electric shock. In *Patience Sparhawk and Her Times* (1896), she describes her protagonist’s experience of the execution chamber as meta-textual; in the moments leading up to her electrocution, Patience chooses to act like a hero in a sensational news story rather than a person who has been wrongly sentenced to death. I argue that Atherton’s romance implicates modern systems of representation with a new form of capital punishment by hinting that the experience of electrocution could be mediated through the circulation of stories.

Chapter Three reveals that literary artists found the power grid as complex and alluring as the electric chair. This chapter shows that Mary Hallock Foote's novella, "The Harshaw Bride" (1896), and Jack London's Sonoma Valley novels (1910-1915) portray the power distribution system as an emergent dimension of regional cultures. By illustrating how electrical networks might shape and be shaped by Western communities, these texts raise questions about contemporaneous narratives that linked the laying of telegraph wires to the "closing of the frontier," and, concomitantly, the supposed disappearance of the Native American and the pioneer. This chapter argues that Foote and London's western electrification narratives complicate the generic categories of regionalism and naturalism, respectively, by incorporating elements of utopianism and romance to describe the promise of new electrical frontiers.

Western depictions of healthy, communal electrical grids anticipate a subgenre I call the "revitalization narrative," a class of literature that describes the reawakening of bodies and communities. Defining and analyzing this subgenre, Chapter Four investigates how early twentieth-century authors used electrical analogies to grapple with changing definitions of health, life, and death. This chapter argues that Pauline Hopkins and Charlotte Perkins Gilman's euphoric descriptions of electrical revitalization counter medical discourses that privileged certain bodies while pathologizing others. Although these authors had divergent political aims, both narrate modern life in terms of a growing network society, writing against the individualistic paradigms of naturalistic literature. In so doing, they imagine a stronger relationship between electricity and the pastoral than we have previously seen in American literary history. They depict electricity moving like water through a landscape to refresh

communities and individuals within them, anticipating rhetorics of sustainability that would gain prominence later in the twentieth century.

Power Lines analyzes how electric technologies impacted the development of American prose fiction during the turn of the twentieth century. I began this project in conversation with scholarship on the literature of “the machine age,” but recent work on electricity and American literary modernism and Romanticism (by Mark Goble and Paul Gilmore, respectively) signals the emergence of a new subfield that my work directly complements and expands. By examining how Gilman blends utopianism with scientific realism to describe humans as “storage batteries” —or how London shifts away from the modes and techniques of literary naturalism to describe idyllic and sustainable electric grids—I contend that we can trace how new networks inspired authors to complicate or to move outside of prescribed genre conventions. Ultimately, I argue that authors who experimented with new electrical forms and symbols created narratives that anticipated modernism by troubling the boundaries between realism, romance, regionalism, and utopianism.

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Research fellowships at the Bakken Library and Museum and the Smithsonian Institution's Dibner Library have expanded my understanding of the role of electricity in American culture. The librarians and staff I worked with taught me that the most useful resources are not books, but the people who collect and archive them. While I was in residence at the Bakken, Elizabeth Ihrig helped me carefully cut the pages of A.D. Rockwell's autobiography,

she discovered one of my favorite “finds” in the stacks—*the Electrical Boy*, a novel written by a professor of physics—and, in the time we spent outside of the reading room, she introduced me to a number of my favorite recipes! At the Dibner Library, Lilla Vekerdy and Kirsten van der Veen helped me chase leads that I found in technical journals, seeking out new resources on projects like “Giant Power” as I continued my focused research in the reading room. Lilla also introduced me to the interdisciplinary community at the Smithsonian, allowing me to explore most effectively the wealth of resources available in the Institution’s libraries and archives. Their help and support has left me with vast stores of notes and archival materials that will continue to enrich my work for years to come. I cannot wait to revisit my research materials as I expand the historical dimensions of this project to include longer discussions of technical writing and material culture.

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creative and intellectual development in multiple ways, offering challenging and thoughtful comments on almost every document I produced during graduate school. As he helped sharpen my focus, he also allowed me the freedom to follow my ideas in different and often surprising directions. Professor Markley shaped my growth in the graduate program in innumerable and inimitable ways, and the skills and acumen I have gained from his mentorship will remain with me for the duration of my intellectual development. I met Bruce Michelson later in my graduate career, but he has been no less influential in inspiring and directing my intellectual curiosity. Professor Michelson patiently and intently helped hone my focus and my prose on multiple drafts of each chapter. I left each of our meetings with a head and notebook full of new ideas, but also with a strong sense of which ideas I could pursue most productively. These advisors, along with Rayvon Fouché and Melissa Littlefield, have made the dissertation-writing process fun and rewarding. An interdisciplinary committee, they have challenged me to articulate my methodologies and intellectual investments clearly, and, most importantly, to eschew binary frameworks as I confront the rich historical complexities of the archive I assemble in this dissertation. It has been an honor to work with each of my committee members; I am tremendously grateful for the guidance they have given me, and I look forward to integrating their advice into my future work as this project continues to mature.

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Introduction | “Power Lines: Electric Networks and the American Literary Imagination”

Power Lines: Electric Networks and the American Literary Imagination recovers a history of writers and public intellectuals grappling with new ways to understand electrical networks and human life. Between 1870 and 1916, authors ranging from Mark Twain through Charlotte Perkins Gilman sought to develop new vocabularies and literary forms that could describe the experiences of electricity—both revolutionary and mundane—that could not be captured with the words or tropes they inherited from literary predecessors such as Benjamin Franklin, Margaret Fuller, and Walt Whitman.¹ The authors and public figures I include in this study reflected self-consciously on the difficulties of describing new electrical technologies. For example, in an article for the sensational New York weekly, *the World*, Stephen Crane decries the irony that, “as a new people, we [Americans] prefer to grope in the past.” He argues that a new type of realistic writing, rather than a continued dependence on bygone “romantic” conventions, will be necessary to comprehend social and cultural implications of technologies like the electric chair—even as he contends that romantic conventions *can* aestheticize older networks, like railroad systems (“The Devil’s Acre”). While we might expect the electric chair to pose a conceptual challenge to Gilded Age writers, “The Devil’s Acre” speaks to rhetorical challenges that transcend his fascination with the electric chair itself. This piece struggles to reimagine modern American life in terms of what I will call an *assemblage*; it recognizes that distributed associations produce meanings and effects that resist familiar narrative modes and vocabularies.²

To generalize the imaginative challenge Crane confronts in “The Devil’s Acre,” we might read this article in conjunction with “the Dynamo and the Virgin” (1900), the famous memoir in which Henry Adams observes a dynamo at the Paris Exposition. Adams reflects, “Satisfied that the sequence of men led to nothing and that the sequence of their society could lead no further, while the mere sequence of time was artificial, and the sequence of thought was chaos, he turned at last to the sequence of force; and thus it happened that, after ten years’ pursuit, he found himself lying in the Gallery of Machines at the Great Exposition of 1900, his historical neck broken by the sudden irruption of forces totally new” (382). Crane and Adams are confounded by a failure of sequential narrative, and by the incongruity between what they *see* (a wooden chair with straps and the metal casing of a generator, respectively) and what they think these technologies *mean*. Both suggest that electrical networks demand a new imaginative response, but neither knows exactly what that response should be.

Adams’s and Crane’s frustrations mark a discontinuity between the visible infrastructure of electrical networks and the metaphors available to describe them. As electricity became a formidable presence in urban centers on the East and West coasts, the uneven development of power transmission, transportation, and communications infrastructure left sidewalks cluttered with poles and wires (see Figure 1), until Boards of Electrical Control (discussed in my first chapter) began to move cables underground and long-distance power transmissions systems (discussed in my third chapter) increased the area between the generator and the user. As Martin Heidegger notes, “[t]he essence of modern technology has for a long time been concealing itself, even where power machinery has been invented, where electrical technology is in full swing” (22); despite the significant footprint that electrical networks left on city spaces during the late nineteenth century, electrical power was often described as “clean” and “invisible,” because arc

and incandescent lights did not emit smoke from the source of illumination.³ After 1890, long-distance power transmissions projects in the West compounded the supposed invisibility of electric power by further separating the power source from the power switch, and changing the culture of American technology for decades to come.



Figure 1: Electrical wires in New York during the early 1880s⁴

Symbolically clean and comparable in price to power alternatives, electricity crept into cities and suburbs in even more subtle manifestations. Automated assembly lines, electro-plated silverware, glass—even these household components that did not give light, heat or power—proliferated in the marketplace as evidence that electricity was revolutionizing American daily life. The technology that allowed a silver-plated artifact to resemble actual silver muddled

distinctions between authenticity and artificiality, raising questions for artists and authors about the criteria for judging “true” art.

Throughout the Gilded Age, such technologies were promoted as evidence for (and the result of) advancements in health sciences, urban planning, engineering, and other emergent specialties. These rapid changes and the removal of overhead wires for communications and power systems made electricity both omnipresent and metaphorically invisible. At the same time, the imponderability of electrical power evoked an older mythology of lightning bolts and spiritualism.⁵ Mabel Barnes, a visitor to the 1893 World’s Columbian Exposition, captures the muddling of modern and mythic associations in her journal. Personifying “modern science” as the master of a pantheistic force, she describes a display of electric lighting as: “the triumph not of Aladdin’s lamp, but of the masters of modern science over the nature-god Electricity” (qtd in *Electrifying America* 46). Her characterization captures how electrical displays were engineered to displace cause for the embellishment of effect: Barnes sees bright light and cannot see the glass and copper and rubber that make the circuit give off light.

The mix of wonder and reason that we see in Crane, Adams, and Barnes conjures what Michael Davitt Bell calls the “problem of American realism.” Many aspects of daily life in the electric age cannot be captured with the “directness” of a camera or a window (the two primary technological metaphors for literary realism), and therefore cannot be neatly translated into literary language. Understanding the material culture of electric technologies during the Gilded Age lends further insight to this “problem.” After 1890, as central power stations became more common across the U.S., electrical devices that were once powered by batteries that users made by hand were now plugged into outlets that connected homes and office spaces to increasingly-complex systems of wires. Because light and power systems changed how people perceived and

interacted with electrical power, they also changed understandings of the social relations that both depended on and were promoted by these technologies. Not surprisingly, electricity inspired experimentation with language and form at the turn of the twentieth century. Yet insofar as electrical networks challenged the literary imagination, they also represented an opportunity to re-imagine American life in terms of nonlinear, dynamic interconnection.

Historians and literary scholars have noted that electricity became a popular subject of speculative fiction during this era.⁶ However, some of the most influential works on technology and literature have conflated Gilded Age depictions of electricity with other machine-age technologies. By focusing on discussions about emergent electrical networks, *Power Lines* draws out an early literary history of the network society; it creates an archive of experimental literatures that explored the stakes of Americans' growing dependence on electric communications, transportation, and power systems.⁷ This history does not map onto a coherent literary movement; the authors I study complicate received paradigms for describing electric technologies and modernity by experimenting with form and language, but their techniques and successes vary widely. Rather, this project helps us visualize continuities between the era of literary realism and later modernist and postmodernist experiments. It also allows us to explore a moment as rich as those Thomas Kuhn illuminates in *The Structure of Scientific Revolutions* (1962)—a moment when the meanings of electrical networks were still plastic—a moment, in other words, in which imaginative writing about networks still promised to change the way people engaged with them.

Jack London's account of his six-month stint in an Oakland power plant provides an interesting case study in this literary history of the "electric age." Like many other Gilded Age Americans, London hoped for a while that electrical technologies would offer opportunities for

himself and his country that could fulfill the unmet promises of the “machine age.” He recalls that “[t]he jute mills failed of its agreement to increase my pay to a dollar and a quarter a day, and I, a free-born American boy whose direct ancestors had fought in all the wars from the old pre-Revolutionary Indian wars down, exercised my sovereign right of free contract by quitting the job. I was still resolved to settle down, and I looked about me. [...] I must learn a trade, and I decided on electricity” (*John Barleycorn* 187). Convinced that he would become an electrician by working his way up, London “bade farewell forever to the adventure-path, and went out to the power-plant of one of our Oakland street railways” (188).

London’s account of his decision to become an electrician marks a rhetorical change in *John Barleycorn* (1913), his autobiographical treatise against alcohol. In this work, London describes his “beastial life at the machine” in language that emphasizes repetition and dehumanizing routinization: “Month in and month out, the shortest day I ever worked was ten hours. When to ten hours of actual work at a machine is added the noon hour; the walking to work and the walking home from work; the getting up in the morning, dressing, and eating; the eating at night, undressing, and going to bed, there remains no more than nine hours of twenty-four required by a healthy youngster for sleep” (62-3). In contrast, he describes the field of electrical technology with all the optimism of the rags-to-riches pulp fictions of his day, explaining his expectation that “[a]ny boy, who took employment with any firm could, by thrift, energy, and sobriety, learn the business and rise from position to position until he was taken in as a junior partner. After that, the senior partnership was only a matter of time. Very often—so ran the myth—the boy, by reason of his steadiness and application, married his employer’s daughter” (187-8). Although his toil in the power-plant would prove as menial and physically exhausting as his work in the cannery and jute-mills, London describes his experience in the

power-plant in markedly different terms. Elsewhere in *John Barleycorn* he underscores the conflict between his humanity and his dehumanization at the machine; in the power-plant, this conflict is transformed—the underlying tension is between fantasy and reality, fiction and demystification.

By the 1890s, when London was seeking work as an electrician, the industry had become highly specialized. Electricians and electrical engineers now earned certification through degree-granting university programs, rather than apprenticeship or experimentation in home laboratories. Nonetheless, narratives celebrating the rise of figures like Thomas Edison and Samuel Insull bolstered the myth that electrical science offered opportunities to any enterprising man, regardless of his formal education.⁸ London's memoir reveals that this dubious myth was useful to the Gilded-Age industrial corporation.⁹ When he arrives at the Oakland power-plant, he notes, "I saw the superintendent himself, in a private office so fine that it almost stunned me" (*John Barleycorn* 188). This display of wealth initially appears to signify the realization of the dream that London pursues when he hopes to work his way "up"— "I told [the superintendent] I wanted to become a practical electrician, that I was unafraid of work, that I was used to hard work, and that all he had to do was look at me to see I was fit and strong. I told him that I wanted to begin right at the bottom and work up, that I wanted to devote my life to this one occupation and this one employment" (188)—but is revealed to represent the strategic exploitation of labor.

London's description of his interview with the superintendent toggles between an account of their dialogue and parenthetical asides that underscore his own naiveté at the time: "as I listened with swelling heart, I wondered if it was his daughter I was to marry"; "By this time I was sure that it was his daughter, and I was wondering how much stock he might own in the company" (189). These asides situate London's aspirations in terms of "the myths which were

the heritage of the American boy” (187). By accentuating his innocence in this way, London heightens the drama of his disillusionment. After six months of shoveling coal to fuel the power plant, he comes to realize that the superintendent’s wealth represents the strategic exploitation of the “American boy” mythology. As he explains, “I thought he was making an electrician of me. In truth and fact, he was saving fifty dollars a month operating expenses to the company” (193).

London’s self-portrait in the power plant captures several cultural and rhetorical shifts that my dissertation investigates. Presenting himself as an honest young laborer, armed with metaphors and aspirations borrowed from the Enlightenment, American literary Romanticism, and contemporary dime novels, London is unprepared for the impersonal and exploitative market strategies that redefined the electrical power industry during the Gilded Age. His inability to succeed in this system results from his outmoded understanding of electric technology and the future it promises. Emphasizing the failure of the rags-to-riches narrative, London translates his autobiographical experience into an imaginative paradigm shift. The discovery that he cannot “begin right at the bottom and work up” forces him to realize that the narrative of his own life more closely resembles a work of literary naturalism than of sentimental fiction.

London’s account of his demystification registers the obsolescence of conventions for describing electricity, labor, and social mobility amid an age of rapid electrification. Yet, as I will discuss at length in my third chapter, his depictions of utopian power grids in his Sonoma Valley fictions reveal his persistent hope that electrical power systems might somehow inspire more equitable social formations and fresh literary forms. Indeed, London and many of his contemporaries express surprise and frustration with the difficulty of describing the complex webs of technological and social interdependencies that defined American life—but they also imagine that new ways of describing electrical networks might actually affect how these useful

systems are managed and incorporated into daily life. Examining the imaginative crisis that specific electrical systems—and networked social and technological interactions more generally—posed to public figures like London, this study proposes a new framework for understanding literary engagements with technology that predate literary modernism, and that complicate the aesthetic engagement with mechanization and industrialization.

In the midst of all of this change, many of the authors and cultural critics I explore in this dissertation explored how electricity might change the landscape of American literary history. Writing in 1903—just as Theodore Dreiser, Jack London, and Frank Norris were becoming literary icons of a new realism—Charlotte Perkins Gilman faulted “current literature” for its obsession with the atavistic individual, identifying the emergence of a culturally-influential trend that would later be called “literary naturalism.”¹⁰ Her treatise *Human Work* sets out, in part, to displace this “call of the wild” literature with a new paradigm that uses electrical interconnection as a central metaphor for modern life (105). I quote Gilman at length because she gestures towards the new literary and social aesthetic that I explore throughout this dissertation. She begins by quoting Walt Whitman:¹¹

‘I think I could turn and live with the animals, they are so placid and self-contained.

‘I stand and look at them long and long.

‘They do not sweat and whine about their condition. [...]

‘Not one is respectable and industrious over the whole earth.’

-WHITMAN

This revisionary tendency is strong in us all, the easy backsliding to the physical freedom and independence of the hunter and fisher. The immediate

stimulus, the immediate action, the supply of one's own needs by one's own efforts,— this is a delight to almost all of us [...] *Current literature is full of this social reversion to-day, this “call of the wild,” this tempting invitation to give it all up and go back to the beginning.*

It is so much harder to pour your life's energies a life long into the Social pool, and perhaps get very little out—and then not what you want. [...]

The gain is this[...]: the Social Organism manifests a wider range of consciousness and activity than any other life-form. [...] In certain creatures which live in groups or herds there seems to be a *very vivid common consciousness on some lines, as shown by the instantaneous nervous transmission in a stampede* [...] With us, in our social relation, there is an enlargement of the sensorium past any measurement we can yet make [...] There is room in what we call “the human heart” for a passionate exaltation of feeling that finds no parallel below us [...this expression] puts in concrete form the intense feeling and then continually transmits it to as many people as are sensitive to that form of expression [...] the rising wave of force prompts to ever greater expression, reaching more and more people. [...] The young human creature, as he begins to grow from the individual animal into social life, feels this intense current of force, the vast and varied desires, the vaster energies. (*Human Work* 103- 107, emphasis added)

Gilman's logic in this passage, and throughout the whole of *Human Work*, seems nonlinear, even disjointed. She sensed that this text was a failure even as she composed it, noting in her autobiography that “This [*Human Work*] is the greatest book I have ever done, and the poorest—

that is, the least adequately done” (275). Even so, in its moments of clarity, *Human Work* reveals how well Gilman understood the allure of the trope of the atavistic individual in the literature of her time. As importantly, this passage details how she uses metaphors of electricity and nervous systems to create a collectivist alternative to the individualist literature she critiques. Becoming tangled in her own syntax, Gilman never circles back to address literature as such; instead her moments of electric social consciousness—her interwoven descriptions of nerves and energies, of sinuous currents of vibrating power—suggest the alternative dream that she seeks.

Gilman’s electric-collectivist alternative to literary naturalism lacks the literary finesse of the authors she sought to depose. *Human Work* did not influence American literary and cultural history in the ways that she had hoped—it was not referenced as experimentations with networked forms became more popular. Nonetheless, this headlong passage is remarkable both for its foresight and for its failure. Gilman recognized that the American literary fascination with the individual could be complemented and complicated by a new emphasis on network connections. At the same time, her meandering sentences and logic illustrate the difficulty of developing a language built around connection. In Gilman’s case, this fantasy of connection is richly complex, because she does not define the social body against individuation; rather, she aspires to describe (and in so doing to call into being) a social and technological assemblage that maximizes the happiness and productive potential of individuals.

Given the difficulty of shifting from a model that valorizes the individual in nature to one that imagines the individual in networks, it is perhaps unsurprising that many of the works I investigate struggle with mixed metaphors and hybrid literary forms. The literary history I explore in the following pages is marked by authorial frustration. When Mark Twain complains to William Dean Howells that he would need “a pen warmed-up in hell” to complete A

Connecticut Yankee in King Arthur's Court (1889), I suggest that he is sensing the difficulty of adequately capturing all of the layered systems he set out to capture in the novel—interconnected ideological systems, including electrical networks, but also including churches, schools, newspapers, and military outposts (*Letters* 514).¹² Though electricity is not always the core *subject* of the literatures I examine, it provides an important analogy that authors turn to when trying to describe these nested systems and interdependencies that were beginning to define modern American life. As I will show in my first chapter, the Yankee, Hank Morgan, translates each of these relationships into electrical metaphors. Whether he is describing a whole new education system or merely a printing press, Morgan describes himself with his hand on the “cock”—a sexualized electric button that controls circuits equally capable of illumination and destruction. Clemens’s layering of metaphors registers the problems that arise from the ambiguity of electrical terminology during the 1880s: notions of masculinity, democracy, and state power were all associated with manipulations of electrical power, making it difficult to imagine an electrified utopia that was not marred by contradiction. Even William Dean Howells’s *Alturia* series, often interpreted as a luddite antimodern fantasy, is built on a foundation of quiet electrocutions that maintain the appearance of order.¹³

In the following pages, I contextualize the Gilded Age novel within the history of electricity to illuminate how these interwoven metaphors help us understand American culture in this moment, and the imaginative challenge of representing complex and dynamic socio-technical systems. Given that the rapid electrification of the U.S. accompanied the rise of the realist and utopian novel, I see the concept of the electrical network and the evolving forms of the modern novel as co-constitutive. In some cases, we can visualize clearly feedback between literary and technological or scientific domains: Walt Whitman first sang of the “body electric”

in 1855, condensing American Romanticists' fascination with life force into a lasting image of overabundant life. Only a few decades later, the term "live wire" was coined by a Kansas newspaper, adapting the discourse of vitality to describe a cable charged with an electric current, and shortly thereafter, author-scientists like William James recycled this new term into a new analogy for human energy.¹⁴ Scientists contributed to this conceptual vocabulary, as well, by incorporating the presumed correlation between electricity and life into their explanations and experiments. George Miller Beard depicted "Edison's electric light" as "the best possible illustration" of the human nervous system, while physiologists Emil Du Bois-Reymond and Hermann von Helmholtz used telegraphic implements in circuit with real sinew and flesh to explore how the body transmits impulses (*American Nervousness* 98).¹⁵ Late in his career, Thomas Edison extrapolated these medical discourses to suggest that simply owning electrical appliances would improve women's neural complexity—literally giving them new "brain folds" that would help them evolve into the equals of American men (Marshall 99). Within the five decades I review here, books about electricity became almost as popular in New York Public libraries as did Harriet Beecher Stowe's *Uncle Tom's Cabin*;¹⁶ Mark Twain became friends with Nikola Tesla; Stephen Crane and Gertrude Atherton would be invited to take a seat in the electric chair at Sing Sing.

In other cases, the relationship between the fields of literature and electrical science were substantive but diffuse. During this era, the field of literary production began to incorporate electricity in everything from improved methods of printing (electroplating), through referential descriptions of technologies, and imaginative interpretations of electricity as metaphor or agent for social change. Reciprocally, practitioners of electrical science relied on the cultural currency of "high-brow" literature to distinguish themselves from lower-class, uneducated "quacks" and

blue-collar workers. For example, the National College of Electro-Therapeutics correspondence course in electrical medicine from 1904 quotes Shakespeare regularly; and, between the 1890s and 1907, the American Institute of Electrical Engineers carefully discussed the importance of literature in engineering education. In fact, practitioners of electrical sciences seemed to believe certain qualities of electricity could be described only through analogies and poetic language. This trend can be seen in the advertisements and trade literature that frequently used poetry and literary allusions to describe the beauty and power of electricity, and perhaps more provocatively, in the novels that neurologist George Miller Beard and entrepreneur Thomas Edison tried to write, and that physicist John Trowbridge published.¹⁷

By attending to such intersections between literary and technological history, *Power Lines* argues that the concept of the network was more important to American literary history than previous studies have supposed. A catch-all term for any system of interconnections, the word *network* began to be deployed during the Gilded Age as a metaphor not only for electrical systems but also for various social formations that these systems facilitated. Changing terminologies used to describe power systems—including but not limited to *network*—registered competing ideologies for understanding complex technological and social interactions. Organized chronologically, my chapters trace the development of vocabularies and literary experiments used to describe electrical systems, in order to historicize and theorize why the concept of the network posed such a conceptual challenge to Gilded Age writers.

My first chapter suggests that *central-station power plant*—the term used to describe early light and power distribution systems, including Thomas Edison’s Pearl Street Station—represented a fantasy of technological and social control, and it reads Mark Twain’s *A Connecticut Yankee in King Arthur’s Court* (1889) as a novelization of this fantasy. The *central-*

station image emphasizes the production and management of power rather than its non-hierarchical distribution. Nonetheless, the concept of the central power station challenged earlier ways of understanding electricity as a mythic force, a lightning bolt, or an untamed spark. This chapter suggests that Clemens's *Yankee* represents an experiment in electrical hyperrealism—an imaginative experiment in using electricity to enhance reproductions of nineteenth-century culture. Clearly a talented engineer, the *Yankee*'s sense of his averageness can be understood only in terms of his unoriginality, as he most often creates spectacularly-packaged copies of other people's ideas. While exploiting other people's inventions, he devalues his own, including the perfected "insulation of [his] own invention," which might have earned an inventor a small fortune in the 1880s, if not a measure of fame (71).

Morgan's sensational mimicry extends beyond his reinvention of nineteenth-century culture. In choosing to repackage nineteenth-century technology as magic—a move which becomes his trademark—he imitates Merlin: "If everybody about here was so honestly and sincerely afraid of Merlin's pretended magic as Clarence was, certainly a superior man like me ought to be shrewd enough to contrive some way to take advantage of such a state of things" (35). Likewise, Morgan's climactic war represents a spectacular elaboration of Arthur's catastrophe. Both his scientific "miracles" and his sublime destructiveness—his two most identifiable characteristics—are explicit, if exaggerated, copies. Yet unlike "the work of art in the age of mechanical reproduction," Morgan's copies lack no aura; with his electrical technologies he makes his performances more arresting, more vivid than their originals in Mallory or Tennyson. In this way, throughout his memoir Morgan shows the reader how he uses nineteenth-century knowhow—and most notably electric power—to enhance reality by making sensational copies of everything, including himself. Indeed, the novel itself can be seen as an

electrically-enhanced performance. Although Clemens describes it as an authentic hand-written memoir, the reader only apprehends it after it has been processed with an attractive cover, electro-typed illustrations, and so forth.¹⁸ The novel ends, of course, with the original overtaking the copy, with Merlin using *actual* magic to transport the Yankee across time and space. The Yankee's electrical simulations do not ultimately overcome the original, although the tension between the two creates a spectacle that continues to be entertaining decades after the original was written.

In *A Connecticut Yankee*—published after New York passed its Electric Execution Act (1888) but before the first electric execution—Mark Twain contemplates the tension between the dangerous, tantalizing power of the electric charge and the distributive interconnections of the central-station system. Alternating between technical and melodramatic depictions of electric circuits, he situates the fatal electric spark on the borders between realism and fantasy. Yet after the chair was first put to use in 1890, neither of these representational frameworks seemed adequate to describe it. Even Alphonso David Rockwell—an electro-medical doctor who helped “improve” the electric chair—described the electrocutions he witnessed as “unreal” (231). Drawing on technical, literary, and popular texts, Chapter Two explores how authors such as Stephen Crane, William Dean Howells, and Gertrude Atherton experimented with new representational frameworks for describing electrocution. This chapter examines the role of sensationalism in understanding technologies of electric death, recovering archival materials to reveal that accidental electrocutions tended to be described in nonchalant technical terms, while state executions added a layer of performance and spectacle to the notion of instant death.¹⁹

During the late 1880s and 1890s, the word *electrocution* became a subject of controversy; major periodicals staged long-running debates about what death by electricity should be called.

Rather than questioning the ethics of electric execution, newspapers tended to question the philological value of the word *electrocution*, or they speculated on whether the executions of incarcerated peoples and stray pets might help mitigate the “battle of the currents” between Westinghouse and Edison.²⁰ A staff writer for the *Chicago Daily Tribune* noted that “‘Electrocution’ as a word describing the infliction of the death penalty by electricity is widely objected to in the newspapers. The latest blow at the absurdity of the word and those who use it is an etymological absurdity, because the criminal is not ‘cuted’ or anything else (except killed). He is not even executed. It is the sentence of the law that is executed” (“Friday August 7, 1891”). Typical of contemporary newspaper coverage of electrocutions, this article displaces of the condemned criminal, relegating the actual killing to a parenthetical aside while placing emphasis on the etymology of the word “electrocute.”

Contextualizing and recovering such texts, my second chapter analyzes the roles that various representations played in producing the social meanings of electrocution (and, by extension, of electricity). Beginning with the legacy of hanging narratives and then focusing on Gertrude Atherton’s *Patience Sparhawk and Her Times* (1897) this chapter suggests that a new type of writing might induce Americans to make more effective use of electricity’s awesome power. Unlike writers who depicted electrocution as instantaneous, Atherton illustrates how the electric chair’s meanings *do not* arise from the moment of electric shock. Combining elements of sensationalism and romance, Atherton raises questions about the generic conventions of the modern novel. She plays the electric-chair plot against an array of metaphors that she draws from electro-vitalist discourses, hinting at the vast universe of forces and fictions that might be tapped if American writers escaped the thrall of sensational journalism and courtroom dramas to imagine something *new*. When considered together, the novel’s critique of sensationalism and its

electrical metaphors offer a rare glimpse into the complex layering of fears, desires, and ambiguities that defined Americans' relationship to electricity in these early years of its distribution.

Taken together, Chapters One and Two trace the tension between the images of the spark and of the central power system, exploring narratives about state and nonstate electrocutions to illuminate how representations of fatal electric circuits were used to re-conceptualize complex, nonlocal interconnections. As a staff writer for the New York weekly *Independent* writes in an 1893 article, "Touching the Button," "Deeds of grandeur and deeds of terror are accomplished with less immediate effort and at a distance from their effect. The touch of a button executes a murderer or starts all of the enginery of the Columbian Exposition. [...] Another lesson not so grand, perhaps, but more personal, must we draw from this illustration—the lesson of human influence. Which of us is not pressing the button? What we do here is seen and felt, invisible, far off." This article uses the electric button as a metaphor for a complex and fragile network of human interdependencies which appear to be "invisible" from the perspective of the person who is "touching the button," but which have unpredictable, material affects for others who feel its affects from "far off." Like the novels by Mark Twain and Gertrude Atherton that I discuss in these chapters, it challenges the fantasy that networks "tame" the electrical charge, hinting at the importance of making conspicuous the supposedly-invisible interactions that are mediated or promoted by electrical and social actions.

The word *network* appears more commonly in descriptions of power plants than in descriptions of electrocution, and Chapter Three investigates why literary artists found the power network as complex and alluring as the electric chair. Frequently using the term in a hyphenated form ("net-work"), early narratives about electrical systems in the West emphasize how power

lines *entangle* local social systems into larger economies. Yet western authors Mary Hallock Foote and Jack London complicate the assumption that Eastern power companies could assimilate western cultures into a technological monoculture; their narratives about western electrification emphasize how regional cultures could promote domestic and communal electrical use that could rival the exploitative corporate systems of the East. By illustrating how electrical networks might shape and be shaped by Western communities, these texts raise questions about contemporaneous narratives that linked the laying of telegraph wires to the “closing” of the frontier, and, concomitantly, to the supposed disappearance of the Native American and the pioneer. Foote and London’s western electrification narratives complicate the generic categories of regionalism and naturalism, respectively, by incorporating elements of utopianism and romance to describe the promise of new electrical frontiers. This chapter puts Foote and London in conversation with technical writing and advertisements to suggest that the light and power networks developed in the American West changed the character of electric technology and of technological production in the U.S. Across popular, technical, and high-brow registers, the engineer building the impossible dam to send power across the austere western landscape becomes the new embodiment of an older frontier mythology.

In the West, electrical utilities linked irrigation and water power, appreciably changing the landscape and the economy of California, Colorado, and surrounding regions. Concomitantly, electricity was associated with the replenishing of communities, and depictions of healthy, communal electrical grids in the West anticipate a subgenre I call the “revitalization narrative,” a class of literature that describes the reawakening of bodies and communities. Defining and analyzing this subgenre, Chapter Four investigates how early-twentieth-century authors used electrical analogies to grapple with changing definitions of health, life, and death.

This chapter argues that Pauline Hopkins and Charlotte Perkins Gilman's euphoric descriptions of electrical revitalization counter medical discourses that privileged certain bodies while pathologizing others. Although these authors had divergent political aims, both narrate modern life in terms of a growing network society, writing against the individualistic paradigms of naturalistic literature. In so doing, they imagine a stronger relationship between electricity and the pastoral than we have previously seen in American literary history. They depict electricity moving like water through a landscape to refresh communities and individuals within them, anticipating rhetorics of sustainability that would gain prominence later in the twentieth century.

Hopkins and Gilman raise questions about the role of the romance in the narratives that I explore in my previous three chapters. Where Twain, Atherton, Foote, and London resort to romance to resolve socio-economic and ecological problems that emerge from the development of electrical systems, Hopkins and Gilman use metaphors of electric power and depictions of power grids to illustrate how individuals are embedded within systems of social and technological interconnections. For example, Hopkins describes communication with spirits in terms drawn from the discourses of electrical medicine, situating her protagonists within a chain of connections that extend beyond the mortal coil. Gilman, in contrast, deploys metaphors from physical and biological sciences to advocate for the interconnectedness of men and women on a macroscopic scale. These authors re-imagine American letters in networked terms—for Hopkins, bloodlines and spiritual-electric connections offer a richer way to understand the individual's place in the modern world and Gilman suggests that all humankind is comprised of "storage batteries" that are most efficient and powerful when wired together.

Ultimately, *Power Lines* rethinks the Gilded Age as "the electric age"—the age when electrical systems inspired different approaches to reading and writing American literature.

By examining how Gilman blends utopianism and scientific realism to describe humans as “storage batteries,” or how London shifts away from the techniques of literary naturalism to describe idyllic and sustainable electric grids, we can trace how new networks inspired authors to complicate or to move outside of prescribed genre conventions. Authors who experimented with new electrical forms and symbols created narratives that anticipated modernism by troubling the boundaries between realism and romance, regionalism and utopianism. By recovering and studying these histories, we can re-envision the development of the novel across the twentieth century and in so doing, we might apprehend more clearly the promises and limitations of our radically networked lives and literatures today.

End Notes

¹ On representations of electricity in the early nineteenth century, see Paul Gilmore, *Aesthetic Materialism: Electricity and American Romanticism* (2008); Sam Halliday, *Science and Technology in the Age of Hawthorne, Melville, Twain, and James: Thinking and Writing Electricity* (2007). Both Halliday and Gilmore construct transatlantic archives of literature that engage with the development and circulation of electric technologies. Gilmore investigates how nineteenth-century authors understood the liminal materiality of electricity, and how they used metaphors drawn from electricity to re-conceptualize the relationship between aesthetics and affect, spirit and body. Halliday explores how authors began to understand thought itself as an electrical process. While both texts offer useful readings of electricity as it is represented in American literature, neither addresses the conceptual challenge posed by networks.

² I adopt the term *assemblage* to describe objects and agents that are in close association with one another in order to disambiguate the word “network” which I use to describe physical networks, such as nervous networks or power distribution systems. My second chapter, for example, argues that the electrical circuit that comprises the electric chair is embedded within other systems of knowledge, objects, and agents—its meanings and uses are inextricably entangled with the production and consumption of sensational journalism, the development of medical knowledge about the effects of electricity on the body, and so forth—and thus the electric chair represents an *assemblage* and not just a tool or isolated artifact. The concept of the assemblage emerges from Gilles Deleuze and Félix Guattari’s *A Thousand Plateaus* (English translation 1987), and has been expanded upon by works such as Manuel DeLanda’s *A New Philosophy of Society: Assemblage Theory and Social Complexity* (2006) and Bruno Latour’s *Reassembling the Social: An Introduction to Actor-Network-Theory* (2005). In some cases, assemblages are defined in a strict arrangement; I do not use the term in this way. Notably, the sociologists who have constructed the field of assemblage theory explicitly argue against reifying notions of the “organismic” social body (DeLanda 8). As I show later in my introduction and in my fourth chapter, the image of the electrified social body is important to both Charlotte Perkins Gilman and Pauline Hopkins.

³ The fantasy of clean and abundant electric power was championed at World’s Fairs, which associated electrical technology with national civic pride. Yet the association between electricity and cleanliness was multilayered. At the turn of the twentieth century, many cities chose to invest in electric light and power, based on the assumption that electric lights could make streets safer and electric appliances could improve personal hygiene. Indeed, electricity changed

domestic definitions of cleanliness and hygiene with inventions like the vacuum cleaner, dishwasher, and other such appliances (*Electrifying America* 18).

⁴ Picture from Essig, 138.

⁵ Science writers during this time period most often refer to electricity as an “imponderable fluid” because of its weightlessness. See, for example, Edwin J. Houston’s *Dictionary of Electrical Words, Terms, and Phrases* (1889). Debates over whether electricity was one or two fluids or another phenomenon altogether persisted well after James Clerk Maxwell described classical electrodynamics in partial differential equations (1861-1862); the mathematical formulation of electromagnetism predicted how electricity would move, but it did not describe what electricity was.

⁶ A particularly interesting example of such speculative fiction: L. Frank Baum’s *The Master Key* (1901) describes an “electric demon,” a fantastic life form born from the spark of entangled wires which embodies the messiness and potential danger of the newly-wired world and the recognition that electrical power may produce new ways of living that would have to be introduced into the busy and ambitious American scene. Useful book length studies about such narratives include David Nye, *Narratives and Spaces: Technology and the Construction of American Culture*, (1997); Thomas Peyser, *Utopia & Cosmopolis: Globalization in the Era of American Literary Realism* (1998); Kenneth Roemer, *The Obsolete Necessity: America in Utopian Writings, 1888-1900* (1976); and Charles J. Rooney, Jr., *Dreams and Visions: A Study of American Utopias, 1865-1917* (1985).

⁷ The term “network society” is commonly used to describe aspects of twenty-first century life, but it has been formulated most extensively by Manuel Castells. In the Preface to the 2010

Edition of *The Rise of the Network Society*, Castells claims that “the network society” is a distinctly new phenomenon, claiming: “We live in confusing times, as is often the case in periods of historical transition between different forms of society. This is because the intellectual categories that we use to understand what happens around us have been coined in different circumstances, and can hardly grasp what is new by referring to the past. I contend that around the end of the second millennium of the common era a number of major social, technological, economic, and cultural transformations came together to give rise to a new form of society, the network society” (xvii). This dissertation does not suggest that networks held an equivalent place in U.S. culture at the turn of the twentieth century and at the end of it. Indeed, my focus on networks within the U.S. marks an important distinction between my work and Castells’—the electrical networks I examine, while linked to the exchange of money, goods, and people across national boundaries, were not implicated within global economies in the same way that electronic networks are today. Nonetheless, I suggest that the *fin de siècle* witnessed compelling reflections on the stakes of incorporating power systems into daily life. More importantly, I suggest that the vocabulary that frustrates Castells today was developed by the writers and technologists I examine in this study, who were, in turn, frustrated and confused by the vocabulary they inherited from their intellectual predecessors.

⁸ The masculine pronoun here emphasizes the gender discrimination that women faced in the electrical sciences. Women in electrical science programs could be the subject of elaborate jokes, as in the article “Corsets Not in the Way: Women Indulge in Practical Electrical Experiments,” *Chicago Daily* (27 Apr. 1896): 3. This article suggests that women are poor electrical scientists because the metal in their corsets nullifies their experiments, and goes on to argue that the writer

of the piece “denies that electrocution is painless, especially after encountering a female student with red hair” who gives him a dirty look. The first woman to be initiated into the American Institute of Electrical Engineers, Hertha Ayrton, moved from the U.S. to England to escape gender discrimination. Her gender and her career choice were discussed in popular periodicals during the turn of the century. See “New Woman in Science,” *Chicago Daily Tribune* (23 Apr. 1899): 46; “A Woman Electrical Engineer,” *New York Times* (28 Mar. 1899): 3. On gendered jokes in technical journals, see Marvin, 22-31. On women in electrical and technical fields more generally, see Oldenziel, 11-50; Mrs. M.E. Randolph and John B. Taltavall, “Women’s Chances as Bread-Winners: XIII – Women as Telegraphers,” *Ladies’ Home Journal* (Jul. 1892): 6.

⁹ On the development of the corporation during this era, see Trachtenberg, 3-10, 65-69. On how these socio-economic changes impacted conceptualizations of the working class in the U.S., see Denning, 47-61.

¹⁰ Nancy Glazener argues that “mainstream literary history has privileged ‘naturalism’ as a category that accounts for the productions of several turn-of-the-century canonical authors (Crane, London, Norris, and sometimes Dreiser, typically) and that can be represented theoretically by Norris’s *The Responsibilities of the Novelist*, even though naturalism barely surfaced in influential periodicals except with specific reference to Émile Zola, and even though authors we associate with U.S. naturalism were not grouped together by contemporary reviewers” (6).

¹¹ Henry Adams also contrasts Whitman’s writing to the new aesthetics of electricity in “The Dynamo and the Virgin,” saying, “Adams began to ponder, asking himself whether he knew of any American artist who had ever insisted on the power of sex, as every classic had always done;

but he could think only of Walt Whitman; Bret Harte, as far as the magazines would let him venture; and one or two painters, for the flesh-tones. All the rest had used sex for sentiment, never for force; to them, Eve was a tender flower, and Herodias an unfeminine horror. American art, like the American language and American education, was as far as possible sexless. Society regarded this victory over sex as its greatest triumph, and the historian readily admitted it, since the moral issue, for the moment, did not concern one who was studying the relations of unmoral force. He cared nothing for the sex of the dynamo until he could measure its energy” (385).

¹² Clemens writes, “Well, my book is written—let it go. But if it were only to write over again there wouldn’t be so many things left out. They burn in me; and they keep multiplying and multiplying; but now they can’t ever be said. And besides, they would require a library—and a pen warmed-up in hell” (*Letters* 514).

¹³ See Howells, *Through the Eye of a Needle*, 197.

¹⁴ The *OED* dates the first print usage of this term to Feb. 7, 1881. The *OED* further notes that the term “live wire” was later applied to describe a person full of energy in 1896. William James explains that “just as a wire at one time alive with electricity may at another time be dead [...] whether a given idea shall be a live idea depends more on the person into whose mind it is injected than on the idea itself” (*On Vital Reserves* 30).

¹⁵ For more on how physiologists used electrical circuitry in their experiments, see Otis 114. On the relationship between rhetoric and technology, see Bazerman, 85-140, 159-332; Gitelman, 1-61; Kittler, 177-272.

¹⁶ The *New York Times* article “The Aguilar Free Library” (1896) gives statistics of the books most often checked out from different branches of New York libraries, suggesting that *Electricity in Daily Life* was checked out regularly.

¹⁷ Alphonso David Rockwell recalls that Beard “in his early days once wrote a novel which he never attempted to publish” (245). Thomas Edison’s fictional and poetic literary endeavors can be found in the Thomas Edison papers, and Trowbridge’s published novels, *The Electrical Boy* (1891) and *Three Boys on an Electrical Boat* (1894), interweave technical descriptions of how to make electrical toys into sentimental narratives about boys coming of age.

¹⁸ For more on *A Connecticut Yankee* as a technologically-enhanced representation of a hand-written memoir, see Michelson, 182-3.

¹⁹ On the performative aspect of executions, see Conquergood, 339-367.

²⁰ On the word “electrocute,” see “Catelectrize Versus Electrocute,” 10; Heinrichs, “Disnerving Instead of Electrocution,” 10; “Electrocution,” 25; “Elektramort,” 12; ---. Although the electric chair was at the center of many sensational news articles at the end of the 19th century, it has been under-theorized in literary and cultural studies of capital punishment. For example, Kristin Boudreau’s *The Spectacle of Death* (2006), which investigates the sensation of capital punishment from the 1830s through present day, never mentions the electric chair. Dwight Conquergood discusses electrocution in only a few lines. Even Michel Foucault’s foundational *Discipline and Punish* (1975) does not adequately address the late nineteenth-century fascination with electrocution, evidenced by the wide circulation electric chair narratives in circulation, as well as the marked increase in sales of electrical medical devices after the first electric execution in 1890.

Chapter One | Mark Twain's Network Narratives

As early as the first decade of his career as “Mark Twain,” Samuel Clemens was fascinated with metaphors of electrical power and circuitry. He described the Reverend Edwin Hubble Chapin, from whom he began to develop his “philosophy of showmanship,” as a human powerhouse (Cummings 51): “There is an invisible wire leading from every auditor’s soul straight to a battery hidden away somewhere in that preacher’s head, and down those wires travels in ceaseless flow the living spirit of words that might fall cold and empty and meaningless from other lips” (*Travels with Mr. Brown* 174). From this early attraction to electrifying showmanship through the end of his career, his engagement with electric technologies and metaphors deepened. As Bruce Michelson shows, in the nineteenth century printers began electro-plating documents, allowing Clemens to replicate forms of moveable type affordably and—when combined with networked distribution systems—to have national release dates for his subscription novels.¹ Indeed, Clemens was famous for seeking out such novel technological opportunities in his personal and professional life. He boasted that he was the first private telephone owner in Connecticut, and tried using the phonograph and typewriter for composition as soon as they came on the market. Yet his excitement about and financial overvaluation of specific devices did not make him a naïve technological user.² In his short story “Mrs. McWilliams and the Lightning” (1880), Clemens suggested that electricity was a fundamental aspect of modern life, poking fun at modern individuals who do not understand the physics conduction and insulation. And, while he was invested in a somewhat-optimistic interpretation of the vitalizing electric spark—he hoped that electro-medical treatments might

help invigorate his wife's ailing body—he also burlesqued pseudo-scientists who overestimated this power in *Colonel Sellers as a Scientist* (1883), which he co-authored with William Dean Howells.³

As this catalogue of texts attests, Samuel Clemens was thinking about electricity as a rising presence in his everyday and professional life by the time he began to compose *A Connecticut Yankee*. Indeed, in November 1888 amidst his notes about the novel he writes about the schematics of Nikola Tesla's newly-invented alternating current power distribution system, which he recognizes as “the most valuable patent since the telephone,” correctly anticipating that it “will revolutionize the whole electric business of the world” (*Notebooks and Journals* 431). Consequently, Clemens uses electricity as a recurring subject in *A Connecticut Yankee*, as well as a versatile metaphor; electricity inflects how he conceptualizes the promise and the darker prospects of civilization and the individual self. Nonetheless, the novel's intervention into contemporary discourses and debates in the history of electricity has been largely under-theorized. Owing in part to Clemens's disastrous entanglement with the Paige Compositor during his composition of the novel, a long trend of criticism, from James Cox and Leo Marx through Gregg Camfield and Mark Seltzer, approaches *A Connecticut Yankee* as a dark fantasy of machine technology run amok.⁴ Although a few critics have noted the distance between the signification of mechanical and electrical technologies in the novel, they have tended to arrive at conclusions similar to Marx's, emphasizing the mystification of the latter power in American life to argue that *A Connecticut Yankee* ultimately reflects the technological anxiety of its cultural moment.⁵ While Clemens's interests in machines, and specifically the Compositor, provide important indices for reading the novel, this persistent emphasis on the mechanical (and on technological anxiety more generally) often displaces discussions of salient electrical imagery, as

well as crucial interpretive contexts—including the fact that contemporary critics like William Dean Howells read the novel as a “glorious gospel of equality” despite its violent conclusion (*My Mark Twain* 38). To better attend to such interpretive problems that have been at the center of controversy about this novel, I situate *A Connecticut Yankee* in the context of electrical technology at the end of the 1880s, a decade in which the increasing visibility of light and power networks in American popular culture and daily life was rapidly and profoundly transforming the concept of electricity.

At the beginning of Clemens’s career, the electro-magnetic telegraph was a relatively-new invention through which Americans began to encounter electricity as a chain of interconnections, still primarily understanding its power as a manifestation of an aethereal fluid (with spiritual connotations) that permeated all matter and space.⁶ By the time he began to write *A Connecticut Yankee*, the telegraph and telephone were almost equally incorporated into daily experience; many urban streets were lit by arc lights; urban and suburban homes were adopting incandescent light; and many homes began to employ the first appliances that harnessed central-station power rather than batteries. The debate over what electricity is—a force, a form of excited aether, or an imponderable fluid—started to seem ancillary to the fundamental question of the quickly-developing commercial industry: what can it do for us now? Recent inventions reinforced the general impression of electricity as a “tamed” force that connected people to larger national—and potentially global—networks, complicating the popular conceptualization of the unwieldy electric spark or stolen lightning bolt.⁷ At this time, techno-utopian texts such as Edward Bellamy’s best-selling novel, *Looking Backward, 2000-1887*, (published in 1888,) promoted a progressive conceptualization of the network, describing an American future in which social power could be distributed like electrical power, from a series of distribution

centers. Yet, during this decade the image of the sublime electric spark was reinforced, as legislators considered harnessing electrical power to execute capital sentences. *A Connecticut Yankee* touches upon each of these conceptualizations of electricity. It performs and revises the history of electrical development in America by tracing the transformation of its protagonist, Hank Morgan, from an analog of Benjamin Franklin—a man associated with lightning, sparks, and republicanism—into a figure more like Thomas Alva Edison—a capitalistic technologist who earned public acclaim for his proprietary networks. In so doing, the novel raises questions about the Gilded-Age ideology that understands commercial technological development (specifically the production of electrical networks) as socially or morally progressive.

Beyond complicating dominant narratives of technological progress, *A Connecticut Yankee* uses the twin images of the electric spark and network to articulate crucial ambiguities that define the Yankee inventor's character. In fact, Hank's inability to perceive the contradiction in his own understanding of electrified modernity is a central problem in the novel: he is torn by his hope that this new power will bring about social equality, and the conflicting conviction that he deserves to rule Camelot because technological and scientific abilities are "the measures of men."⁸ By highlighting the tension between Hank's two motivations, Clemens hints at the complications that arise when one broad signifier—"electricity"—represents both individual prowess and supposedly democratic systems of interconnection.

Hank Morgan's Electrical Personality

When Hank Morgan meets Mark Twain in the novel's frame narrative, he immediately inspires "electric surprise" (18). A common colloquialism used to express affects such as shock, wonder, and revelation, in this instance electricity marks Hank's mysteriousness: "he gradually

wove such a spell about me that I seemed to move among the specters and shadows and dust and mould of gray antiquity” (17). In this way, Clemens introduces Hank as an electrifying spiritualist, associating him with the language of American Romanticism. Like a character of Nathaniel Hawthorne or Edgar Allan Poe, his “electric” personality denotes his extra-worldly knowledge. While this characterization appears germane to the context of Warwick castle, where Hank and the narrator Mark Twain meet, it seems less relevant to the modern novel. This anachronistic descriptor accentuates the impression that Hank Morgan is lost in time. More importantly, by introducing Hank through concepts of spiritual electricity and then quickly transforming him into a corporate Boss who re-invents up-to-date networks, Clemens prepares the reader to trace the protagonist’s trajectory alongside the narrative of American electrical development. By constructing the inventor in this way, Clemens illuminates Hank’s conflicted relationship to history: he records and inherits his history—in fact, his hand-written autobiography is a palimpsest, registering this imprint—but he also ritually black-boxes his (re)inventions, hoping to maximize the immediate reception of his “effects” by obscuring the conditions of their production.

Throughout the novel, Clemens associates Hank with changing conceptualizations of electricity by alluding to historical figures and debates that would be salient to contemporary readers. Specifically, he engages late-nineteenth-century history-of-science narratives that depicted Franklin and Edison as two parts of a modern Prometheus: Franklin stole the lightning from the gods, and Edison made it “democratically” (or commercially) available by adapting this “lightning” to everyday use. Although many others contributed to America’s electrification, these figures featured most prominently in narratives that depicted inventiveness and technological production as fundamental characteristics of the nation’s cultural identity—and

Clemens characterizes the Yankee inventor as a scion of both traditions. Hank embodies the resourceful tinkerer who draws lightning from the sky (as he does with a lightning rod at Merlin's tower and simulates with electrical buttons in the Valley of Holiness); and later he transitions into the modern industrial electrician who "invents" private, networked infrastructure. Influenced by Franklin and Edison's legacies, Hank values political revolution but problematically sees it as attainable through the development of commercial electrical technologies.

Significantly, Hank's inheritance from Franklin and Edison is fraught because he inconsistently oscillates between both paradigms of American inventiveness, but also because he fears that he cannot live up to the example set by the public image of either figure. He realizes that he cannot earn public distinction in turn-of-the-century America, where the increasingly-professionalized fields of electrical and mechanical engineering cast him in the shadows of such highly-celebrated scientific practitioners. Thus, when he is knocked back in time "during a misunderstanding conducted with crowbars," Hank seizes the inimitable opportunity to re-invent the American culture of invention (10). He claims: "Look at the opportunities here for a man of knowledge, brains, pluck and enterprise to sail in and grow up with the country. The grandest field that ever was; and all my own [...] whereas, what would I amount to in the twentieth century? I should be a foreman of a factory, that is about all; and could drag a seine down-street any day and catch a hundred better men than myself" (52). Although most critics have read Hank as a cutting-edge technological savant, this passage suggests that Clemens's spokesperson for modern progress is already intimidated by it—his repeated claims that he can champion, control, and reproduce American technological modernity betray insecurities about his self-identification as a scientist.⁹ To play the inventor-hero with conviction, Hank frequently imitates and plays

upon historical models. As he takes to his role with increasing fervor, however, the reader must bear in mind that his technical expertise is not forward-looking. Afraid of being subsumed by scientific and industrial practices of the twentieth century, his imagined technological utopia will only reproduce technologies and ideologies of the late-nineteenth.

Hank's insecurity about his persona as an inventor recalls Clemens's 1870 sketch, "The Late Benjamin Franklin" (1870), in which he suggests that the ideal set by Franklin's *Autobiography* was "calculated to inflict suffering upon the rising generation of all subsequent ages" (138). Indeed, Hank is doomed to mediocrity in his home century because his vocation demands that he follow in figures like Franklin's footsteps—an impossible expectation in the increasingly-corporate context of Gilded Age America.¹⁰ Once he is free from the constraints of his linear time line, Hank attempts to benefit from Franklin's example without adhering too closely to his predecessor's rigorous ideals. Just as Tom Sawyer models himself upon popular romantic heroes to assume leadership positions in play, Hank energetically re-imagines the American inventor's legacy in order to achieve social distinction in the sixth century. By exaggerating the Yankee's performativity in this regard, Clemens frequently suggests that the idea of the American inventor is as unrealistic as the characters Tom emulates.

After arriving in Camelot, Hank is almost immediately sentenced to death for his inexplicable appearance. To protect himself, he threatens to steal lightning from the sky—an act closely associated with popular reinterpretations of Franklin's kite experiment. He declares, "If any man moves—even the king—before I give him leave, I will blast him with thunder, I will consume him with lightnings!" (42). Like the mythic Franklin of Marguerite Gérard's painting, *Au Génie de Franklin* (Paris, 1779) [Figure 2], Hank hints that "his godlike mastery of nature" will allow him "to overcome British enemies with electrical lightning bolts."¹¹ However, at this

point in the novel he has no power to enforce this claim; his first Franklinian performance is empty and desperate. Fortuitously, Hank manages to escape his execution by taking advantage



Figure 2: Marguerite Gérard, *Au Génie de Franklin* (1778)

of a solar eclipse, which he pretends to control with magic.¹² Shortly after King Arthur frees him, he fulfills his earlier threat by constructing a lightning rod and successfully harnessing atmospheric electricity to explode Merlin’s tower.¹³ In so doing, Hank uses his understanding of electricity to inspire awe and to advance his social standing in Camelot, complicating his original aura of spiritual electricity by self-consciously exhibiting himself as the quick-witted, practical tinkerer.

Considering the fame Benjamin Franklin earned with his lightning rod in the eighteenth century, Hank might have secured sixth-century Camelot’s esteem with this re-invention alone; yet the Yankee’s late-nineteenth-century sensibilities and insecurities inflect his understanding of technological development. Since this invention can only “steal” lightning under certain conditions, unlike devices from the 1880s that summon electricity instantly with the touch of a

button, Hank sees the lightning rod as a comparatively weak device. Even when it can draw a charge, he perceives the spectacle of attracting lightning as mundane in itself, and connects the rod to wires that discharge into gunpowder to make the lightning strike appear suitably impressive. The fact that Franklin's invention already seems obsolete to Hank registers his late-nineteenth-century conviction that networking electricity can compound the effect of the charge itself, while also hinting at the illusory nature of the technological modernity.

Ultimately, Hank's reinvention of the lightning rod conveys both his inheritance and his distance from Franklin. Indeed, by "playing" Franklin, Hank positions himself as a performer rather than a scientific practitioner: he puts himself—not the lightning rod—on display, foreshadowing his move towards an Edisonian persona. Ostensibly exhibiting his fairness for a crowd of sixth-century spectators, he announces his reason for targeting the magician's tower and claims to give Merlin an opportunity to protect it: "You wanted to burn me alive when I had not done you any harm, and latterly you have been trying to injure my professional reputation. Therefore I am going to call down fire and blow up your tower, but it is only fair to give you a chance" (CY 49). Demonstrating his own superiority by making conspicuous Merlin's failure, Hank concludes his act:

By this time the storm had about reached us [...] Of course, my rod would be loading itself now. In fact, things were imminent. So I said:

"You have had time enough. I have given you every advantage, and not interfered. It is plain your magic is weak. It is only fair that I begin now."

I made about three passes in the air, and then there was an awful crash and that old tower leaped into the sky in chunks, along with a vast volcanic fountain of fire that turned night to noonday [...] It was an effective miracle. [...] Merlin's

stock was flat. The king wanted to stop his wages; he even wanted to banish him, but I interfered. [...] There wasn't a rag of his tower left, but I had the government rebuild it for him, and advised him to take boarders. (49-50).

With this explosive lightning strike, Hank spectacularizes his ability and willingness to use his scientific knowledge for destruction. Yet by having the government rebuild the tower, he also suggests that, despite his thrilling capacity for devastation, he is more interested in using his technological savvy in constructive ways.

Crucially, however, Hank's textual account of this performance reveals technical details that his Arthurian spectators cannot see. Since he secretly arranged his explosive apparatus weeks before this demonstration, the reader recognizes that Hank's arm gestures do not affect his electric display. In fact, he takes his cue from the lightning rod and only begins acting like a magician after it "would be loading itself." By waving his arms in the air spectacularly, Hank draws attention to his body, pretending that he has direct physical control over the lightning. Entirely displacing the reinvented lightning rod with his performance, he demands that both his readers and spectators recognize his power as an engineer as more potent and transformative than the electric spark he harnesses through various devices. Thus, the display he constructs with the lightning rod only *seems to be* about his rationality and fairness, but is more accurately about how he can manipulate atmospheric electricity to dominate Merlin. This episode highlights how Hank erases and overwrites history: he black-boxes his scientific knowledge and labor to make his "effects" seem instantaneous, but in his memoir he opens up the black box to emphasize his own cunning and foresight. By allowing the reader to peek behind the curtain and understand how his circuits work, Hank codes the act of engineering destructive circuitry as a technological sublime that simulates or exceeds the sublimity of the lightning spark itself.

Up to this point in the novel, Clemens has emphasized his protagonist's indebtedness to Franklin: Hank begins his rise to power in Camelot by drawing on almanac astronomical knowledge, creating a lightning rod, and inventing a mystified public persona of himself with public displays of electric phenomena. Clemens even frames Hank's memoir as a tale of the nation-building and scientific exploits of a quintessential (yet exceptional) American, recalling Franklin's *Autobiography* (1790). By borrowing selectively from Franklin's example, Hank believes that he is improving upon the legacy of the American inventor—he does, after all, add exciting fire power to the simple lightning rod. However, Clemens's consistent emphasis on “inherited ideas” throughout the novel also hints that Hank may be too inculcated in the culture of corporate technological production to comprehend fully the magnitude of Franklin's legacy (CY 55). Unlike Franklin, who published his experiments and his personal self-improvement routines so that readers could reproduce his (arguably-intimidating and -exaggerated) successes, Hank conspicuously obscures his technologies, maintaining complete control over all scientific knowledge in Camelot. In so doing, he ironically makes himself an even more difficult inventor to emulate than Franklin.

Beginning to raise questions about Hank's mystifying performance of American inventiveness, Clemens underlines the unintended absurdity of Hank's divergence from Franklin when it comes to the development of a modern stove. As J. Adam Johns argues, “Franklin's stove [...] promised radically more efficient heating—such a pure and admirable advance that Franklin wanted no remuneration for his invention” (32). Clemens similarly noted the impressive power of this stove in “The Late Benjamin Franklin,” joking that Franklin “invented a stove that would smoke your head off in four hours by the clock” (139). Yet, instead of constructing a stove to benefit the masses of Camelot, Hank merely advertises stove polish, claiming that he

intends to “prepare the public for the great change, and have them established in predilections toward neatness against the time when the stove should appear upon the stage” (CY 141). Here Clemens jokes that although Hank appears to recognize the ludicrousness of mass-market commodification—he ingeniously seeks to undermine chivalry by transforming knight errants into moving billboards—he cannot always perceive how his own marketing practices undermine his claim to scientific authority. Although he believes that he is displacing Merlin’s magic with science, Hank never actually distinguishes his technologically-mediated “effects” from the supposed miracles of Camelot’s tricksters. Although his black-boxed displays of technological sublimity earn him momentary celebrity and attention, the public is never convinced fully by Hank’s claims to scientific superiority, and he is frustrated repeatedly in his desire to gain credibility and social standing akin to Franklin’s.

By treating scientific knowledge as proprietary and manipulating the public’s reception of his technological output, Hank increasingly parallels Edison, the so-called “wizard of Menlo Park.” Yet, even as he continues to follow the trajectory of American electrical development, Clemens carries Hank’s Franklinian characteristics through, emphasizing how the American inventor is shaped by layers of history, despite the cultural myth that his or her inventions somehow rupture history by creating new forms of modernity.¹⁴ After the lightning rod episode, Hank momentarily celebrates his victory over Merlin—he exclaims, “I was no shadow of a king; I was the substance”—but then turns to point out the abuses of power in Camelot against which he will pit his future technologies: “The most of King Arthur’s British nation were slaves, pure and simple, and bore that name, and wore the iron collar on their necks; and the rest were slaves in fact, but without the name” (53-54). A scion of the American revolutionary, with a post-Civil-

War Yankee's outward disdain for slavery and aristocracy, Hank vilifies the sources of British power to justify his perceived technological manifest destiny.

At this point, he continues his reinterpretation of the history of electricity in America by temporarily setting aside sparks and spectacles in order to develop late-nineteenth-century networks, including incandescent lighting systems, telegraphs, and telephones. In the process, he begins to conflate his initial focus on his own comfort ("if I wanted to make life bearable I must do as [Robinson Crusoe] did—invent, contrive, reorganize things") with the project of national uplift (46). Since Hank incorporates elements of Edison's persona into his self-image as a Franklinian tinkerer who cunningly protects himself against political enmity, he perceives himself as becoming increasingly charitable and politically idealistic even as he uses elitist corporate practices in his technological production. As a result, Hank's reinterpretation of the supposedly-linear narrative of American technological progress becomes increasingly complicated as he produces increasingly up-to-date systems and devices.

As Hank lays out his plans to modernize Camelot—for his own comfort and for the good of the lower classes—Clemens continues to align him with Edison in terms of what technologies he develops (commercial improvements upon electrical inventions) and what he claims these technologies represent culturally (a more-democratic American modernity). In so doing, Clemens engages a significant cultural fantasy of the era—the diminished but resilient hope that the independent tinkerer, like Edison, could still gain personal acclaim in an era of incorporation and specialization. Provocatively, Alan Trachtenberg's description of the Edison myth in *Gilded Age America* markedly parallels Clemens's characterization of Hank as a vernacular but ambitious technologist with the purported ability to bridge the old world and the new:

[T]he public Edison seemed to embody in perfect combination what many at the time felt America to be losing, its rural Protestant virtues of the self-made man, and what it was gaining in the way of material improvements. Edison seemed to hold together the old and the new, the world of the tinkerer and the world of modern industry [...] He made the new America of cities and complicated machinery seem to evolve in an orderly fashion from the old America of country towns and youthful high jinks on country railroads. (66)

Hank represents both the realization and the limitation of this Edison myth. His early-stated claim that he could not amount to anything in the twentieth century registers anxieties about the significant cultural changes that “the public Edison” seemed to quell. Nonetheless, Hank recognizes the value of the Edisonian persona as a convincing and marketable paradigm of American invention. If Franklin once represented the model inventor because he could passively draw lightning from the sky, then Edison’s ability to make lightning—and to make a personal profit from it—would be all the more worth emulating. However, as I will explore in greater depth below, Hank’s attempt to embody the Edisonian paradigm becomes increasingly unmanageable. In trying make the transition from chivalry to electrical modernity appear “orderly,” Hank becomes obsessed with controlling both the production and the signification of modern technologies in Camelot; but he discovers that the complexity of human experience exceeds the linear narrative of technological progress he tries to affect.

Electrifying Utopia

If the American inventor is overly mythologized in the Gilded Age, so too is the electrical network. During this era, the network was often described as an inherently “civilized” or

“modern” technology because it ostensibly demonstrated how Western scientists had overcome a potent and unwieldy natural force and applied it to industry. Further, since these networks began distributing power and communications across increasing expanses of urban space, they were often understood as socially equalizing. These are the assumptions with which Hank legitimates his technological production in Camelot. Nonetheless, the fact that he perceives his ability to manage these electrical systems as evidence of his superiority over the people he claims to champion hints at the ambiguity and complexity of the socio-technical systems he constructs.

Emphasizing Hank’s need to feel superior and in control, twentieth-century literary criticism about *A Connecticut Yankee*’s engagement with technology has tended to interpret Hank’s initial technological endeavors as specious, suggesting that the novel’s conclusion reveals that Hank had “always already” been destructive—regardless of the fact that Clemens and his contemporaries interpreted the novel as affirmative of progressive ideals.¹⁵ Such readings neither recognize that the novel’s final electric shocks close a circuit of violence that begins at the opening of the novel—Hank is, after all, knocked back in time when he is hit on the head with a crowbar in the workplace—nor do they address why Clemens depicts a false utopian conclusion, replete with a romantic subplot of domestic bliss, before crushing Hank’s empire beneath the weight of an astounding death toll. Complicating this interpretation, I argue that *A Connecticut Yankee* is more than the sum of its violent scenes. Its shocks cannot cancel out the moments of emotional intensity and political critique that motivate most of the novel. I read Hank’s early electrical displays as inextricable from—not overturned by—the devastating electrocutions that follow. Consequently, before I attend to the novel’s controversial conclusion, I explore how Clemens engages contemporary cultural fantasies, anxieties, and realities to depict the complex stakes of Hank’s network production, more generally.

While much could be said about the myth and the reality of the electrical network at the turn of the century, for the purposes of this chapter I am interested in how it was interpreted as both coextensive with and disruptive of history. In *A Connecticut Yankee*, Hank believes that networks can change history, that they can eradicate slavery and aristocracy and thereby preempt the kingdom's tragic fall. But Hank also legitimates his network development in historical terms, using historical models like Franklin and Edison to justify his technological development in the terms of democratic nation building. By juxtaposing Hank's moments of history-changing technological spectacle with his reflexive meditations upon the various factors that motivate his performances, *A Connecticut Yankee* suggests that both the sense of abrupt change and the gradual process of incremental development are crucial to understanding the social meanings of American technological modernity.¹⁶

Looking Backward provides an illuminating parallel here, as a best-selling novel that influenced many readers' perceptions of time travel and socio-economic progress that they might bring to bear on *A Connecticut Yankee*. Although the former novel dwells on economic and social rather than technological development, it lends context to Hank's conviction that electrical networks will benefit Camelot, and not just his social standing therein. Indeed, according to *Looking Backward*, the very nineteenth-century inventions that Hank aims to reproduce could prompt the development of a socialist utopia:

The small capitalists [...] had in fact yielded the field to the great aggregations of capital, because they belonged to a day of small things and were totally incompetent to the demands of an age of steam and telegraphs and the gigantic scale of its enterprises. To restore the former order of things, even if possible, would have involved returning to the day of stagecoaches. Oppressive and

intolerable as was the regime of the great consolidations of capital, even its victims, while they cursed it, were forced to admit the prodigious increase of efficiency which had been imparted to the national industries, the vast economies effected by concentration of management and unity of organization, and to confess that since the new system had taken the place of the old the wealth of the world had increased at a rate before undreamed of. (36)

Bellamy uses the telegraph's association with progress, efficiency, and wealth to naturalize economic change, suggesting that the invention of such networked technologies made progress inevitable by rendering a return to old ways intolerable. Hank similarly believes that developing telegraph and telephone systems—as well as closely-related nonelectrical systems and institutions, such as trains and print journalism—will force a break between Camelot and the modern empire he hopes to create. Crucially, however, the Yankee's techno-political vision is federalist, not socialist. For him, the fantasy of the electrical network is that it simultaneously distributes *and* centralizes power, incrementally improving social relations for many while allowing him (and an elite group of educated colleagues) to remain in control at the center. Hank's federalist interpretation of the network has serious consequences in the novel. By fetishizing the centralization of power, he overlooks one of the fundamental qualities of electrical and social networks: interconnection, the fact that “change in one component impacts on other components of the system.”¹⁷

The fact that *Looking Backward* and *A Connecticut Yankee* imagine the telegraph as promoting radically different politics suggests the slipperiness of the network as a cultural signifier. While Hank develops electric networks to create something that he sees as modern, he understands and uses them in terms of classical American political ideology—and in so doing he

often unintentionally reproduces some of the social and ideological problems he seeks to avoid. In the same way that Clemens constructs Hank as an accumulation of paradigms of the American inventor, he suggests that the electrical network, despite its ostensible novelty, also inherits layers of historical meanings. Indeed, *A Connecticut Yankee* provides rich access to the multiplicity of the electric network precisely because it illuminates the feedback between Hank's idealistic expectations for his inventions and the unintended resonances of his ideologies and his actions. The more ardently Hank tries to designate his networks as modern, democratic, and orderly, the more he reveals that they are always simultaneously historical, elitist, and unruly. Thus, as Hank draws on popular understandings of the network as the symbol and substance of social progress to frame his technological development in Camelot as the "beginnings of civilization," he also remains allured by the primal power of the electrical charge and the thrill he enjoys by mystifying others with his control of it (68).

Marking the intersection between his layered conceptualizations of the network, Hank depicts his own power in terms of how he intends to empower the sixth-century masses with his inventions, likening all of his technological development with an electric lighting system: "I stood with my hand on the cock, so to speak, ready to turn it on and flood the midnight world with intolerable light at any moment. But I was not going to do the thing in that sudden way. [...] The people could not have stood it [...] I was turning on my light one-candle-power at a time, and meant to continue to do so" (120). The figurative switch upon which Hank rests his hand denotes his control: over the spark, and its distribution throughout the progressive or destructive circuits he commands. At this intersection, Hank decides what electricity (and the other technologies it metonymically represents) will signify in Camelot, and in this scene he self-consciously chooses enlightenment.

As in the lightning rod episode, he frames his technological development in a way that advances both his ability to overwhelm sixth-century institutions and his humanitarian intention to rein in his own destructive power. In this way, while describing the reinvention of technologies that were widely understood as progressive, Clemens also notes the destructive potential in both the electrical circuitry and the inventor's exultation in controlling it. Put simply, Hank's technologies do not simply transform from progressive to destructive over the course of the novel; both potentialities always coexist.¹⁸ Since Hank repeatedly chooses to develop his technologies carefully, ("turning on [his] light one-candle-power at a time,") the conflict of the novel extends beyond his desire to hold and to distribute electric—and, by extension, social—power.

Hank's obsession with control also betrays an underlying anxiety that neither social nor electrical power might be as easily managed as he imagines. Indeed, recalling that Hank comes to the sixth century already intimidated by the late-nineteenth, his self-aggrandizing claims of control might appear to rest more in fantasy than his actual ability. Indeed, when Hank first describes his plans for electrifying Camelot, he provocatively claims to have more control over electricity than did actual turn-of-the-century electricians: "We had another large departure on hand, too. This was a telegraph and a telephone; our first venture in this line. These wires were for private service only, as yet, and must be kept private until a riper day should come. We had a gang of men on the road, working mainly by night. They were stringing ground wires; we were afraid to put up poles, for they would attract too much inquiry. Ground wires were good enough in both instances, for my wires were protected by an insulation of my own invention which was perfect" (71). Hank ostensibly constructs these networks in underground conduits to avoid detection from the Church, his primary antagonist throughout the novel, but the concept of the

underground network was a subject of great controversy throughout the 1880s. Beginning in 1884, New York State began to pass legislation that forced telephone, telegraph, and electric companies to remove their overhead wires for aesthetic and safety reasons; soon after other cities began to implement similar legislation. Power and communications companies fought against these mandates, arguing that cities depended on their services too completely to disrupt them for such a large construction project. Electrical engineers also noted that the primary safety concern regarding overhead wires resulted from poor insulation, and that moving such badly-protected wires underground could be equally dangerous. Nonetheless, while the wires remained overhead, the promise of electrical interconnection was always darkened by the possibility of electrocution. Especially in areas where wires overwhelmed the city skyline (as in Figure 3, below), electricity could be seen as an intimidating new force overtaking the city, rather than a ‘tamed’ force that modernized and connected it.

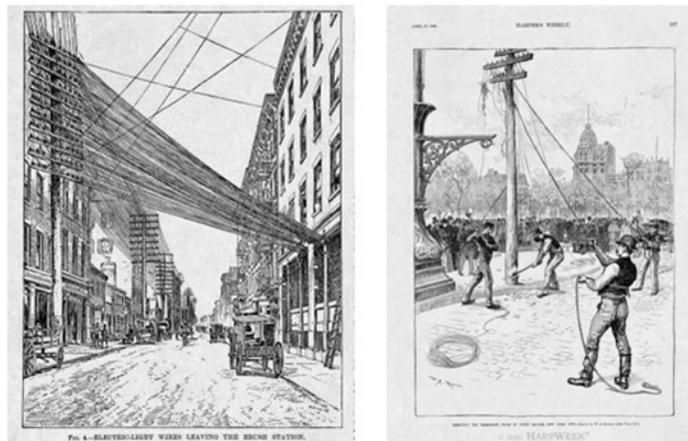


Figure 3-4: “Electric Lighting in New York: Supplement,” *Harper’s Weekly* (1889)

When almost no companies removed their overhead wires, the New York state legislature created the Board of Electrical Control (1885), which began enforcing the law more aggressively, though most companies did not fully comply with the law until around 1889, the year *A Connecticut Yankee* was published. Edison's companies, which already primarily employed underground conduits, were spared the huge cost and labor of this undertaking.¹⁹ But by building his sixth-century system underground, Clemens does more than emulate Edison's vision for electrical system building. As *A Connecticut Yankee* was being published, citizens in American cities were celebrating the erasure of poles and wires, envisioning cleaner "modern" skylines for the first time, as Figures 3 and 4 from *Harper's Weekly* demonstrate. In this context, when Hank builds his networks underground and unveils them upon Camelot fully formed near the end of the novel, he visualizes a world where technological development provides the populace with a beautiful and harmonious finished product, without the "visual babble" of poorly-organized cables, out-of-date or competing technologies, or faulty equipment, as depicted in Figure 3.²⁰ Moreover, since he casually remarks that his "wires were protected by an insulation of [his] own invention which was perfect," Hank evades anxieties about potentially-hazardous wires, playing into a larger fantasy about absolute human control over electricity, which will feature prominently in the final chapters of the novel.

Even as Hank develops his networks more cautiously than did many late-nineteenth-century inventors, he remains overly influenced by the fantasy of absolute control over electric power. He believes that he can single-handedly determine how his networks will be used and what they can signify. Yet, since he deals in such complex and unpredictable systems, he cannot always anticipate the effects of the techno-social interconnections he claims to manage. For example, in trying to correct for technological anxieties of his home decade by building his

systems underground with perfect insulation, Hank unintentionally undermines these networks' efficacy: while he claims that he intends his networks to interconnect (and thereby "resurrect") the nation, he ironically forces his workers to detach themselves from society entirely to accomplish this goal (62). As he explains at the outset: "My men had orders to strike across country, avoiding roads and establishing connections with any considerable towns whose lights betrayed their presence" (71). This description emphasizes the impersonality of Hank's micromanaged technological system, suggesting that his networks do not connect people but rather a series of lights (electric and otherwise) that abstractly indicate towns. Underlining this issue, Clemens later notes that the telephone and telegraph operators—the nodes of Hank's network—are removed from society entirely. When Hank happens upon a newly-erected telephone station outside of the Valley of Holiness, he is disappointed to learn that the operator has not heard of the "miracle" (or black-boxed electric-and-dynamite demonstration) he performed only feet away, but the operator explains: "ye will remember we move by night, and avoid speech with all. We learn naught but that we get by the telephone from Camelot" (181). By forcing this schism between his technologists and the greater public, Hank unintentionally creates a new social fault line in its attempt to close the gap between the aristocracy and lower classes. Instead of democratizing knowledge, his private telephone system redirects and skews it, anticipating social formations that network theorists have discussed in internet usage today.²¹ In Barry Wellman's terminology, Hank uses technologies to replace "place-to-place" with "person-to-person" communications. In so doing, he literally disperses and fragments Camelot's communities by removing his technological operatives from their homes and reorganizing them along his developing networks.

Like Edison, Hank relies on a team of laborers whose contributions he obscures from both his readers and his spectators, suggesting that he values the symbolism of a centralized power source over the actual outcomes of his subversive rewiring.²² Hank's obsession with centralization complicates both the progressive and erotic frameworks in which he casts his networks at different points in the novel. As Sam Halliday argues, "the telephone is prominent among Hank's innovations [in part because of] the technology's emotional significance, arising from its association with a particular kind of person. This is the 'Hello Girl' or telephone operator" (427).²³ Indeed, Hank's affection for a long-lost "hello-girl" draws attention to how nineteenth-century electrical networks fetishized connection at a distance—a cultural fantasy Clemens engaged directly in "The Loves Of Alonzo Fitz Clarence And Rosannah Ethelton" (1876).²⁴ But reading *A Connecticut Yankee's* telephone system as a sublimation of Hank's desire for one hello girl would be misguided. In the novel and in the 1880s more generally, the telephone is not a source of abstract, anonymous interconnection; it is a system that enables intentional connections between two parties who momentarily agree to become parts of the network. Outside of romantic fiction, people do not use telephones primarily to speak to unknown operators. This distinction is critical because it shifts the signification of the communication network from a symbol of national interconnection that unites and equalizes all users—the myth promulgated by telephone advertisements and utopian fiction—to a consumer service that atomizes users, reinforcing connections between nodes among an in-group without actually facilitating new connections. Illustrating this point, Hank's early network development tends to benefit himself more directly than the citizens of Camelot. He uses his ability to connect to his apprentice, Clarence, from afar to demonstrate his social authority (as when his ability to communicate across long distances earns him fame in the Valley of Holiness), and to save his

life (as when he telegraphs for help just before he and King Arthur are about to be hanged for inciting a slave rebellion).

Yet even if the social networks that are facilitated and mediated by telephones are intentional and not anonymous or spontaneous, this system is more than a tool to Hank; it comprises an integral part of his character as a product and producer of American electrical networks. Indeed, scientifically-savvy readers might identify Hank as electrical in the ways his behavior parallels a popular understanding of a fundamental principal of circuits. Like vernacular descriptions of Ohm's Law, Hank produces his most potent "effects" (often in the form of shocks or sparks) when faced with strong resistance, and he can no longer produce such effects when he is disconnected from his social and technological networks.²⁵ Yet Clemens also describes Hank's cyborg self-identity more directly, in the moments where Hank is surprised by his own inventions and admits that beyond exciting him, these devices make him feel more alive. For example, when he discovers the socially-disconnected operator in the Valley of Holiness, he immediately uses the telephone and exclaims: "It sounded good! In this atmosphere of telephones and lightning communication with distant regions, I was breathing the breath of life again after long suffocation. I realized, then, what a creepy, dull, inanimate horror this land had been to me all these years" (182). In such scenes, Clemens emphasizes how networks enhance Hank's sense of self and the way he perceives and interacts with the world. Drawing on the vocabulary of electro-vitalism ("breath of life") Morgan compares his electrical networks to a tonic—but one which energizes his own body, rather than the "body politic" of Camelot. Significantly, in describing Hank's manipulation of these networks, Clemens deviates from most popular metaphors of electric interconnection: Hank's telegraphic communications are not instantaneous, nor do they annihilate space.²⁶ Although Clemens largely erases the labor of

creating these networks, he does not erase their materiality. For example, when Hank requires a direct connection the most, he still must wait: “five nerve-straining minutes—ten minutes—how long it did seem!” (496). In fact, Clemens even uses these communication systems as metaphors to emphasize astounding lengths of time and space, likening lengthy German sentences to transatlantic cables.²⁷

Hank emphasizes the vast spaces his networks cover because he understands the network as a prosthetic extension of his body, which expands his reach across space and time. By drawing attention to these networks’ materiality, and to Hank’s dependence upon them, the novel plays on the fantasy that extensive communications networks exist only to serve the end user. In effect, Hank’s operatives remove themselves from their surroundings and society in order to build an extensive infrastructure that connects him to Clarence from any distance. Although Hank uses his republican ideology to justify his technological colonization of Camelot, such scenes draw attention to how networks might reinforce social hierarchies by strengthening connections between elitist consumers while leaving others off the grid. In this way, *A Connecticut Yankee* emphasizes how networks can enhance individuation rather than interconnection, making Hank feel more powerful as they solidify his role as an outsider.

Hank’s belief that these networks can be socially progressive is problematized, but not undermined, by the exhilaration he finds in using them as prosthetics. In fact, Hank does follow through on his stated humanitarian motivations, becoming a kind of benevolent dictator when he opens his private networks to public use. His utopia lasts for only one chapter of forty three, suggesting that the potential for networks to foster social progress is less central to the novel than the allure of using electricity for personal gain. Nonetheless, its accomplishments are impressive: “Slavery was dead and gone; all men were equal before the law; taxation had been equalized.

The telegraph, the telephone, the phonograph, the type-writer, the sewing machine, and all the thousand willing and handy servants of steam and electricity were working their way into favor” (315). In the terms of nineteenth-century advertisements, Hank describes electricity and steam as “servants.”²⁸ By explicitly juxtaposing this descriptor with the announcement that “Slavery was dead,” he implies that substituting these servants in domestic roles facilitated social equality by reducing economic dependency on slavery or “wage slavery.” Here Hank most clearly evokes the ideology that understands commercial technological production as socially-progressive, since he imagines that the mass market allows citizens to exploit technological rather than human labor while still generating wealth and abundance.

At other points in the novel, Hank betrays his willingness to exploit any potential source of energy for power. He even straps a loom to a praying monk in the Valley of Holiness, harnessing religious gesticulation to make tow-linen shirts. In such episodes, he conveys late-nineteenth-century power companies’ ambition to assimilate all potential energy (generally in the form of wind or moving water) as a source of power and wealth. Yet before unveiling his utopia, Hank allows the monk to rest, choosing to let his sympathetic humanitarianism overcome his capitalistic dedication to optimizing efficiency and production. In this way, for a single chapter, *A Connecticut Yankee* depicts a techno-utopia that displaces human exploitation by valuing large-scale improvements to the quality of life over economic profitability.

That the inventor finds domestic bliss after unveiling his utopia marks a confluence of emotional and electrical connection: his family life is enhanced by his networks, and he manages his networks with a warm paternalism. Indeed, when his wife names their daughter “Hello Central,” she underscores Hank’s layered roles as the father of biological and technological progeny, linking ideal nineteenth-century domesticity with nineteenth-century electrical

development.²⁹ This parallel between emotional and electrical interconnections is indicative of Clemens's understanding of "vital force" as a "finer form of electricity" (Knoper 124). At the same time, Hank downplays the symbolic power of the electric charge. Instead of representing his godlike control of lightning, in his utopia Hank equates electricity with an array of other helpful tools, including type-writers, phonographs, and trains. When Hank thinks of electricity as one part of a larger techno-social system rather than as a prosthetic extension of his own body, he temporarily transcends his federalist interpretation of the central-station power system and genuinely redistributes social and electrical power across Camelot, briefly realizing the possibilities of bringing sympathetic and technological ideologies into harmony.

Unstable Network Dynamics: from Electrical Servants to Electrocutions

The illusory success of Hank's reinvented nineteenth-century techno-utopia begs the question: what went wrong? Most scholarship about technology in *A Connecticut Yankee* has demonstrated effectively that the exploitative or destructive potential of Hank's technological regime remains present along the margins of this utopia. In the same way that mid-to-late nineteenth-century proponents of aggressive modernization imagined telegraph wires homogenizing the world to share "universal taste," Hank's electrified Camelot is conspicuously monolithic, suggesting that he has commandeered the nation's systems of interconnection while claiming to democratize it.³⁰ Although he explicitly creates a patent office, he gives no competitors a chance to create alternative technologies or to tinker with his as they were being developed. This makes for a cleaner cityscape than nineteenth-century Americans experienced; but it also means that the changes he makes are relatively superficial. Indeed, the majority of Camelot has no access to the means of production since Hank entirely removes individuals from

their communities to train them, opening his schools to the public only after he has finished his performance of American technological development through the 1880s. Moreover, as Gregory Pfizter and Richard Slotkin have argued, Hank justifies his technological domination of Camelot (at least in part) through analogy to Western expansion; after he makes his networks public and enlightens the “white Indians” of Camelot, he gets “ready to send out an expedition to discover America,” implicitly preparing to reenact the violent colonization of the “new world” by franchising his working model of modern society (*CY* 315).³¹ Thus, Clemens hints that the benefits of Hank’s utopia are counterbalanced by the promise of serious costs.

This utopian chapter suggests that Hank genuinely believes that his inventions will produce a republic throughout most of the novel—but his perceived technological manifest destiny, and his eventual decision to kill twenty-five thousand knights to protect his ideological and economic investments in Camelot, demonstrate his contradictory conviction that superior technological knowledge grants him the right to kill and to conquer. As Robert Shulman argues, these divisions in Morgan’s character map longstanding political and economic tensions that Hank exports with his ideology of American invention:

The concealed tensions that have plagued American republicanism from the days of [Benjamin] Franklin and [James] Madison reappear in the conflict between Hank’s commitment to liberty and freedom and his own impulse to dominate others and become Boss, a conflict rooted in the market society and in Hank’s character and related to his seriously divided feelings about the common man he is ostensibly trying to save. (151)

Such criticism demonstrates the tension between Hank’s republicanism and capitalism—what I have identified as Hank’s Franklinian and Edisonian characteristics. More importantly, Clemens

often articulates these divisions in Hank's personality through his inability to recognize the multiple ways in which his electrical development "has politics," in Langdon Winner's sense of the term. On the one hand, Hank uses electricity to create spectacles that demonstrate his control over "nature" and thereby supplement his physical and social power. He exemplifies the exhilaration of electrical enhancement—what Mark Seltzer calls the "logic of prosthesis"—as well as the thrill and the accompanying sense of superiority of wielding the power of the electric charge itself (Seltzer 10). On the other hand, Hank draws on popular understandings of the network as the symbol and substance of social progress to frame his technological development in Camelot as democratic, characterizing his inventions as the "beginnings of civilization" (*CY* 68). Hank cannot see the contradictions in his motivations because he believes he can earn personal strength and equalize society with the same electric technologies. Thus, the root tension that threatens to degrade his democratic utopia into a violent dictatorship might be traced back to the fact that Hank's electrical networks carry with them histories and politics which he does not realize because he is entirely enamored with the fantasy of their symbolic progressivism.

A recurring theme throughout the novel, Hank's inability to see the conflicted politics of his technological practices first comes into focus in the Morgan Le Fay episode that shortly follows his initial push towards developing secret nineteenth-century systems in Camelot. Although he claims earlier that his covert operations would champion humanitarian causes, his interactions with Le Fay actualize his stated sympathy for the lower classes. Upon entering her kingdom, Hank immediately challenges her violent abuses of power by overriding her authority and freeing the prisoners from her dungeons. It is worth noting, however, that while Hank confronts Le Fay's power, he has left a secret cadre of technologists at work in Camelot, stockpiling gun powder and electric charges. At this point, Hank believes that his operatives are

building his utopia, not the devices with which he will destroy it. Nonetheless, he continues to develop the technologies that consolidate his own absolute power, even as he critiques the queen's.

As Hank derides Le Fay for her cruelty, he repeatedly suggests that nineteenth-century capital punishment codes are more appropriate than the sixth-century's, pointing out that "Anonymous testimony isn't just the right thing," and complaining that he "couldn't make [Le Fay] see that sudden passion is an extenuating circumstance in the killing of venison—or a person" (119; 126). Given that *A Connecticut Yankee* was published in 1889—the year after New York State passed its Electric Execution Act but before the Act was actually implemented — Hank's implication that late-nineteenth death penalty laws are reasonable ambiguously aligns him with proponents of electric execution, foreshadowing Hank's climactic decision to electrocute thousands of knights en masse at the novel's conclusion. He never explicitly validates electric execution as an ethical improvement from previous technologies of death. Nonetheless, his extended reflection on comparative death penalty practices interrupts his performance of American technological progress as he takes Camelot across the trajectory from the lightning rod of the first few chapters to the complex communications systems he and his team develop by the middle of the novel. This displaced discussion of capital punishment hints that Hank does not fully incorporate electric technologies of death into his understanding of American technological modernity. Indeed, even when Hank wields his electrical power destructively, as in the lightning rod episode, he still sees his construction of power and communications networks as fundamentally progressive. He does not recognize fully that even the most up-to-date electrical technologies also represent an alluring, potentially-violent power, which he wields in a manner akin to the despotic Le Fay.

To better understand the nuances of Hank's divided conceptualization of electrical power, consider contemporary popular discourses about users' relationship to emergent networked technologies. Throughout the 1880s and continuing into the twentieth century, images like Figure 5 appeared across advertisements, technical journals, and textbooks, emphasizing the individual's ability to wield electricity. This symbol represents the confluence of electrical and

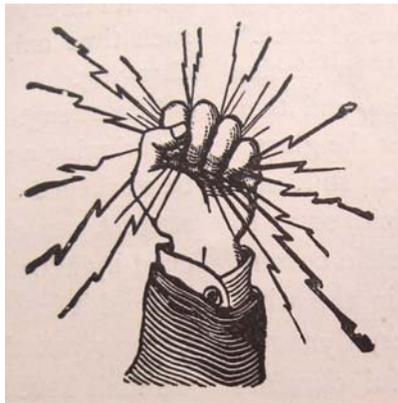


Figure 5: Common image used in advertisements and technical literature. This version comes from an 1890 advertisement for a “Faraday Cable.”

personal power Hank displays when he explodes Merlin's tower at the beginning of the novel and when he electrocutes thousands of knights with a dynamo in Merlin's cave at the end. The icon depicts electricity as a powerful force that renders its (masculine, white) user powerful for his ability to manage it. Complementing this iconic fist, the image of vital interconnection exemplified by the metaphor of the electric body politic also gained prominence at this time. Edison epitomizes this discourse when he describes “the forces of progress” in a *Scientific American* article titled “Electricity Man's Slave” (1885): “Hardly a nerve or fiber of that complex body which we call society that [sic] has not thrilled and vibrated with [electricity's] influence. It has strengthened the bonds of international amity [...] it has even warmed and strengthened the social forces” (185). Although they use different scales and imagery, these

discourses were often understood as synonymous: the empowered fist captured the fantasy of human control over electricity, which was wrought in part by networks that enabled users to command the power with the mere push of a button. Indeed, the thrill of physically manipulating electricity in this way is so important to Hank's technological identity that he even pretends to control electricity with his hands when the apparatus he uses, like the lightning rod, lacks a button.

Taken together, these depictions of electricity as a source of private power and public welfare generated significant cultural fantasies, suggesting that electricity could strengthen neurasthenic individuals' bodies while figuratively healing the American body politic from the wounds of the Civil War and Reconstruction by breaking the nation from its violent past and suturing it back together with "electric nerves." Such conceptualizations of electricity shaped the image of modern America projected by venues such as American trade shows and world exhibitions, which used technological spectacles to distract international attention from the problems of racial violence and social unrest. Indeed, the "electrical servants" of Hank's utopia reference a popular trope that displaced the residual effects of slavery in America with the fantasy of technologically-mediated leisure and social harmony. However, *A Connecticut Yankee* registers the friction between these seemingly-compatible discourses, suggesting that the clenched fist and the electrified, democratic body politic do not necessarily represent interchangeable ideologies, since displays of individual strength connoted by the fist might problematize the ideal of equality through technological interconnection—especially when some people have access to control electrical charges and others do not.

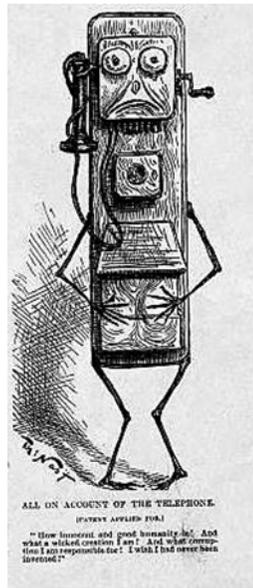


Figure 6: Thomas Nast, “All on Account of the Telephone” (1886)³²

Crucially, this tension between Hank’s desire to centralize and to distribute social and electrical power is not the direct cause of the novel’s violent conclusion. Before Hank can begin his campaign of aggressive modernization, the Church seizes power in Camelot, forcing hank to sublimate his desire to colonize the “new world” into a less-controversial defense of his Franklinian values. Where some nineteenth-century Americans would blame technologies for social ills—as exemplified by Figure 6, a *Harper’s Weekly* cartoon which depicts a telephone feeling guilty for corrupting benevolent human society—*A Connecticut Yankee* stresses that technologies are not external agents that act upon society, showing instead that they are inextricably embedded actants.³³ Indeed, Hank’s high-tech war is not even the first in the novel. While he is distracted with his infant daughter’s failing health, inane (and innate) human error sparks a medieval war. As one of his newly-trained journalists reports:

Arthur had given order that if a sword was raised during the consultation over the proposed treaty with Mordred, sound the trumpet and fall on! for he had no confidence in Mordred. Mordred had given a similar order to *his* people. Well, by and by an adder bit a knight's heel; the knight forgot all about the order, and made a slash at the adder with his sword. Inside of half a minute those two prodigious hosts came together with a crash! (330)

The series of events that follow illustrates that belligerence, suspicion, violence, and human error are important forces in the novel; Clemens emphasizes that these are continuous across human existence, and concomitantly built into technological development.

In the power vacuum resulting from Arthur and Mordred's war, the Church takes control and issues an "interdict" that bans the use of Hank's modern devices, undermining his years of technological production in days. His response to this conspicuous erasure of these technologies illuminates how he understands them as signifiers, as well as "labor-saving" devices: "From being the best electric-lighted town in the kingdom and the most like a recumbent sun of anything you ever saw, it was become simply a blot—a blot upon darkness—that is to say, it was darker and solider than the rest of the darkness, and so you could see it a little better; it made me feel as if maybe it was symbolical" (326). The symbolic resonances of electrical power are so inextricably intertwined in Hank's comprehension of technology and progress that he interprets this absence of electric lighting as a direct rejection of scientific enlightenment, although he never actually fostered a scientific community that could actually "enlighten" the masses. According to this conventional light and dark imagery that Hank reads onto electrical infrastructure, he sees himself as the champion of knowledge and democracy fighting against

hegemonic forces from the Dark Ages, without recognizing how his own practice of black-boxing electricity to display it as magic has helped to keep the citizens of Camelot “in the dark.” In other words, by staging an innocuous mistake as the root cause of tens of thousands of deaths, *A Connecticut Yankee* suggests that the myth of the individual controlling the entire network becomes a dangerous romanticization which obscures the fact that techno-social relations are intensely fragile—a small external perturbation can have catastrophic, unpredictable effects. Ultimately, the misinterpreted sword catalyzes a quick transference of power, which puts the Yankee and his trained apprentices in a defensive position. And in this position his dynamos take on darker social meanings than they had only a few chapters earlier.

In the beginning of the novel, when Hank began to construct his electrical systems to produce mystifying spectacles and improve social relations, he imagined himself at a metaphorical switch, turning on a light (70). At the novel’s conclusion his power is similarly manifest in a single button—but this button does not illuminate. It electrocutes. The parallel imagery in these two scenes uses the button to denote the disinterestedness of artifacts themselves: the electric button is equally symbol of connection and disconnection. It ambivalently closes or breaks a circuit. This emphasis on the easy-to-operate switch highlights the fact that Hank can connect or kill with the same slight motion of his finger, registering how electrical technologies can displace cause and effect in the interactions they mediate. As Mark Seltzer argues, “Such a violent immediacy posits an identity between signal and act and an identity between communication and execution—‘execution’ in its several senses” (11). With a quick retooling, Hank’s supposedly-civilizing networks easily become violent, hinting that creative, destructive, and mundane potentialities simultaneously coexist with every interaction that is mediated through an electrical system.

Significantly, the language throughout this chapter often conveys excitement. It is littered with exclamation marks that emphasize Hank's amazing displays of force. This is the chapter to which *The Encyclopedia of Science Fiction* alludes when describing Clemens as Edison-like, since it evokes the inventor's increasingly hyperbolic claims throughout the 1880s about "weapons he [was] about to unveil which would make the USA utterly invincible and war impossible" (369).³⁴ In fact, while Clemens was composing *A Connecticut Yankee*, he corresponded and visited with both Edison and Tesla, who were known for perpetuating such (ultimately unsubstantiated) fantasies about new high-tech weapons.³⁵ By imagining fifty-four men overpowering twenty-five thousand, Clemens does more than repackage these inventors' mythic claims of scientific weapons, he alludes to famous demonstrations when electricity was used for social control, and he virtually restages the 1870-1871 siege of Paris by depicting how a vastly-outnumbered but idealistic and inventive group could use technology to augment its physical strength and overcome (or, arguably, take on the role as) a ruthless enemy.³⁶

Even some of the more brutal scenes of Hank's technological warfare play into cultural fantasies about electricity. Published as New York became the first state to adopt electric execution, *A Connecticut Yankee* depicts the notion that modern technology could make execution instantaneous and thereby less painful to its victims—an issue I analyze at length in my second chapter. Like the proponents of the Electric Execution Act, Clemens describes hangings as "growsome" and imperfect—when Hank finds a hanging body as he and King Arthur explore the country he immediately wants to "cut this man down, on the chance that there might be life in him yet" (383)—but conversely describes electric death as amazingly immediate: "One thing seemed to be sufficiently demonstrated: our current was so tremendous that it killed before the victim could cry out" (349). Although the battle of the sand-belt explores

the fatal potential of electric power, Hank's ambivalence reinforces Nancy Bentley's claim that the recognition that technologies could kill was not necessarily horrifying to the nineteenth-century American.³⁷ Indeed, to Clemens, a man who grew up witnessing and fearing steam-boat explosions (and who represented that fear in graphic depictions in *Life on the Mississippi*, as well as in other texts including, briefly, *A Connecticut Yankee*), the supposed instantaneousness of electric death must have seemed amazing if not humane—as the excited language in the battle of the sand-belt attests.³⁸ Unlike Clemens's brother Henry, who died in excruciating pain from burns after a steam explosion, Hank's enemies die in apparent peacefulness, so silently that he and Clarence cannot ascertain immediately how well their weapon worked.³⁹

Furthermore, even those who generally disapproved of the Electric Execution Act tended to favor the use of electricity in war—and the battle of the sand-belt is an idealized war: it is fought only against the military without any civilian casualties, against a corrupt enemy that instigated the violence, using weapons that are incredibly powerful, fun to use, and that illustrate the superior resourcefulness of the defensive team. Indeed, the notion that the inventor ought to defend American ideals even played into a popular Gilded Age fantasy that suggested that the American inventor sutures the nation together by developing its wealth and protecting its ideological and geopolitical interests.⁴⁰ By staging electric death in this context, Clemens sidesteps many of the controversies about electrocution to illuminate the more fundamental concern that on some level, the fascination with wielding social and electrical power always threatens to trump the humanitarian desire to democratize it. In effect, the battle of the sand-belt suggests that electricity can be imagined as the nervous system of a healthy body politic only when the iconic fist that controls the power *chooses* to use it for connection instead of

destruction, demonstrating that people who use electrical circuits are inextricably a part of their circuitry and signification.

Indeed, even when Hank is not in direct control of electrical power—when his hand is metaphorically, not materially, on an electric button—he acts as if he has bodily control over this awesome power. For example, in a lengthy conversation, he and Clarence discuss how to build the most cost-effective, rationalized apparatus, and he ultimately decides that, “You don’t want any ground-connection except the one through the negative brush. The other end of every wire must be brought back into the cave and fastened independently, and without any ground-connection [...] observe the economy of it [...] you are using no power, you are spending no money, for there is only one ground-connection till those horses come against the wire” (335). This passage details the hardware of a simple and efficient electrocution apparatus of Hank’s invention, which would technically work as long as the wire fences were not rushed by a horde of knights simultaneously. Yet while he describes a circuit that will ground itself through intruders’ bodies with no need for external intervention, Hank repeatedly manipulates the current, turning it on and off until finally he “shot the current through all the fences and struck the whole host dead in their tracks!” (349-350). Hank’s language of control over the current throughout these final scenes figuratively emphasizes both the raw power of electricity and the ease and enjoyment with which he controls it. Yet the disparity between Clemens’s descriptions of the method and the moment of destruction marks a conceptual shift, wherein the apparatus transforms from a cost-effective and deadly defense mechanism developed by an expert at building war machines to an amazing toy that demonstrates how easily electric power can make the savvy American almost invincible. Here we see that black-boxing is not just a process of misunderstanding technologies as mystical—it is a hermeneutic for experiencing the

technological sublime, even when one fully understands the technology's inner workings.

Throughout most of this chapter, Clemens emphasizes how electricity changes the war aesthetic from the sword play of earlier chapters to the silent “blue spark[s]” Hank and Clarence watch through the night (348). This is the logical extreme of the iconic fist that wields electricity—the ultimate display of dominance by the individual electrical user—and in this final battle Clemens dramatizes how the fantasy of the individual who wields electric sparks threatens to explode the ideology of the socially-equalizing network.

This tension between personal and distributed power becomes increasingly focused in the sand-belt chapter, as Clemens contrasts Hank's awesome strength with moments of tragic interconnection. Since he understood electricity to be a practical tool *and* a powerful symbol, Clemens complicates the conventional science-fiction fantasy of amazing technological prosthesis. Thus, while most of the knights die anonymously en masse, evidencing the dominance of Hank's electric war machine, Clemens describes one specific electrocution as “awful”:

He was near enough now for us to see him put out a hand, find an upper wire, then bend and step under it and over the lower one. Now he arrived at the first knight—and started slightly when he discovered him. He stood a moment—no doubt wondering why the other one didn't move on; then he said, in a low voice, “Why drestest thou here, good Sir Mar—” then he laid his hand on the corpse's shoulder—and just uttered a little soft moan and sunk down dead. Killed by a dead man, you see—killed by a dead friend, in fact. There was something awful about it. (348)

Throughout the battle, Hank uses electricity to supplement his power over his enemy, but this moment captures the macabre fact that the electric current can invisibly transform a body from a friend into a conductor. This scene renders relationship between technological and human interconnection darker, positioning an electrocuted corpse as the uncanny inversion of Hank's prosthetic, bodily use of electricity. The complementary images of Hank's electrified strength and the pathetic evacuation of the knight's vitality solemnly registers that the life spark and the death spark are equally functions of networking bodies and electricity.

Nonetheless, the sympathy Hank feels for this singular electrocution does not imply that the "awfulness" lies in the technology itself. Since the battle of the sand-belt appears after a long description of a nation-wide war waged the old-fashioned way, this electrocution illuminates the fundamental similarity between modern and pre-modern war: both modes transform friends into potential killers. Therefore, the mass of decomposing flesh of the twenty-five thousand knights Hank kills by pressing a few electric buttons ultimately attests that technologies can change the odds of a battle, they can make it appear more spectacular, but they cannot change the essence of war, or the fact that humans wage wars in the first place. Anticipating the thesis of Bruno Latour's *We Have Never Been Modern* (1993), these parallel instances of violence illustrate that the modern era is continuous with the past, not disjoint from it. Indeed, the only temporal disruptions in the novel—Hank's moves back and forth in time—are effected by violence, not electrical (or other technological) inventions. Thus, the novel designates violence as a powerful, consistent force in human existence, emphasizing how it underwrites fantasies of personal strength and cultural superiority—fantasies that the novel reveals are imprinted onto, rather than overturned by, "modern" technologies. Alternately awful and awe-inspiring, the battle of the

sand-belt demonstrates both the enhanced power that electricity offers the modern American and the limitations of that power.

In the moments preceding the battle of the sand-belt, Hank confronts the limitations of his own power, finally recognizing that he cannot control all interconnections in the complex techno-social systems he helped to create. Consequently, he begins his war by destroying all but one of the nodes in his networks, desperate to keep his inventions from being co-opted:

I touched a button, and shook the bones of England loose from her spine!

In that explosion all our noble civilization-factories went up in the air and disappeared from the earth. It was a pity, but it was necessary. We could not afford to let the enemy turn our own weapons against us. (342-343)

The metaphor that equates his networks and factories with England's "spine" emphasizes his electrical conceptualization of the nation's body politic, and his maniacal investment in being the nation's brain at any cost. Significantly, by pushing this button he transforms his linear narrative of technological development into a circular one: in the beginning of the novel, Hank pairs the electric spark with explosives to inspire awe, then he develops nineteenth-century networks, but finally he destroys his networks and returns to the raw power of electric sparks and explosives. Thus, *A Connecticut Yankee* identifies the allure of controlling electricity as dangerously regressive—if only because humans make mistakes that have unforeseeable consequences, as the knight who swung his sword at the adder proves.

Clemens draws out the effects of Hank's unsustainable obsession with single-handedly controlling electrical and social power by underlining the uncanny forms of interconnection and disconnection that persist regardless of his technological manipulations after this point. Away from his family and unable to reach them because he exploded the telegraph and telephone

systems, he begins composing letters to Sandy, which (combined with his edited diary) transform into his personal memoir, and, in turn, into the substance of the novel itself. Thus, the conclusion reveals that *A Connecticut Yankee* represents in part a failed communication between husband and wife that is intercepted and amended by Clarence in the sixth century and Mark Twain in the nineteenth. Hank writes another letter while stationed in Merlin's cave, as well, which he similarly fails to transmit—a letter to his enemy, calling for truce instead of war. Just as the first, medieval war was catalyzed by suspicion and miscommunication, this second war becomes inevitable only when Hank's suspicion of his enemy short-circuits any attempt at communication whatsoever, and Clarence preempts him from ever delivering the letter.

The battle of the sand-belt similarly concludes with broken communications. Since Hank cannot articulate his failures, he ends his autobiography abruptly with a description of his victory, before losing the ability to speak for himself:

Within ten short minutes after we had opened fire, armed resistance was totally annihilated, the campaign was ended, we fifty-four were masters of England! Twenty-five thousand men lay dead around us.

But how treacherous is fortune! In a little while—say an hour—happened a thing, by my own fault, which—but I have no heart to write that. Let the record end here. (350)

From this point on, Clarence and Mark Twain take over Hank's personal memoir, demonstrating Hank's complete loss of control over his own connections and communications. Clarence's post-script explains that by "winning" the war, Hank inadvertently barricaded himself and his men in a cave isolated by dead, rotting flesh. Hank's modern technologies could defend against the knights' swords, but not against their bacteria.⁴¹ Thus, after the battle of the sand-belt Hank

becomes both a stranded, disconnected node that is unable to communicate with the outside world, *and* a hyper-connected node, helplessly in touch with death and disease.

Hank's perceived ability to manage interconnections collapses, and Clemens repeatedly intensifies Hank's disconnectedness throughout the conclusions to the novel. After the corpses' bacteria overwhelm him, Merlin enchants him to sleep for thirteen centuries, isolating him in time and space from his family and circle of ephemerally-victorious rebels. The novel ends as Hank cries "Hello Central," calling for his sixth-century daughter and for the type of emotional and electrical assemblages he developed and destroyed in Camelot. Echoing his earlier claim that he felt suffocated while he was unable to connect to telephonic networks, the conclusion describes him choking on "death-rattle in his throat" as he deliriously imagines that he is reconnected with his family in death. Metaphorically stripped of all connections, the novel concludes as Morgan tries to produce a final "effect," but fails. He is a dynamo without a network—a symbol of wasted potential.

The Electrical Sublime and the Image of History

A Connecticut Yankee is animated by images of technological sublimity. It asks its readers to step outside of their everyday technological experiences and wonder at how strange a simple act, like switching on a light or smoking a cigarette, might look to a person who had not yet seen or felt these things. But the novel is also bookended by two images which stand in stark contrast to the feeling of technological thrill that Clemens repeatedly elicits: the image of Hank Morgan's aged body, and the image of his hand-written memoir in the form of a palimpsest. Hank was an emblem of energetic modernity, but in the novel's final scene he dies alone in a conventional Victorian deathbed, far from any home. After losing his electrified empire and his

own life spark, all that remains is his conspicuously low-tech, hand-written memoir. This detail recalls Morgan's anxiousness about being left behind at the turn of the century ("whereas, what would I amount to in the twentieth century?"), arguably ventriloquizing Clemens's own fears about his future as an author.⁴² Better at marketing and making spectacles than the "hard" science of emerging research and development laboratories, Morgan epitomizes the class of tinkerers that was increasingly marginalized by the late-nineteenth-century reorganization of American technological production. He is ultimately imprisoned in his culturally-defined mediocrity despite his apparent ambition and potential. Thus, the tragedy of *A Connecticut Yankee* is not the astounding death toll at the novel's conclusion, but the fact that its protagonist idolizes a culture that has already devalued him.

As technologies become obsolete, so do technologists. Thus, even if we read the novel's tragic conclusion deterministically like H. Bruce Franklin, as the inevitable result of "the original time continuum reassert[ing] itself," it nonetheless illuminates the illusory nature of technological dominance, contrasting Hank's ephemeral "effects" with his writing, which leaves a more permanent mark (*Future Perfect* 378). Hank realizes that his technological know-how will be irrelevant in the twentieth-century—but the persistence of his autobiography suggests that his personal experiences, ranging from sympathetic connection to violent power-hungriness, might still be significant, even as the American technological landscape changes. The process of accumulating history thus becomes crucial because it complements and lends depth to the experience of the sublime elicited by the black-boxed technological effect. By linking Hank's electrical effects with his accumulative reproduction of history, Clemens suggests that, despite their vexed relationship, electrical invention and authorship are complementary creative forces

for the nineteenth-century American—both are necessary to understanding Morgan’s successes and failures, his fears and thrills.

At bottom, *A Connecticut Yankee in King Arthur’s Court* is a provocative cultural text that explores and exemplifies the practice of authorship in the electric age. The novel’s approach to electricity is thus inextricably connected to its understanding of language, and vice versa. For this reason, many of the details conventionally identified as sites of techno-phobia in the novel actually evidence anxieties about the relationship between language and technological experience. Hank Morgan’s manuscript reveals that the failure of his techno-utopia is neither purely a result of his practical invention nor his performative narratives, but rather a combination of both—the problem is not that Morgan brings war technology to Camelot, but that he brings war technology cloaked in the metaphors of progress. The complex and muddled significations of electricity thus informs many of the conflicts of the novel, obscuring the boundaries between democratic and exploitative technological practices, between the personally-gratifying and publicly-responsible. Despite its protagonist’s biases, the novel suggests that there can be no “progressive” technological development without a self-conscious awareness of the emotionally-valenced discourses, the fantasies, and the anxieties, that give electrical technologies texture and meaning—because even after an artifact has been rendered obsolete by the relentless tide of new invention, the words we used to describe it and the words it gave us to describe ourselves remain, influencing the use and production of the next technologies to come.

End Notes

An abbreviated version of this chapter appears in the 2010 edition of the Mark Twain Annual.

¹ See Michelson, 37.

² On Clemens's lifelong interest in technology, see Steinbrink, 72-86.

³ Clemens discusses Olivia's use of electrical therapies in his *Letters*, 611.

⁴ See Cox, 89-102; Marx, 340-1; Camfield, 163; Seltzer, 7-10.

⁵ See for example, H. Bruce Franklin, "Traveling in Time with Mark Twain," 157-171; and Gardiner, 448-458.

⁶ For more on spiritual and aetherial representations of electricity, see Gilmore, 170-3.

⁷ I define the discourse of the network by an emphasis on connection and distribution of power, and by references to actual networked hardware. The spark refers to discourses that emphasize an individual moment of an electric charge, whether from a lightning bolt, a Leyden jar, an epiphany, and so forth. These are concepts are not disjoint; they are often used to describe the same thing. For example, the "spark of life" and "electric nerves" both evoke ideas about animal electricity. I am interested in when and how these discourses are used, including their intersections and oppositions.

⁸ For more on this ideology, see Adas, 199-266.

⁹ See, for example, Franklin, "Traveling in Time with Mark Twain," 164.

¹⁰ On the socioeconomic changes that reshaped technical fields in the U.S. during the Gilded Age, see Jordan, *Machine-Age Ideology*, 33-67; Layton, 147-155; Nye, *Electrifying America*, 158-162; and Trachtenberg, 66-7. Taken together, these studies trace a trend from the intimate culture of apprenticeship that began to wane in the 1870s, through the cult of efficiency that defined U.S. technological production during and after World War I. Such changes to the culture of engineering and technological production in the U.S. involved the evolution of several

interdependent systems, including university curricula, material and political infrastructure, and popular culture. During the 1890s, while London was attempting to become an electrician, these systems were emergent and in flux, hence his naïve surprise that he cannot become an electrician by working his way “up” without a formal education.

¹¹ Delbourgo, 4.

¹² For more on Hank’s empty speech acts in the novel, see Nelson, 28-42.

¹³ *CY*, 50.

¹⁴ By characterizing Hank Morgan as a scion of Enlightenment and Gilded Age inventor traditions, Clemens emphasizes the continuities between modern and premodern science, raising questions about whether modernity can ever represent a rupture from past ways of thinking. For more on such questions about modernity, see Latour, 67-69. Notably, the premise of *A Connecticut Yankee*, that modern science is characterized by sensational advertising rather than actual scientific innovation, was anticipated by stories such as Edgar Allan Poe’s “Some Words with a Mummy” (1850).

¹⁵ For prominent examples of this reading of *A Connecticut Yankee*, see Camfield, 163; Franklin, “Traveling in Time with Mark Twain,” 157-171; Gardiner, 448; Halliday, “History, ‘Civilization,’ and *A Connecticut Yankee* in King Arthur’s Court,” 416-430; Marx, 341; and Tichi, 54. For a comprehensive description of Clemens’s stated goals in his composition of the novel, see Salomon, 102 - 106.

¹⁶ For more on the appearance of abrupt change and the reality of incremental change in technological production, see Johns, 14.

¹⁷ Hughes, *Networks of Power*, 6.

¹⁸ See for example Shulman, 151. Critics like Shulman have cited Hank's training as the manager of the Colt Arms Factory as the reason why his reproduction of American technological modernity becomes so violent. However, the Colt factory of the late-nineteenth century was not analogous to the military-industrial complex of today; outside of wartime the factory produced nonmilitary technologies—including the Paige Compositor. Consequently, Hank's fascination with the violence of the electrical spark is not reducible to his profession.

¹⁹ For more on the politics of underground cables, see Bazerman, 219-228.

²⁰ Nye, *Electrifying America*, 47.

²¹ See Wellman, 10-25.

²² For more on how Edison obscured the labor of his team, see Huges, 23-28.

²³ Halliday, "History, 'Civilization,' and A Connecticut Yankee in King Arthur's Court," 427. See also, Lerer, 476.

²⁴ For more on eroticized nonlocal romance, see Goble, 29-84.

²⁵ According to Ohm's Law, $V=IR$, where V is the potential difference or voltage, I is the current through the resistance in amperes, and R is the resistance measured in ohms. In other words, electricity only flows across a circuit and produces effects when forced through a resistant material. This phenomenon was commonly explained in the popular press; see for example: "Electrical Resistance," *New York Times* (16 Jul 1882): 4; "Nature of Electricity," *The Youth's Companion* 61.6 (9 Feb 1888): 70. Clemens's repeated use of the word "effects" recalls such descriptions of electricity.

²⁶ For more on the rhetoric of space-annihilating telephone systems, see MacDougall, 715-741.

²⁷ *CY*, 165.

²⁸ See Edison, “Electricity Man’s Slave,” 185.

²⁹ For more on the naming of Hello-Central, see Lerer, 479 – 481.

³⁰ On “universal taste,” see Gilmore, 85-6.

³¹ See Pfitzer, 42-58; Slotkin, 121.

³² The caption reads, “How innocent and good humanity is! And what a wicked creation I am! And what corruption I am responsible for! I wish I had never been invented!”

³³ Following from Latour’s Actor-Network Theory, I use the term “actant” to describe any human or non-human component in a network of any sort (economic, social, technological, or combinations thereof) that interacts with the network as a whole.

³⁴ See the entry for “Edisonade” (Clute and Nicholls 369).

³⁵ See *Mark Twain’s Notebooks and Journals: Volume III*, 431.

³⁶ On the siege of Paris, see Horne, 131. On uses of electricity for social control, see Nye, *Electrifying America*, 145.

³⁷ See Bentley, 1-21.

³⁸ On steamboat explosions, *CY*, 217.

³⁹ For a description of Henry’s death and Samuel Clemens’s reaction, see Lauber, 10.

⁴⁰ For an example of this conceptualization of the American inventor as national hero, see *Revision of the Patent Law Proposed by the National Electric Light Association* (1887), 28.

⁴¹ For more on anxieties about communicable disease, see Wald, 68-113.

⁴² *CY*, 52; See Michelson, 184.

Chapter Two | Shock and Sympathy: Representing the “Death Spark,” from A.D. Rockwell through Gertrude Atherton

An execution under the law ought to be the more terrible for the solemnity and impressiveness with which it is performed. It ought to be certain, swift, and painless. At its best hanging does not fulfill these requirements, while when it is bungled it becomes a spectacle which revolts civilized spectators or readers and inspires them with indignation rather at the law and its ministers than at the law-breaker who is answering for his offenses. There should be no doubt of the acceptance by the Legislature of the report of the [Gerry] commission. It will be creditable to the State of New York to be the first community to substitute a civilized for a barbarous method of inflicting capital punishment, and to set an example which is sure of being followed throughout the world.

—“Capital Punishment,” *New York Times*, December 17, 1887

This *New York Times* article illustrates how certain technological fantasies about the electric chair were promulgated in late-nineteenth-century American newspapers. Such coverage often contended that electricity would provide a more “civilized,” “sensible” form of capital punishment by replacing the public spectacle of hanging. In my previous chapter, I argued that this popular understanding of electric execution informed how late-nineteenth-century readers interpreted novels like *A Connecticut Yankee in King Arthur’s Court*. Although popular fictions like Clemens’s may seem ancillary to the technological history of the electric chair, in this

chapter I will suggest that much of the official discourse about this device's invention and implementation surrounded issues of representation and interpretation.

My epigraph contends that hanging is a problematic method of capital punishment because it “revolts civilized spectators or readers.” By explicitly citing readers' responses in their promotion of electric execution, this report suggests that the motivation to find a humane method of execution was inextricably connected to the perceived need to preempt public sentiment. Along with other texts that share this concern about depictions and interpretations of capital punishment—notably including “The Report of the Commission” (1888) that officially recommended death by electricity to the state of New York—such articles hinted that the turn to the electric chair was less about humanitarian regard for the men and women executed than a political need to manage public response to state killing (“Report of the Commission” 34-6).¹ The possibility that the public would sympathize with the condemned was further delimited by the Electric Execution Act (1888), which instituted a press gag clause intended to control journalistic reports.

Yet, even before the gag statute was repealed in 1892, it became clear that late nineteenth-century reports of electric execution did not have the effect that the New York state legislature feared.² Fictional and journalistic accounts of electrocution frequently minimized sympathy for the condemned by stressing the “unreal” quality of the death and focusing more on the awesome power of the electric apparatus than on the person being executed. In contrast, Gertrude Atherton's popular novel *Patience Sparhawk and Her Times* (1897) critiques contemporary cultural fantasies about electric execution while addressing the issue of public sentiment. Unlike novels that came before it, which incorporate accidental or nonstate electrocutions—notably including *A Connecticut Yankee in King Arthur's Court* (1889)—

Patience Sparhawk deals with legal electrocution. Atherton's novel illuminates a fundamental problem with the rationalized, technological progress that the electric chair was intended to epitomize: the public's knowledge of the chair was mediated primarily through sensationalistic representations. *Patience Sparhawk* implicates methods of representing the death penalty with the practice itself and depicts modern Americans as more interested in the sensational story than in justice. In so doing, the novel challenges the intersection of the "tame" network and dangerous spark that I explore earlier, by suggesting that the instantly-fatal electric charge is largely a product of sensationalist writing.

Understanding Electric Shocks

Historians of technology have frequently cited the public's response to the invention of the electric chair as an example of Americans' anxiety and ignorance about electricity in general. For example, in *The Electric Chair: An Unnatural American History* (1999), Craig Brandon argues that "The public's ignorance, fear, awe and admiration of electricity were important factors in the development of the electric chair" (19). However, early descriptions of fatal electric shocks were often technical and nonchalant, rather than sensational or anxious. To contextualize how anxieties about the electric spark might be read as a product of 1890s sensationalism, I briefly contrast representations of accidental electric death to those of legal electrocutions.

Brandon cites the news coverage about the first person who was killed by electricity, George Lemuel Smith, as an example the public's "ignorance, fear, awe and admiration" of electricity, saying, "Each of the five daily Buffalo newspapers printed a brief item about Smith's unusual death, using it as a kind of cautionary tale about the dangers of the new wonders of

electricity” (13). However, the *Buffalo Commercial Advertiser*’s description of the incident — also reprinted in the *New York Times* — was more technical than cautionary:

One of the most peculiar accidents we have been called upon to report in a long time occurred last night at the station of the Brush Electric Light Company on Ganson-street. A few feet from the door is the generator [...which] is constructed of iron and copper wire, and weighs about 4,800 pounds. The armature makes about 700 revolutions a minute, and generates a current equal to 225,000 cells of a battery. On the end of the machine is a brass and copper cylinder, termed a commutator, where all the current generated accumulates [...]. The curiosity of many visitors could not be satisfied until they had experienced a shock. This is received by several persons joining hands, thereby making a circuit, those on the end touching one of the “brushes,” when a tingling sensation is felt. There is no danger in this.

Among the visitors last evening was George L. Smith [...] He appeared about 10 o’clock and began to examine the apparatus. [After being kicked out and returning later in the evening, Smith] leaned over the railing in another attempt to reach the copper. He seized two strips, one in each hand. Instantly, a circuit was formed, and he dropped on the railing rigid. [After cutting the current,] [i]t was seen at once that Smith was dead. (“Killed by an Electric Shock” [1881])

Although Smith did not understand the dangers of the generator that killed him, this article addresses its audience as somewhat knowledgeable about electrical machinery. It describes the dimensions of the generator precisely, defining words like “commutator,” while assuming that the reader would understand the armature mechanism. Moreover, it describes the local city

people as technologically curious, noting that they frequently visit the power station to see and to feel the new generator at work. According to this article, the general public of Buffalo does not seem to perceive electrical power generation as an entirely black-boxed or mystified phenomenon. In fact, the report of Smith's fatal electric shock famously inspired Alfred Southwick to invent the electric chair; he apprehended this accidental electrocution as inspiration for invention rather than a horrifying tragedy.

Similarly technical language frequently appeared in reports of incidental electrocutions throughout the 1880s and the 1890s. For example, the *Chicago Daily Tribune's* story "Day Fatal To Tots" (1897) reports the deaths of three children without emphasizing the death by electrocution in its subtitle: "DWIGHT DANIELS BURNED | Louis Smith Electrocuted, Effie Raymond Crushed." The article goes on to describe fifteen-year-old Louis Smith's death by electric shock matter-of-factly: "An examination showed that when Louis touched the wire he stood with one foot on an iron railing and the other upon the damp ground, thus forming a ground circuit." The nonchalant tone of this report—and of the others like it—illustrates what Nancy Bentley describes as the modern detachment from, and expectation for, the "potentially fatal risk" posed by the proliferation of modern machinery (230). More importantly, this article does not appeal to its readers' empathy for Smith or for his younger brother who watched him die; rather it addresses readers' technical understanding of how a "ground circuit" works. Like the *Buffalo Commercial Advertiser's* description of George L. Smith's death sixteen years earlier, the author of "Day Fatal to Tots" constructs his or her audience as technologically-curious and somewhat informed about the workings of electrical circuits or networks.³

Therefore, by 1886, when the state of New York appointed a commission "to investigate and report at an early date the most humane and practical method known to modern science of

carrying into effect the sentence of death in capital cases,” there had already been a precedent for representing electric death in rationalized terms (“The Commission Report” 3).

The first Electric Execution Act, which was passed only five months after the Gerry Commission submitted its report to the state legislature, clearly registers the legislature’s aim to perpetuate (and to enforce) such rationalized depictions of death. This law did not define the legal parameters by which state prisons could acquire apparatuses for electrocutions or describe how these devices might work. Indeed, even before an electrocution apparatus had been invented, the law included a press-gag clause and a rigid description of how electric executions could be described to the public: “No account of the details of any such execution, beyond the statement of the fact that such as convict was on the day in question duly executed according to the law at the prison, shall be published in any newspaper. Any person who shall violate or omit to comply with any provision of this section shall be guilty of a misdemeanor” (*Laws of New York*, Chapter 489).

Despite the gag clause and the technical tone of some reports about electric shocks in other contexts, descriptions about state-sanctioned electrocution were greatly sensationalized throughout the 1890s. Nonetheless, they tended to emphasize concerns about legal and scientific ethics, rather than anxieties about the electric spark itself. During this era, the popularity of electro-medical practices sparked arguments between doctors and scientific practitioners about whether the pursuit of knowledge gave any one the right to experiment with living human subjects; and this debate was intensified by the invention of the chair.⁴ Newspapers staged a public conversation, using the first electric executions to question whether science (as an abstract, monolithic force) served the public or whether it used the public to serve its own interests. Although papers depicted electric executions as philosophical battlegrounds to question

the role that ethics or empathy could play in modern science, even the most critical electric chair narratives tended to heighten the chair's iconic status, shifting readers' attention from the electrocuted body to a limited set of social issues.

The most famous of such public discussions surrounded the first use of the electric chair in the execution of William Kemmler. Since Kemmler plainly admitted to murder, and there were no counter-claims suggesting his innocence, newspapers showed almost no compassion for the loss of his life. Instead, his story sparked debates about whose interests were served by the electric chair and by technological development in general. An example from *The National Police Gazette*, a sensational weekly journal, challenges the authority and ethics of the doctors and scientists who staged this first electrocution. According to the *Police Gazette*, Kemmler revealed the potential horror of this scientific method of execution with a simple request—"just don't let them experiment with me too much"—suggesting that, to Kemmler, becoming an object of scientific inquiry was the most frightening aspect of electrocution ("Electrocuted"). The gory description which follows suggests that his execution was indeed a disturbing experiment:

The witnesses, all supposing the man was dead, crowded around the death chair. Somebody removed the electrode from Kemmler's head. Then something occurred that froze the blood in the spectator's veins, and, as one witness said, made him long that he should be struck blind, for he could not close his eyes or turn his head, and yet what he saw fairly made him dizzy with horror. [...] the supposed lifeless chest began to move up and down in deep-strained breathing.

The report challenges the death penalty by undermining its supposed instantaneousness; but it also transforms Kemmler's body into a sensational narrative, by displacing him as a victim of state power and by using him as evidence against the authority of science. Kemmler's writhing,

bleeding body attests not to a human's agony, but to the imperfect circuitry of the chair and the attending doctors' inability to diagnose his death.⁵ Such writing practices emphasize the spectator's suffering above the victim's, suggesting that the execution was problematic not because it "reminded [viewers] of the ferocity of the state's sovereign power over life itself," but because it was not invisible or easily palatable to a genteel audience (Sarat 62). Although descriptions of many bungled hangings often seemed more drawn out and painful than Kemmler's botched electrocution, his execution was considered a greater failure because it "suggested that the quest for a painless, and allegedly humane, technology of death was by no means complete," a problem we still confront today in the rare occasion that an execution makes the headlines (62).⁶

Therefore, although Brandon is right that electric death often inspired fear, he overstates the anxiety and technical ignorance of most Americans, who likely had some knowledge of basic circuits and interest in experiencing the effects of electricity first-hand, despite the risk.⁷ In fact, home electro-medical sales increased markedly after the first reports of electric execution, suggesting that Americans often responded to this new technology with experimental curiosity rather than fear (de la Peña 113).⁸ Furthermore, the role that Edison and Westinghouse's "Battle of the Currents" played in the chair's implementation added intrigue to the already-sensational idea of state-sanctioned electric death.⁹ Indeed, Edison notoriously opposed the death penalty in any form before Alfred Southwick, a member of the Gerry Commission, convinced him that his endorsement of electric execution might be profitable. Edison realized that using a Westinghouse AC (alternating current) generator in an electric execution chamber might discourage the public from adopting AC power, although it could travel more efficiently across longer distances than his DC power distribution system. Westinghouse fought back, hiring lawyers to challenge the

constitutionality of electric execution and even refusing to sell New York (and later Ohio) prisons AC generators. In the end, the electric chair was powered by a Westinghouse generator, but this did not have the effect for which Edison hoped or Westinghouse feared. Instead of inciting fear of the power of AC current, newspaper coverage of the Battle of the Currents inspired public curiosity. Debates over which inventor-celebrity would “win” the battle overshadowed discussion about the actual fates of people condemned to execution. Consequently, through newspaper coverage, Kemmler’s body can be perceived alternately as a scientific artifact that teaches experts more about electric medicine or a casualty of the “battle” between Edison and Westinghouse.

The Instant Electric Button

Edison’s desire to thwart the rise of AC power helped construct the most potent technological fantasy about electric execution. When asked to describe how the process of electrocution would work, Edison reportedly explained, ““When the time comes, touch a button, close the circuit, and—Edison snapped his fingers—‘it is over’” (Essig 133). Although Edison specified that the current should “come from an alternating machine,” public interest in the chair gradually crystallized into the frightening but provocative image of technological supremacy that Edison casually referenced: the incongruously small, death-dealing electric button.¹⁰ The fatal button appeared across journalistic and fictional representations, and the type of electric current that powered the chair was gradually forgotten.

Edison’s description of the electric button demonstrates the extent to which electrocution was conceptualized as a technological alternative to hanging before the first electric chair was designed. After the Electric Execution Act passed, many questioned whether this new method

would ameliorate public sentiment against capital punishment, but few questioned that such a device would demonstrate the awesome power of modern technology and the state acting in concert. Even critics of the death penalty imagined the electrocution apparatus to be potent and gracefully compact, as in William Dean Howells's 1888 letter to the editor of *Harper's Weekly*: "I understand that the death-spark can be applied [...] without even arousing the victim [...] I have fancied the executions throughout the State taking place from the Governor's office, where his private secretary, or the Governor himself, might [...] dismiss a murderer to the presence of his Maker with the lightest pressure of the finger." Howells assumes, as did many of his contemporaries, that capital punishment by electricity would be fast and technically (if not morally) simple. In this case, the presumed ease of electrocution signified by the electric button is part of the problem because, Howells argues, killing should never be easy. He assumes that state-controlled electrocution, though undemocratic, will be quick and technologically fascinating. Despite the letter's sarcasm, its depiction reaffirms that state-sanctioned electrocution represents scientific progress, even as he critiques its social implications. It was this image of the simple electric button—not the image of the dangerous alternating current charge—that seemed to catch the public's imagination. Provocatively, between 1889 and 1900 stories of intentional, state-sanctioned shocks tended to be more spectacularized than reports of incidental electric deaths, which often addressed readers as rational and technologically savvy.

Similar to Edison and Howells, Alfonso David Rockwell's writings illustrate how fantasies about the instant operability of the electric button could displace the material process of electrocution. His depiction is especially intriguing since he was an electro-medical expert whose testimony in the U.S. Supreme Court case "*In RE Kemmler*" (136 U.S. 436) helped to determine that electrocution would not be legally considered cruel or unusual punishment. In fact, in his

autobiography, Rockwell asserts that “in the main it was my testimony that saved the [electrical execution] ‘law’” (222). He witnessed the electrocution of scores of animals in order to advise the New York state government about the most effective techniques for implementing the new law. He had directed electricity through many bodies in his medical practice, and he thoroughly understood the mechanisms of the electric chair. Nonetheless, he describes hangings that he never witnessed as more “real” than the electrocutions he attended and helped to orchestrate.

In his autobiography, *Rambling Recollections* (1920), Rockwell devotes an entire chapter to “Electro Execution,” which he begins with a brief description of how sympathy shaped his involvement in the chair’s implementation: “It had long been conceded that the rope was a barbarous method of execution, but it is always difficult to substitute a new method for an old, and the long contest over this *merciful* change in the law of the State of New York proved no exception. If the law must kill, let it kill decently. Although no strong advocate for capital punishment I *revolted at the brutality* of the strangulation method” (221, my emphasis). Rockwell’s emphasis on sympathy is characteristic of his medical ideology; his objective is the elimination of pain wherever possible—and to Rockwell, the gallows meant pain.

Although he never witnessed an execution by hanging, he describes “the horrors of hanging” with some of the most vivid prose of his entire autobiography: “the first terrible fatal fall, the gradual choking, the blackening face, and protruding tongue, and above all the convulsive, agonizing and long-drawn-out struggle” (232). His description of the four successive electrocutions he witnessed at Sing Sing correctional facility are conspicuously less concrete: “as one after the other, these miserable victims [...] took their places in the death-chair [...] a species of dreamlike apathy seemed to steal over me. It all seemed so unreal and without human touch that I could fancy myself wafted to the middle ages” (231). It is unclear whether Rockwell’s

reference to the middle ages marks a perceived underlying barbarism to the process, or whether it suggests that he simply found the scene fantastic, akin to the electrocutions in *A Connecticut Yankee*. In either case, this sense of unreality, common in depictions of the electric chair, results in part from the physical displacement of the executioner from the execution chamber. As Austin Sarat argues, modern execution laws use “technology to veil the ugly reality of execution, separating cause and effect, and making it unclear who is actually ordering and doing the killing” (64).¹¹

Disparate representational treatment of hanging and electrocution also illuminates a trend in how Rockwell—and much of the American public—perceived these methods of capital punishment: death by hanging was tangible, whereas death by electrocution was an unreal moment of technological sublimity. Lacking a suitable representational framework to comprehend death by an electric button, even an expert who helped modify the chair’s hardware and witnessed electrocutions first-hand can only apprehend the experience as “unreal.” Importantly, Rockwell does not use this sense of unreality to forgive his role in the death penalty. While he saw the electric chair as a moderate improvement over the brutality of hanging, he never saw it as a perfectible solution. Even as he describes the electrocutions as displaced violence, he clearly feels uneasy: “I experienced a feeling of shame and blood-guiltiness. As never before the awful meaning of the terms ‘immutable’ and ‘irrevocable’ was driven in. What if one of these men was not truly guilty?” (231).

Rockwell concludes with a description of the electric chair that mimics the rationalizing discourse which justified its invention, though he even qualifies this with a trace of sympathy:

Aside from the knowledge that a human life is being sacrificed, there is nothing revolting in the sight. With face covered and person securely bound, the victim

awaits the final stroke, and the translation from life to death is quicker than thought, and with the mathematical impossibility of pain. [...] The certainty that no pain can be experienced under a lethal dose of electricity is evident from the fact that, while nerve force travels at the rate of but 100 feet a second, electricity travels at the rate of 160,000 miles a second. The brain, therefore, can have absolutely no time to experience a sensation, since the electrical current travels a million times faster than the nerve current. (232)

Although he describes “the mathematical impossibility of pain,” Rockwell modifies this final passage with the provocative clause: “Aside from the knowledge that a human life is being sacrificed.” In this manner, he signals that the rationalized discourse of instant death is ultimately insufficient to justify the practice; the scene can only be perceived as clean and scientific when the knowledge of death is set “aside.”

The contrast between his dreamlike observation of the executions and his rationalization thereafter demonstrates that his sympathetic and scientific interpretations are complementary perspectives, both necessary to comprehend the stakes of electric executions but which he experiences and describes separately. Rockwell was not alone in this respect. An analogous split was perpetuated within most articles about the chair, which treated scientific expertise—including Rockwell’s testimonies—as separate from, and even antagonistic towards, perspectives that sympathetically focused on the human component of the execution circuit. This fundamental division shaped electric-chair narratives for years, adding to the device’s ambiguous characterization by suggesting that any descriptive detail about the chair could be subjective and debatable. Legal electrocution paradoxically became characterized as material and ethereal, alluring and terrifying.

The conventional fictionalization of crime narratives during this era solidified the perceived unreality of electrocution. As Karen Roggenkamp argues in *Narrating the News: New Journalism and Literary Genre in Late Nineteenth-Century American Newspapers and Fiction* (2005), “By the 1890s crime reportage had become something of an art form, dovetailing with [murder mystery] novels...Real murder cases—with their inherent drama, spectacle, suspense, climax, and denouement—could be as exciting — even more so — than the latest fictional rage if reporters fashioned stories into emblematic tales rife with the emerging conventions of fictional crime stories” (56). The electric chair extended the life of such crime reports, adding a layer of technological intrigue to this already-popular narrative genre. According to Roggenkamp, the American reading public expected most news stories to deviate from “fact” in order to construct more compelling stories. This expectation, combined with incoherent and even contradictory descriptions of electrocution and “The Battle of the Currents” intensified readers’ suppositions that electrocution narratives were subjective and exaggerated.

By the mid-1890s, popular writers Stephen Crane and Gertrude Atherton began to realize that the electric chair was not understandable within the context of sensationalism. In 1896 Crane was commissioned by the *World* to visit the execution room and graveyard at Sing Sing. From this visit, he produced a philosophical reflection on the lack of suitable representational frameworks to read or to write about his experience. The product is a full page article titled “The Devil’s Acre,” in which Crane describes how outdated aesthetic conventions inhibit Americans from comprehending the chair and technologies like it (Figure 7). For Crane, the electric chair’s “beauty” implies its horror through incongruity: “There should be an effect a thousand times more hideous.” But he notes that this desire for a “suitably” gruesome environment is part of an important problem with the American cultural imagination: “As the terrible, the beautiful, the

ghastly, pass continually before our eyes we merely remark that they do not seem to be correct in romantic detail.” In effect, Crane argues that the public’s desire for actuality to meet their “romantic” expectations disrupts their ability to explore fully the implications of real, complex aspects of modern life, such as the electric chair. He claims that “as a new people,” Americans “prefer to grope in the past when people are not supposed to have any structural precision,” but “our mechanical perfection [and] our structural precision” are inextricable from “our” modern American condition. In so doing, Crane argues that a new type of realistic writing is necessary to comprehend and produce the social meanings of technologies, especially those which escape easy classification like the beautiful, horrible chair. He boasts that he has, in fact, come close to this ideal, identifying himself as one who can reconcile aesthetic pleasure with a technologically mediated existence, for he can perceive what many others cannot: that “an express train at full speed is one of the most poetic things in the world.” But, he demonstrates that “reading” a train is quite another issue from “reading” the electric chair, since Americans have better access to understand and interact with the former technology.¹²



Figure 7: “The Devil’s Acre”¹³

Later the same year, popular California writer Gertrude Atherton—who also visited Sing Sing to inform her description of electrocution—published a novel that seemed to answer Crane’s call for a new representational framework.¹⁴ Atherton explores the entire apparatus that legitimized the electric chair, from the problem of reading biological criminality into bodies, to the concept of a fair trial in an era dominated by sensational journalism and dwindling public sympathies. In so doing, Atherton suggests that the “death spark” is unreadable because it has been over-written by formulaic narratives that capitulate to public expectations for fictionalized, dramatic news.

Atherton loosely based the criminal plot in *Patience Sparhawk* on a contemporary example that she considered to be overly-sensationalized—the 1893 trial and execution of Carlyle Harris. She adapted the most recognizable elements of the case: the mode of death (overdose of morphine), the courtroom rhetoric (the argument that an intelligent person would not administer an overdose of morphine because it would be “too obvious”), and the condemned’s demeanor in the execution chamber (cooperative and reserved). Provocatively, Atherton’s brief discussion of Carlyle Harris in her autobiography suggests that there was nothing exceptional about his case to warrant the widespread public interest in it.¹⁵ Rather, she suggests that the public’s voracious interest in cases like Harris’s stemmed more from the dramatic narrative structure of trial and execution than from any specific details of a particular case.

Largely forgotten by recent literary critics, *Patience Sparhawk and Her Times* foresees several important critiques that will be made by later electric chair fictions, such as Theodore Dreiser’s novel *American Tragedy* (1925) and Sophie Treadwell’s play *Machinal* (1928). Three decades after the publication of *Patience Sparhawk*, Dreiser and Treadwell created powerful

characters who are driven to commit murder by profound systematic oppression. Their attempts to transcend restrictive social situations are met with the state's calculated, murderous response. Atherton, however, places an innocent character in the chair, raising different questions about relationships among truth, sympathy, and justice in modern America. The novel employs electricity as a symbol in two significant ways: it contrasts assumptions about female atavisms with representations of electro-vitalism and it draws attention to how the "death spark" operates within specific social networks.

Patience Sparhawk and Her Times

Patience Sparhawk was published by John Lane of the Bodley house, who was known for promoting controversial works, especially by and about "New Women." Although readers would expect John Lane's books to be less sensational and low-brow than dime novels or criminal narratives, advertisements for *Patience Sparhawk* encouraged sensational expectations by describing the book as the "American maelstrom" and frequently quoting Atherton's claim that she "cannot write an article for a newspaper, much less a novel, without throwing the entire United States press into a ferment."¹⁶ *Patience Sparhawk* thus invites readers to expect a sensational or controversial conclusion, and Atherton uses these expectations to implicate sensationalism in the practice of electric execution. At a moment in which commercial literature widely claimed that electrical networks tamed the dangerous spark, Atherton's novel suggests that such a danger can only be tamed by confronting the public's fascination with it.

The novel is comprised of five books which detail Patience's life from an atavistic fifteen-year-old Californian, to the young wife of a boring, wealthy member of the New York elite, and finally to an independent woman who leaves her husband (and his money) to become a

journalist for the *Day*. In the final book of the novel, Patience is wrongly accused of killing her estranged husband, but condemned because the lower-class jury resents her snobbery and because she had a “violent past,” having attacked her mother once at the age of fifteen. Although Patience is eventually saved, her rescue comes not through conventional appeals, but through the vehement attempts of her love interest and lawyer, Garan Bourke, who does everything he can to save her, even encouraging a priest to elicit deceptively a confession from the woman whom he suspects of framing Patience.

The novel challenges the efficacy of the criminal justice system by stressing that Bourke must work around it to save Patience from wrongful execution, yet it does not promote radical systemic change. Although it features a powerful female protagonist with proto-feminist autonomy and willfulness, *Patience Sparhawk* never considers race or xenophobia that were (and still are) prominent factors in how the state implements capital punishment. It resolves the failure of the criminal justice system through romance, suggesting that a lack of active emotional agency is a larger cultural problem than the prejudices built into modern correctional institutions. Her critique of the criminal woman, therefore, does not extend to biological criminality in general. Still, published four years after the press gag clause was repealed from the Electric Execution Act and shortly after the English translation of Cesare Lombroso’s popular *The Female Offender*, *Patience Sparhawk* engages complex contemporary ideologies that sought to perceive bodies as texts. Provocatively, Atherton contrasts stereotypes of criminality with a romanticized image of electrical and magnetic evolutionary “forces,” which she depicts as more overwhelming and powerful than the fatal electric circuit.

Patience Sparhawk engages and complicates many of the assumptions Cesare Lombroso’s *The Female Offender* promoted. Although Lombroso’s *Criminal Man* has been

scuffed by historians as psuedo-scientific, his theories about women never suffered the same degree of criticism. As Nicole Hahn Rafter and Mary Gibson point out in the introduction to their 2004 translation of Cesare Lombroso's *Criminal Woman, the Prostitute, and the Normal Woman*, *La donna delinquente*'s significance to the Anglo-American world came partly from its rapid publication in English. "In 1895, just two years after the original Italian publication, [it] appeared in English as *The Female Offender*. This was a full sixteen years before the release of an English translation of *Criminal Man*. [...] For decades, there existed no other book on the causes of female crime and, indeed, very little other material in any form. *The Female Offender* continued to influence interpretations of female crime until the 1970s; it became the classic text in its field" (4). Thus, several of the key features that marked Patience's characterization might have been recognizable and incriminating to readers during the decade that the novel was in print.

In fact, although they do not mention Lombroso directly, other characters in the book acknowledge their fears that Patience has a born constitution that, combined with her chaotic upbringing, might predetermine an evil fate for her. At the age of fifteen, Patience's surrogate grandfather figure Mr. Foord tells her, "If you remain here you will grow up bitter and hard, and the result with your brain and temperament may be terrible" (49). Other early influences, such as her schoolteacher Miss Galpin worry that "her start in life had been all wrong, and it would matter more with her than with some others" (20). Even Garan Bourke — the handsome stranger she meets in the forest, who becomes her lawyer and love interest at the end of the novel — tells young Patience shortly after meeting her, "there's a force in you, and force doesn't go to waste, although it's more often than not misdirected" (56). These characters acknowledge an innate predisposition that worries them, which they fear might be exacerbated by the explosive

environment in which Patience is raised, under the care of her single, negligent mother, Madge Sparhawk. As I will discuss in greater depth below, this language of “force” and the capacity to use it effectively engages discourses of electro-vitalism, described in the work of Bruce Clarke and Tim Armstrong.

Atherton describes Madge as “handsome, but evil.” She elicits in her daughter “an uneasiness [that Patience] was not able to analyse” (33). A drunk who behaves lasciviously with ranch hands below her class, Madge Sparhawk represents a Lombrosian criminal type characterized by “exaggerated eroticism, which is abnormal in most women, [that] forms the starting point for vices and crimes. It turns female born criminals into unsociable beings, preoccupied entirely with the satisfaction of their own desire, like lustful savages whose sexuality has not been tamed by civilization and necessity” (Lombroso 185). Madge embodies the fears that characters like Mr. Foord and Miss Galpin read onto Patience; beyond that, the elder Sparhawk’s drunkenness and “exaggerated eroticism” lead the townspeople—especially the young, unsympathetic girls—to ostracize Patience. This social situation sparks the young protagonist’s first violent outbreak. During the scene in which Patience attacks her mother, Atherton emphasizes the intensity of Patience’s dark emotion, describing the girl as being “filled with a volcano of hate” (40), and “the incarnation of evil passions. She was elemental Hate, a young Cain” (41). Even Patience interprets her own rage as “the full measure of her inheritance” (41), gesturing towards her own conviction that she *is* a born female criminal.

After Madge initiates physical contact, shaking her daughter by the shoulders and boxing her ears, Patience “screamed harshly and springing at her mother clutched her about the throat. The lust to kill possessed her [...] Instinctively she tripped her mother and went down on top of her” (43). Even after her rage subsides, Patience “felt no repentance, no remorse. She was

horrified at the sight of the black veins in her soul; but she felt a certain satisfaction at having unbottled the wrath that consumed her, and having given her mother the physical equivalent of her own mental agony;” indeed, Patience even feels “elation” at becoming “the sensation of the hour” (43). Here, Atherton describes Patience according to a more specific Lombrosian type, the poisoner—the label which she will be given when falsely convicted later in the novel. Lombroso describes the poisoner’s criminal profile under the subsection “Hatred,” saying that women in this criminal category are “[d]riven by continuous irritation [and] need to discharge their aggravation on someone,” and their actions are marked by “impulsivity and casualness” (187).

Madge and Patience are not the only characters to exhibit qualities that Lombroso identified as potentially deviant—although Patience is the only character whose electric vitalism helps her evolve beyond her early atavisms. As Lombroso notes, “A factor that drags honest women into crime with increasing frequency is the way that society is starting to give them access to higher education while at the same time, bizarrely, refusing to allow them to practice their profession or earn a living. Many sufficiently intelligent women find themselves with nothing to show for the expense and effort of their education. Reduced to misery, aware that they deserve something better, and blocked from matrimony by men’s distaste for well-educated women, they have no alternative but suicide, crime, or prostitution” (196). Atherton investigates analogs for the latter case in several characters throughout the story. Patience’s childhood confidant, for example, is Rosita, a stereotypically-indolent and sensual Spanish character who trades sex with her manager for the fame and comfort of being the title actress on his stage. Although Rosita is monogamous, Patience regards her childhood companion’s business-like trade of sex for comfort as shocking; it destroys their once-intimate relationship. Patience’s higher-class sister-in-law Hal Peele ultimately makes a similar decision, opting to marry for

money instead of love. Although Patience does not disdain Hal's decision as much as Rosita's — instead she mildly praises Hal's choice as a logical recognition of her inability to live outside her class—these two characters represent women who must compromise their bodies (and to some degree their intelligence) in order to survive according to their preferred terms.

Beyond these sexual trade-offs, every female character in the story is similarly wed to uncomfortable, self-abnegating circumstances. Patience's surrogate guardian, Miss Tremont, is yoked to religion, and although Patience finds her guardian content, consistent, and respectable, she also interprets her religiosity as a fundamental delusion that substitutes “the Lord” for an overbearing husband (93). Miss Merrien, the journalist who helps Patience break free from her unhappy married life and enter the field of journalism, is tied to a job that depletes her body and barely sustains her. Miss Galpin was wed to “the novels of Mr. Howells and Mr. James,” and is therefore unable to fully understand Patience, or transcend the generic domestic lives her authors prescribe her (45). In each of these cases, Atherton demonstrates the severity of women's oppression. They are inevitably yoked to men, labor, or ideologies that inhibit their individual agency and creativity. Atherton's strategic and wide-ranging use of notions of criminality therefore suggests that, like Patience, every woman might contain a “force” that could easily be “misdirected.” According to the novel, traits of female criminality seem woven into the very fabric of nineteenth-century society.

Patience Sparhawk's parallels to Lombroso are not merely misleading; Patience uses her awareness of her biological imprint of criminality to her own advantage. Self-aware, she can consciously restrain herself. When she sees her mother after the original incident, for example, Patience thinks “with some satisfaction: ‘Now that I know myself I can control myself. If I'd jumped on her then she'd have fallen in the stove’” (59). Thus, Atherton suggests that evidence

of “bad blood” might be used effectively as a self-improvement tactic, rather than a method for identifying guilt. This small point actually marks a larger theme in the text: the potential for characters to evolve. Patience’s unconventionality and willfulness allow her to transcend her inherited criminality and use her “force” more effectively than most. The development of this once-atavistic character is further emphasized by the identity of the real murderess, Honora. An aristocratic cousin of Patience’s in-laws, the Peeles, Honora kills Beverly because she is outraged that he would choose another woman for his wife. Honora acts on her rage for two primary reasons: first, for revenge, because Beverly seduced her before marrying Patience, and second, because she felt herself *biologically* entitled to his hand in marriage as his *social* equal. Honora’s overconfidence in the meaningfulness of her blood contrasts Patience’s careful awareness that she should control the way her violent blood affects her. Thus, although both women hate Beverly and resent his marital bond to Patience, Patience’s self-awareness of her potentially-criminal biology allows her to avoid killing Beverly, even when she is tempted to do so. Honora has no such perspective, and consequently shows no such restraint. In the final chapters of the novel, Honora confesses to her crime and finally vindicates Patience, validating the progressive conviction that people might progress beyond the supposed predetermination of their blood. Crucially, Patience’s social evolution coincides with her growing sensitivity to electricity and magnetism, hinting at an electro-vitalist component to this electric-chair novel.

Later in life, Gertrude Atherton demonstrated her adherence to electro-vitalist beliefs by undergoing the Steinach treatment—a procedure in which she exposed her ovaries to X-Rays in order to revitalize her aging body—but she cultivated an allegiance to theories about electricity and vitalism much earlier, and she builds these theories into Patience’s gradual development throughout the novel.¹⁷ Atherton was proud of the intellectual inheritance of her ancestor, the

famous electrical experimenter Benjamin Franklin. She used the pseudonym Frank Lin in his honor, as well as her extended name Gertrude Franklin Horn Atherton. Beyond her ancestral interest in electricity, she read the work of intellectuals who perpetuated vitalist representations of electricity, such as Ralph Waldo Emerson, and she prided herself on the scientific perversity that others saw in her (*Adventures* 104). Her biography thus renders her narrative play with electricity as a multivalent symbol more conspicuous, and indeed, although this novel is famous for the electric chair scene at its conclusion, Atherton weaves vivid images of electricity throughout the entire book. Every key moment in Patience's life is marked by her heightened awareness of electrical and magnetic forces: "She felt higher above the earth than ever before, but more conscious of its magnetism" (36); "Her feet had touched that nether world where the electrical forces of the universe appear to be generated, and its wonder — not the man — conquered her. She shook horribly" (177); "There seems to be some tremendous magnetic force in the Universe that makes the human race nine-tenths Love — for want of a better name" (184). These metaphors correlate life and love with electricity, illustrating what Bruce Clarke describes as a common trend within modernism: "an electrovitalist conception of life as a polarized current adapted to the manifestations of physical energy in late-classical versions of thermodynamics and electromagnetism" (74). In the same way, electricity and magnetism are the most powerful cosmological forces in Patience's world. They are the sources from which all human affinities are wrought, and through which Patience grows from an atavistic child into a higher-class, relatively-autonomous woman.

Tim Armstrong, Bruce Clarke, and Carolyn Thomas de la Peña argue that, in the late nineteenth century, electricity was closely associated with reinvigoration through an adapted interpretation of vitalism. The concept of vitalism, originally derived from the belief that human

existence—in its social and bodily manifestations—cannot be governed by mechanistic or thermodynamic laws, was compounded by popularized interpretations of electromagnetism in two ways: (1) since electromagnetism did not seem to conform to Newtonian (classical) mechanics, it provided a way to describe humankind’s physical existence outside of these supposedly-determinist laws; and (2) because electricity appeared to unlock usable energy from bodies and the physical world, it was reckoned that this type of energy could defy the tendency towards energy loss (or heat death) that was commonly feared during this era.¹⁸ *Patience Sparhawk* touches on both aspects of electro-vitalism. It suggests that some elements of human experience cannot be described through idealized abstractions of reason alone, and, through its protagonist’s evolution, displays its investment in electro-vitalism as a counter-force to threatening forces modernity, including the other major electrical component of the novel—the electric chair. Ultimately, *Patience*’s atavism is completely displaced by her electro-vitalism, suggesting that Atherton is less concerned with how her readers understand criminality than with whether they view *Patience* as many viewed electric-chair victims like Kemmler and Harris: unsympathetically, with voyeuristic interest in their deaths.

Unlike Rockwell, Howells and Clemens, who preserve in their writings the mythologized notion that electric death is instantaneous, Atherton suggests that nothing is instant about it. Her electric chair scene *takes time*. It sidesteps the aspect which held such fascination for the late nineteenth-century reader and writer—the moment the current kills—drawing attention to the fact that the chair’s meanings are laboriously, consistently produced *around*, as well as within, the moment of electric shock through the circulation and production of stories which mediate the actual experience of electrocution. Like her contemporaries, Atherton was interested in the chair’s hardware, as her visit to Sing Sing attests. Yet in the novel she shifts attention away from

the device itself to demonstrate that no matter how rational, mystified, or mishandled the apparatus, it is still almost exclusively apprehended through written representations.¹⁹

Recriminating Readers and Reporters

After problematizing Lombroso's methods for reading criminality onto bodies, *Patience Sparhawk* addresses other contemporary methods for textualizing human lives, by emphasizing the role of writers in the process of electric execution. Although her violent history contributes to her conviction, Patience's indictment is first inspired by the speculation of a sensational journalist from *The Eye*, rival paper to her *Day*. Not only do newspapers catalyze her wrongful conviction, but they also eerily delimit Patience's behavior in the execution chamber and threaten to expedite her electrocution. By repeatedly linking sensational journalism to the violence of electric death, Atherton challenges journalists and readers' voyeuristic interest in following a crime story to its most sensational conclusion—in this case the electrocution of an innocent woman.

Atherton's antagonistic characterization of journalism gains intensity in the last book of the novel, in which Patience's awareness of herself as news trumps her fear of imminent death. She refuses brandy in the execution chamber because the "exaltation of heroism was beginning to possess her, and she would give no newspaper the chance to say that she owed her fortitude to alcohol" (482). Patience's comportment reveals her concern about how the journalists will depict her; and, since Carlyle Harris also refused an alcoholic beverage before his execution, it is one of the novel's direct references to his case. This scene reminds readers of actual electrocuted bodies just as it solidifies their expectation that Patience's story will parallel Harris's, whose

electrocution was followed by his loved ones' exclamations of his innocence ("Carlyle Harris is Dead").

Atherton codes Patience's behavior in the execution chamber as tragically metatextual: "there was a sense of unreality in it all. She felt as if she was going to play some great final act; she could not realize that the climax meant her own annihilation" (481). Although Patience is an outspoken character throughout the novel, in the execution chamber she can only function according to trite dramatic conventions. Interpreting the electrocution chamber as a setting in the journalists' sensational narratives, she abandons her sense of agency to act according to her perceived role. In these final scenes, Patience's stubborn notion that refusing to fight back will force the journalists to describe her as heroic implies that the value systems which inform popular representational frameworks perpetuate, rather than objectively describe, capital punishment. Her sense of "unreality" echoes Rockwell's experience as an observer, as well as Crane's concern that aesthetic expectations inhibit Americans' ability to comprehend the electric chair fully.

Throughout the execution chamber scene, Atherton oscillates between describing Patience's performance and her spectators: "Patience turned her eyes to the reporters. The young men were very pale. They regarded her with deep sympathy, and perhaps a bitter resentment at the impotence of their manhood. One looked as if he should faint, and turning his back suddenly raised something to his lips. Even the "Eye" man still held his hat in his hand, and had not resumed his seat. Only one watched her with wolfish curiosity. He was the youngest of them all, and it was his first great story" (483). Although only one of the journalists is "wolfish[ly]" eager for the story, and the majority of them are visibly and viscerally uncomfortable, Patience knows that they intend to profit by publicizing her death. The narrator codes their complicity in the

process as a dysfunction of their masculinity: “Why did they not rescue her, these young and vigorous men! They knew her to be innocent. They outmatched in number the guards. Where was their manhood? ...They were not knights with battle axes, but the most exaggerated product of modern civilisation” (487). The impotence of these otherwise “vigorous” men calls into question the myth of the masculine journalist by demonstrating how little will they actually exert against the pull of public interest. In this scene, Atherton engages a larger public debate that spanned that 1880s and 1890s, which questioned the efficacy, and indeed the “potency” of journalistic writing.²⁰ Ultimately, *Patience Sparhawk* implies that journalists preempt their ability to effect change and undermine their own masculinity by positioning themselves as “objective” observers. In contrast to these reporters, Bourke becomes the novel’s hero by conspicuously abandoning his claims to objectivity, and choosing to embrace his emotional investment in Patience’s rescue. Rather than representing a feminized flaw, his emotional connection with Patience is the key component of his heroism and masculinity. Indeed, the novel hints that the journalists’ inability to foster such emotional connections is their moral undoing. Rather than creating public sympathy for Patience, their writing fosters the sense of unreality about the electric chair that inhibits social action against it.

Atherton expands this critique by linking the culture of sensationalism with a broader lack of sympathy. The novel’s electric chair sequence includes a description of women eagerly anticipating Patience’s execution: “The women sat about on the slope opposite the prison, pushing the baby carriages absently back and forth, or gossiping with animation. Other women crowded up the bluff, settling themselves comfortably to await, with what patience they could muster, the elevation of the black flag” (479). These curious mothers represent a traditional domestic femininity, complicated by their cruel desire for Patience’s electrocution. Although the

women behave sensibly in accordance with the law, their collective interest registers in the novel as misdirected sympathy. Rather than lament or protest the execution of another woman, they revel in it.

As the scene shifts from the hilltop to the execution chamber, Atherton encourages readers to anticipate Patience's electrocution with similar excitement, collapsing their perspective with that of the women on the hill. By painting Patience as an a-religious, outspoken heroine, she forces readers to wonder whether this character, who after all did try to kill her mother, *should* be rescued. The possibility of execution includes the classically tragic element of nearly missed love, and it offers a description of something that had not yet happened anywhere in the world: the electrocution of a woman.²¹ One contemporary critic of the novel even said that Patience's rescue comes "somewhat to the regret of the sympathetic reader" ("Epic of the Advanced Reader" 444). Another expressed detachment from Patience and Garan Bourke, while admitting that the novel "closes with an excellent report of a murder trial, in which there is an unmistakable touch of dramatic power" ("Literature" 283). Though Atherton certainly believed that Bourke was a compelling character who fit "the proportions of the book," such statements were typical of American criticism of the novel, demonstrating that many readers were not invested in the romantic plot (*Adventures* 226). However, this critic's heightened interest in the criminal plot suggest that such readers' experiences would coincide with those of the women on the hill, as they voyeuristically await news of Patience's electrocution. In fact, the novel's rhetoric strongly encourages the reader to anticipate the protagonist's electrocution, whether they hope for that outcome or not. Atherton draws out the final scene, rhetorically heightening the suspense:

[Patience] dropped the head-keeper's arm and walked deliberately to the chair; but he caught her hand and held her back.

“Wait a minute,” he said, with affected gruffness. He went to the chair and examined it in detail. He asked a number of questions, which were answered by the electrician with haughty surprise. In a moment, the reporters were staring, and like a lighting flash one brain informed another that something was in the wind.

(484)

The head-keeper's questions delay the novel's progression and intensify its climax. But they also draw attention to the frequency of mistakes associated with the electric chair and invoke familiar electrocution narratives by reminding the reader that any of the chair's mechanisms could malfunction. Throughout this scene, Patience's matter-of-fact approach to her death and the narrator's use of images that evoke electric sparks (“like a lighting flash”) emphasize the seeming inevitability of her electrocution.

Atherton enhances the suspense by repeatedly describing sensations that seem to represent the electrocution itself, and then clarifying that the current was not yet turned on: “Her mind was a sudden blaze of light – which light she thought with a stifled shrink – in which every detail of the room was sharply accentuated” (486). This “blaze of light” reads like an imaginative account of the sensation of electrocution, though it merely describes Patience's fear. With each metaphorically electrical detail, Atherton heightens the reader's curiosity for the “shocking” conclusion.

After building readers' excitement for Patience's electrocution, Atherton discharges the suspenseful energy in a suddenly romantic turn. On the last page of the novel, Bourke rescues Patience just as she braces for the electric shock:

Suddenly her ears were pierced by a din which made her muscles leap against the straps. Was she in hell, and was this her greeting? She had felt a second's thankfulness that death had been painless.

Then, out of the babel of sound, she distinguished words which made her sit erect and open her eyes, her pulses bound, her blood leap [...] The cap had been removed, the men were unbuckling the straps [...] Round her the newspaper men were pressing, shouting and cheering, trying to get at her hand to shake it.

She smiled and held out her hand, but dared not speak to them. Pride still lived, and she was afraid she should cry. (488)

This final scene opens with Patience's muscles "leap[ing] against the straps," tantalizing readers with the promise of electrocution. By tricking her readers to imagine with Patience that the electrocution was over before the current was even switched on, Atherton pokes fun at the technological fantasy of instant and painless death. More importantly, by short-circuiting the electrocution narrative, she forces readers to confront their fantasies about the fatal spark and their urge to see the sensational narrative through to its end.

It may seem unusual for Atherton to play with her readers in such a way, but the novel's form is consistent with her self-identification as an author of unconventional intelligence and honesty. Atherton aspired to represent the "real," although she disliked the practitioners of literary realism and considered the genre myopic and faddish, famously referring to it as "littleism." She wanted her books to be popular, but she also wanted them to be exceptional in their representations of women and romance — aspects of life that she felt William Dean Howells' literary realism inadequately addressed. The form of *Patience Sparhawk* represents

Atherton's first attempt to deal with these issues by combining popular modern ideas and a romantically-inflected form of psychological realism.

Patience Sparhawk's conclusion does more than substitute romance for sensationalism. The journalists inhibit the novel's romantic conclusion, since Patience censors her emotional response to her rescue in their presence. To Atherton, every representation of electrocution is a fiction, an assemblage of fantasies about a "great story" and technological progress. By concluding with this hybrid of romance and sensation, she draws attention to the fact that readers are compelled by the mystery of electrocution, but also demonstrates that this attraction implies complicity in the outcome.

Patience Sparhawk is one of the only widely-circulated texts that directly implicates contemporary reading and writing practices in the practice of capital punishment. Every character in the novel, including Patience, approaches the imminent electrocution with misapplied, mediated self interest: the journalists need a story, Patience wants to limit the types of story they could honestly write about her, and the warden wants to continue with his schedule in an expedient, rationalized manner. In the novel, none of these characters has *the* authoritative reference frame needed to apprehend the stakes of the scene completely; but to Atherton this is only one part of the problem. These characters are inhibited from acting on their desire to save Patience because they have suspended their emotional connection to the case by thinking primarily of their relationship to the *story*. Bourke alone recognizes and acts upon his emotional connection to Patience; he considers the electric chair a legal and technological mechanism that *will kill* Patience, instead of the setting for a news story. In so doing, Bourke generates a new story rather than acting according to prescribed roles. Indeed, a dramatic rescue is a more unique sensation than the literal shock everyone else in the room anticipated.

In this way, Atherton addresses what I identified as one of the central problems of *A Connecticut Yankee in King Arthur's Court*: electrocution is only apprehended as a mysterious or unreal component within a larger fantasy of technological control. *Patience Sparhawk* constructs a completely different narrative about the fatal spark by shifting the reader's focus to the representational frameworks that shape the practice (and symbolic meanings) of electrocution. Although Atherton does not describe the hardware of electrical devices as *Connecticut Yankee* and newspaper articles about incidental electrocution did, she offers an alternative method by which individuals can manipulate technologies — by tinkering with the representations that shape the experience and the performance of electric execution. Atherton complicates contemporary fictional and nonfictional electrocution narratives by suggesting that the speed or efficiency of the apparatus — the focus of most written representations across the spectrum from legal and scientific texts through sensational news stories — is effectively irrelevant. Given its attractiveness and power as a symbol, Atherton suggests that the language used to describe the electric chair can affect how it is used and perceived. Although electrocution narratives predominantly described the chair as a curiosity of modern scientific and corporate culture, *Patience Sparhawk* shows that the chair might more effectively be used to demonstrate symbolically the power of emotional connection in the electric age.

Recognizing Electric Potentials

In addition to illuminating the journalists' lack of sympathy, the electric chair functions as symbol of emotional connection in itself. The romantic plot *depends on* the electrocution narrative; if it were not for the trial which sentences her to the chair, Patience would never have reunited with Bourke, her love interest and lawyer, who had rebuffed her chapters earlier.

Essentially, Patience experiences the electrocution chamber on the level of representation, as a space which creates—and can only be perceived within—stories. Yet the chair also has agency within the novel because it is only through her resignation to die in the chair that Patience can take on the role of the distressed damsel and enter into the romantic, chivalric plot without entirely abandoning her unique willfulness. While the straps of the electric chair (combined with her awareness of herself as a heroine in a sensational story) force Patience to wait passively for her death, Bourke uses the same power grid in the form of telegraphs and trains to save her. Electricity emerges from the novel as a symbol of masculinity and desire, *because* of the electric chair, not in spite of it.

Patience Sparhawk frames the electric chair as a multivalent symbol of cultural problems that underlie contemporary reading and writing practices, the lack of emotional communities, and the practice of criminal punishment; but it does not incite anxiety about electricity in general. In fact, the novel values electricity greatly. Given the depth of the novel's electric representations—its vitalizing function in Patience's universe, its masculine potency in relation to Bourke—the electric chair seems like a relatively mundane application. Although the story does not condemn the electric chair outright, it raises the question: if electricity is so abundantly powerful and meaningful, why does modern American society focus so much energy on petty, intentionally dangerous applications? Consequently, Atherton suggests the electric chair, like Patience and the other unfulfilled female characters in the novel, comes to represent misdirected force, used as punishment—even, potentially, against innocent bodies—rather than as a motive force for life-improvement. By categorizing electricity as a fundamental cosmological force, and its applications as comparatively unexceptional, the novel suggests that electricity might be more effectively harnessed for other means.

Although *Patience Sparhawk* does not explicitly question scientific motivations as some of her contemporaries did, the contrast between her formal investment in electro-vitalism and her depiction of the near electric execution of an innocent victim hint that current scientific and technological practices are myopic, functioning without a full perspective of what electricity could mean on a grander scale, and the importance of sympathetic connections in identifying that role to produce a more socially progressive paradigm of modern American life. Like Pauline Hopkins and Charlotte Perkins Gilman whose works I examine in my fourth chapter, Atherton suggests that contemporary electrical applications — and the representations that shape them — fall short of the full potential of electrical power.

End Notes

¹ This document is more commonly known as the Gerry Commission Report, named for committee member Elbridge T. Gerry. The other commissioners include Alfred P. Southwick and Matthew Hale.

² For more on the gag clause, see Banner, 163; Brandon, 163; Moran, 213.

³ For other examples of incidental electrocution described in plain, technical language, see: “Almost Killed by an Electric Shock,” *Chicago Daily Tribune* (30 Jul. 1889): 1; “Got an Electric Shock,” *New York Times* (2 Jul. 1890): 5; “Killed by an Electric Shock,” *New York Times* (17 Sep. 1891): 8.

⁴ For example, see Beard, “Experiments with Living Human Beings,” 611-757. In Chapter Four, I discuss briefly reports that raise questions about the medical practitioners who attended

executions. Suggesting that the electric charge merely put the condemned into a state of suspended animation, sensational articles occasionally suggestion that the autopsy knife was the cause of death in electric executions. See 196n.

⁵ This interpretation of Kemmler's body was further promulgated by the official report that analyzed his body after his execution. See "Report of Carlos F. MacDonald" and "The Kemmler Execution," *Chicago Daily Tribune* (8 Aug. 1890): 4.

⁶ Less sensational reports than the *Police Gazette's* discussed the desire to optimize electric execution more overtly. For descriptions of the electric chair that emphasize the scientific process, see "Kemmler's Death Chamber: How the Electric Current Is to Be Transmitted to His Body," *New York Times* (26 Apr. 1890): 2; and "Capital Punishment," *New York Times* (17 Dec. 1887): 4.

⁷ The material history of home electro-medical devices archived in the Bakken library and museum suggests that during the 1870s and 1880s, technological users would have to tinker with electrical circuits in many different ways, including mixing their own battery acid, adjusting the amount of current directed through circuits, or assembling different parts together.

⁸ For a fictional interpretation of the electric chair's association with the life-giving qualities of electricity, see Sir Arthur Conan Doyle, "The Los Amigos Fiasco," *Round the Red Lamp* (1892), in which a high-voltage, high-amperage attempt at a successfully-instantaneous electrocution does not kill the condemned criminal, but instead endows him with immortality and youthful vigor. Edith Wharton's "The Bolted Door" (1908) also offers an interesting example of a character who interprets death by electrocution as an alternative to degeneration.

⁹ For more on Edison's role in the invention of the electric chair, see Barnes, 24; Franklin, "Billy Budd and Capital Punishment: A Tale of Three Centuries," 77-89.

¹⁰ The fantasy of the simple, death-dealing electric button appears across every literary register during this era, from the technical and high-brow that I discuss in this chapter, through the lower brow. The button itself varies—in some cases it could be a dial or a series of switches—but the ease of operation is emphasized in each case. For example, consider the cover to the 1898 dime novel, *Fighting Electric Fiends, or, Bob Ferret Among the Wire Tappers*, pictured below. This cover depicts a scene in the story in which a monkey operates an electric chair in a villain's lair, mimicking behavior he has witnessed previously. The dial configuration allows the monkey to turn on a suspenseful but nonfatal voltage. While this electric chair is operated by a dial rather than a button, such stories contribute to a similar cultural fantasy of an elaborate electrical circuit that could make executions instantaneous and easy.



¹¹ See also Neustadter, 80.

¹² Stephen Crane picks up on these themes in *The Monster* (1899). See Naito, 35-63.

¹³ Note that the illustration paired with Crane's article appeals to the literary conventions that Crane raises questions about, arguably minimizing or confusing the impact of this piece of cultural criticism.

¹⁴ For more on Atherton's visit to Sing Sing, see Leider, 147.

¹⁵ Gertrude Atherton, *Adventures of a Novelist*, 151, 222.

¹⁶ See advertisements "Patience Sparhawk and Her Times," *The Dial: A Semi-monthly Journal of Literary Criticism, Discussion and Information* (1 Oct. 1897):170; and "Topics of the Times," *New York Times* (15 May 1898): 18.

¹⁷ Atherton famously fictionalized her experience of the Steinach treatment in her novel *Black Oxen* (1923).

¹⁸ For more on popular and technical definitions of entropy and electro-vitalism, see: Armstrong, 14-17; Clarke, 74; Mirowski, 61-65, 361; and Peña, 27-29.

¹⁹ *Patience Sparhawk's* critical depiction of sensational journalism begins shortly after Patience first finds herself rendered as "news," see for example p. 43, 290. For more on Atherton's representations of journalism, see Lutes, 104.

²⁰ This issue was discussed throughout various newspapers and other literary venues, such as in the work of renowned journalist and friend of Atherton, Elizabeth Jordan, whose 1898 short story "Ruth Herrick's Assignment" illustrates a sympathetic bond between women — including between a female journalist and a murderess — could be stronger than the journalist's allegiance to his or her assignment.

²¹ The first woman to be executed in the electric chair was Martha M. Place at Sing Sing Prison on March 20, 1899.

Chapter Three | Nuptials and Networks: The Romance of Western Electrification

In the electrocution narratives I explore above, the renegade spark challenged conventional wisdom that networks could tame electricity effectively. This dynamic became complicated in the West, where naturally-occurring electricity was often described as a benefit rather than a problem. As a result, the western electrification narratives I recuperate in this chapter tend to be concerned with the tensions between eastern business practices and western ways of life, rather than with the tensions between the equitable distribution of electrical power and the dangerous allure of controlling its sparks. Between 1895 and 1915—while advertisements promoted the idea that electrical networks could unite the nation from coast to coast—western literature questioned how these systems might affect vibrant regional identities.¹ Engaging this body of literature, this chapter explores how conceptions of electrification reshaped the image of the West, and, in turn, how depictions of western electrification impacted the American literary imagination.

Although eastern corporations often oversaw or financially backed western technological development during this era, the West continued to connote a social and ecological wildness which inflected the public's understanding of western electrification. Consequently, while John Muir, Theodore Roosevelt, and Frederick Jackson Turner lamented the closing of the frontier, a diverse and comparably-visible group of public figures—including popular authors like Jack London, as well as electrical engineers and university administrators—emphasized the opening of a technological frontier in its place.² Narratives about this “new” frontier tended to depict electrification as coextensive with the history of westward expansion. For example, “Transmission Systems of the Great West” (1912), an article in the widely-circulated technical

journal *Electrical World*, claimed that “Modern energy transmission has been born and raised, so to speak, on the Pacific Coast [...], perhaps *on account of the indomitable spirit of the pioneer that has not yet died out in the Far West*” (1142, my emphasis). In addition to depicting the engineer as a modern incarnation of the frontiersperson, such narratives about western electrification often posited a symbiotic relationship between regional power networks and local ecologies.³ Thus, despite the popularity of folk icons that fostered nostalgia for the unindustrial West, from Paul Bunyan through the Lone Ranger, the abstracted categories of “technology” (associated with industry) and “frontier” (associated with pristine landscapes) were not necessarily described as antagonistic.⁴ In fact, the wide circulation of frontier electrification narratives suggests a high degree of public interest in the marriage of the “Old West” and new technology.⁵

Since metaphors and images of electricity permeate a good deal of western literature, to narrow the scope of this chapter I focus on texts that directly address the construction and use of electrical systems in rugged western settings.⁶ Specifically, I analyze the “thick” descriptions of emergent power distribution systems in Mary Hallock Foote’s “The Harshaw Bride” (1896), and Jack London’s *Burning Daylight* (1910) and *The Valley of the Moon* (1913). Rather than decry the modernization of the one-time frontier, these texts optimistically re-imagine electrical production as regional, challenging the assumption that eastern networks could be transplanted without change onto western landscapes. In so doing, they explore how electrical systems might link the West to the East, how they might reshape communities and geographies, and how they might affect the electric vitality of individual bodies. By placing Foote and London in conversation with contemporary telephone advertisements and technical literature, this chapter

investigates how new electrical networks shaped American identities on the closing (and closed) frontier.

Western Power Dynamics

In Gilded-Age narratives about the West, naturally-occurring electricity was often described as an ethereal phenomenon rather than a spark, an expected atmospheric condition rather than a sudden disruption. Even the United States Geological Survey labeled a perceived abundance of atmospheric electricity as a defining characteristic of the western territories. In the otherwise dry *Sixth Annual Report of the United States Geological Survey of the Territories* (1873), Henry Gannett explains his inspiration to name “Electric Peak” in rich detail:

A thunder-shower was approaching as we neared the summit of the mountain. I was above the others of the party, and, when [...] the electric current began to pass through my body. At first I felt nothing, but heard a crackling noise, similar to a rapid discharge of sparks from a friction machine. Immediately after, I began to feel a tingling or prickling sensation in my head and the ends of my fingers, which, as well as the noise, increased rapidly, until, when I reached the top, the noise, which had not changed its character, was deafening, and my hair stood completely on end, while the tingling, pricking sensation was absolutely painful. Taking off my hat partially relieved it. I started down again, and met the others twenty-five or thirty feet below the summit. They were affected similarly, but in a less degree. One of them attempted to go to the top, but had proceeded but a few feet when he received quite a severe shock, which felled him as if he had

stumbled. We then returned down the mountain about three hundred feet, and to this point we still heard and felt the electricity. (807)

This anecdote, which has continued to be reprinted in publicity about Yellowstone for over a century, depicts a thick electrical atmosphere that permeates and overtakes the surveyors. It transforms them from objective observers into writhing bodies. Though literally “hair-raising,” the current is neither fatal nor horrifying. Reminiscent of Thomas Jefferson’s description of the natural bridge in *Notes on the State of Virginia* (1781), Gannett figures electricity as the material manifestation of America’s natural sublime.

In his influential medical treatise *American Nervousness* (1881), George Miller Beard echoes Gannett’s description of the western atmosphere as electric, claiming: “In regions where the atmosphere is excessively dry, as in the Rocky Mountains, human beings—indeed all animals, become constantly acting lightning-rods, liable at any moment to be made a convenient pathway through which electricity going to or from the earth seeks an equilibrium” (147). The image of the living lightning rod suggests that electricity can safely permeate western bodies without permanently harming them—unlike the electrocuted bodies I explore in previous chapters. Consequently, popular journalists and lecturers like George Wharton James could claim that electricity is in part what makes the West so exhilarating. In his *The Wonders of the Colorado Desert* (1906), James lists “seductive electric conditions” among the “Desert surprises,” contending that “During the cool of the early morning, while the air is like champagne or some electric fluid coursing through his veins and giving to nerves and muscles unwonted sensations of stimulus and exaltation” (35). These representations suggest that the electric atmosphere is invigorating, surprising, and healthful rather than dangerous. Without the

need to “tame” electricity—to make it one’s “slave”—it becomes less clear whether electric networks would represent progress in the western context.

Even so, these networks were an important part of American westward expansion.⁷ From Henry Farney’s “vanishing natives” series, *the Song of the Talking Wire* (1904) associates the first large-scale electrical network, the telegraph, with the creation of the modern West (Figure 8). Telegraph poles divide his canvas, thinly separating the native figure from the *memento*



Figure 8: Henry Farney, *The Song of the Talking Wire* (1904)

mori—the bull’s skull and the deer carcasses. The sunset accentuates this theme, suggesting that this still frame captures the end of an era—for the native, the hunter, and the rugged western individual. Although the piece is titled *the Song of the Talking Wire*, the wire is conspicuously absent, encouraging the viewer to consider the connection between the native and the telegraph pole, instead of the transcontinental connections more commonly associated with this technology. The sober intimacy between these two figures suggests that the telegraph has become a natural part of the western landscape. A synecdoche for the people who construct, repair, and use this system, the telegraph poles seem to hint that the end of an indigenous culture corresponds to the rise of a new techno-social regime.

The conception of westward expansion represented and perpetuated by *The Song of the Talking Wire* linked technologies like the telegraph with Manifest Destiny. Yet despite the popularity of this technological-determinist understanding of American imperialism, electrical technologies did not always signify the dominance of so-called “modern civilization.” In the West, where the electric atmosphere could easily damage cables and poles, the question of whether electrical networks signified the superiority or vulnerability of their users was a recurring concern, which has been underexplored by historians. Eugene Ware’s autobiographical history, *The Indian War of 1864* (1911), provides a useful context for understanding this tension between superiority and vulnerability. First, he explains how settlers used telegraphs to assert superiority over indigenous peoples:

In order to give the Indians a profound respect for the wire, chiefs had formerly been called in and had been told to make up a story and then separate. When afterwards the story was told to one operator where one chief was present, it was told at another station to the other chief in such a way as to produce the most stupendous dread. No effort was made to explain it to the Indians upon any scientific principle, but it was given the appearance of a black and diabolical art. The Indians were given some electric shocks; and every conceivable plan, to make them afraid of the wire, was indulged in by the officers and employes of the company, it being much to their financial advantage to make the Indian dread the wire. (110-111)

Ware’s account demonstrates how the white settlers used their ability to control electric power as a means to manipulate—and literally shock—the native population. The telegraph operators

deliberately withhold scientific explanations, mystifying the wires in order to protect their financial investment.

His next reference to the telegraph undermines this early image of technological superiority. After a lightning peal frightens the men in his company, Ware explains: “Several were stunned, several fell over the bank, and the balance jumped down. The lightning had struck one of the telegraph poles not far from us, and splintered the poles or damaged them for a great distance on each side. It was such an astonishing peal that it was a little while before anybody spoke” (251). The lightning storm complicates the efficacy of this communications system: it attracts electricity from the charged western atmosphere, destroying the network for a one-mile radius. Although rebuilding the telegraph system underground would have been prohibitively expensive and time consuming, Ware’s company could have set up simple safeguards, like lightning rods, to protect against such common atmospheric phenomena in the future. Instead, they labor for weeks to recreate the same system of poles and wires, suggesting that they overstated their understanding of electrical science when tricking the Native American chiefs.

By the end of Ware’s account, his military company completely loses its superficial control over the electric network. No longer mystified by the technology, Native Americans from the Southern Confederacy “cut down telegraph poles, and camped from time to time, and burned the telegraph poles for a long distance,” destroying more than seven times the number of telegraph poles than the electrical storm (510). Ware recalls that “Those were the days when there were no railroads and no rapid mail communications, and the telegraph wire was in very great demand, and as there was only one wire to do the business through on each route, it was busy every minute of the day, from the end of one month to the end of another; and so when the line was down, great interests suffered, as did also many private and personal matters” (530-1).

Throughout his history the telegraph aids the settlers as they continue westward. It is their only way to ask for help and to stay connected with the East. Yet their dependence on this system, and their inability to improvise by modifying the technology or working without it, becomes a major vulnerability.

West Weds East: The Power-Plant Romance

Ware's history reveals that modern networks do not necessarily signify the superiority of the group that produces or uses them; instead, they facilitate an array of possible power dynamics and social meanings. This ambiguity might help us understand the nostalgic frontier myth and the myth of Anglo-Saxon technological dominance as complementary, rather than competing, narratives of American exceptionalism.⁸ Indeed, although literary and cultural histories of the American West either isolate these mythologies or describe them as antithetical, narratives about western electrification tended to balance nostalgia for bygone times with excitement for nationwide modernization. For example, the *Electrical Age* article "Developments in the West" (1897) seamlessly describes the transition from Old West to New: "We have lost that picturesque vision which rose like a mirage from the high hills and wide-stretching plains of the West; it has passed, with its prairie schooners, bands of whopping indians and devil-may-care cowboys, into tradition and ancient history. The West, in accepting civilization, has undergone enchantment and transformation. It is no longer wild and woolly, but a great centre of industries, healthy development and potential wealth." Like Farney's *Song of the Talking Wire*, this passage begins by lamenting the loss of the native and the "picturesque vision" of the frontier. Nonetheless, it describes western industrialization positively, likening the "healthy development" of the West to "enchantment." After briefly describing the newfound ease of transcontinental travel, the article celebrates how the western technological frontier might reinvigorate and strengthen the nation:

[T]his great Trans-Mississippi exposition will be like a great bridge of enlightenment to the conservative East, bringing both into closer communion for mutual good. Those that live in some of our old fashioned eastern cities, on attending the exposition, will realize in surprise how great a spirit of advancement is animating these distant centres; how powerful the incentive that within half a century built up these great monuments to western civilization and, lastly, what force of character, hardihood, vigor, and intelligence were required to lay the foundations of a city in such inimical surroundings. We should congratulate the West for their efforts in strengthening this mighty brotherhood that reaches from ocean to ocean.

Without explicitly referencing the frontier, this piece evokes stereotypes about the spirit of the pioneer by emphasizing the “hardihood” and “vigor” of the engineers who work “in such inimical surroundings.” Although it describes the relationship between east and west as a “great bridge” that does “mutual good,” the article hints that the benefits are asymmetrical, implying that the “conservative” and “old-fashioned” East will be revitalized by the western “spirit of advancement.” Like many articles about western electrification, “Developments in the West” participates in a trend that critics have identified at the heart of Gilded-Age literature, by promoting the idea “that the West will redeem the East, instead of the more traditional idea that the East will reform the West in its own image” (Folsom 91).

While such texts about western electrification draw heavily on the image of the pioneer, it is worth noting that the West did change the field of electrical engineering appreciably. Between 1895 and 1915, western land-grant universities were educating a new class of engineers who faced a different set of problems than their eastern counterparts. As “Transmission Systems

of the Great West” argues: “The engineers who have worked chiefly under Coast conditions [...] have no respect for constituted authority when reliance upon it leads to results less directly than seems desirable. If an impossible dam has to be erected to store the water for a great transmission, they build it and it stays in place and does its work. [...] If three or four stations must be operated together in defiance of all precedents, in go the switches, and the plants operate as if they had worked together from the very beginning.” (1142).

Although it is rare to find texts that romanticize the electrical engineer to this extent outside of technical journals, turn-of-the-century western literature was similarly interested in how the West might create new social meanings for electrical networks. For example, between May and June 1896 the upper-middle-class periodical, *The Century*, published “The Harshaw Bride,” a novella that depicts how a power-plant might fit into a rural community in the young state of Idaho.⁹ Provocatively, this novella raises questions about control over electric power utilities in the West during an era in which “the Edison system, modified to work with alternating current, was rapidly becoming the norm throughout the West,” almost a decade before Seattle and Tacoma would vote to make electric utilities public (*Narratives and Spaces* 30). Written by Mary Hallock Foote, who had already earned national acclaim for her novel *John Bodewin’s Testimony* (1886), “The Harshaw Bride” incorporates a power-plant narrative into a conventional romance.¹⁰ Thus, in addition to the anticipated marriage between the hero and heroine, the novella concludes with a less-likely union between two rival technologists: “electrical transmission has shaken hands with compressed air. The millennium must be on the way, for never did two men want so nearly the same thing, and yet agree to take each what the other does not need” (272). As Richard Etulain argues, Foote’s body of work frequently expressed anxiety about “threatening individualism,” Populism, and union radicals (Etulain 14).

In this context, “The Harshaw Bride” represents an attempt to claim a regional technological identity, unaffected by eastern politics, in the early years of western electrification.

“The Harshaw Bride” is comprised of letters written by the narrator, Mrs. Tom Daly, to her invalid sister. Combining elements of realism and romance, it offers a complex panorama of daily life in Idaho in the early days of its statehood. The story follows an Englishwoman named Kitty Comyn (playing on the fact that she is *comin’ West*) as she travels to Idaho to marry her fiancée of four years, Micky Harshaw. However, Micky never intended to marry Kitty. In fact, he has recently married another woman. The narrative begins after Micky’s cousin Cecil telegraphs Kitty an affectionate invitation to Idaho, correctly but deceptively signing it “Mr. Harshaw.” Secretly in love with the heroine, Cecil reveals Micky’s unsavory character in the hopes that Kitty will break her engagement to one Harshaw and agree to marry the other. Mrs. Daly’s narrative traces Kitty’s gradual realization that Cecil loves her. Provocatively, as the romantic plot unfolds, Cecil and Tom Daly discuss plans to open a power plant near the Harshaw ranch. The novella ends with the promise of nuptials and networks, as Cecil engages Kitty and takes his first steps towards opening a power plant. Mrs. Daly’s alternately dubious and optimistic narration about her husband’s scheme offers a uniquely nuanced perspective on the risks and potential benefits of incorporating electrical technologies into the American western landscape.

Early on, while Mrs. Daly comforts the distraught Kitty, Tom Daly converses with Cecil about “a scheme that [he] has had in mind ever since he first saw the Thousand Springs six years ago, when he had the Snake River placer-mining fever,” going on to explain that “It was of no use then, because electrical transmission was in its infancy, its long-distance capacities undreamed of” (198). Associating Tom’s plan to build a power plant with “mining fever,” Foote

incorporates electrification into the conventional narrative about the West as a place of entrepreneurial opportunity. Like earlier prospectors who dredged rivers for gold, Tom sees the power plant as a way to reap wealth from the water. The novella incorporates electricity directly into the mining economy of the West, since Tom plans to use the power he generates to illuminate distant mines. By likening his scheme to mining, Mrs. Daly also suggests that Tom's proposed investment is a risk, or, as she describes it, a "wild-goose chas[e]" (200).

Despite her reservations, Mrs. Daly proves to be a savvy partner. She points out that Kitty is an aristocratic Englishwoman, and would likely be trained in watercolor. When Kitty turns out to be a talented illustrator indeed, Mrs. Daly suggests that the young visitor could paint a picture of the Springs to help attract potential investors: "All the photographs of the Springs, it seems, have the disastrous effect of dwarfing their height and magnitude. [...] This would be fatal to our schemers' claims as to the volume of water they are supposed to furnish for an electrical power plant to supply the Silver City mines, one hundred miles away. Hence the demand of Science for Art, with her point of view" (205). An illustrator herself, Foote emphasizes the importance of manipulating representations in the Gilded Age economy. In so doing, she suggests that a woman's point of view might have a more reliable depth of field than a camera, marking her ambivalence about the progress represented by new technologies, while also—perhaps inadvertently—hinting at the often-erased fact that women frequently participated in the production of scientific knowledge as uncredited illustrators. Advocating a union of implicitly-masculine "Science" and implicitly-feminine "Art," Mrs. Daly foreshadows the conclusion to the novella, which reconciles the practical and aesthetic value of the Thousand Springs.

The cohort treks across the rugged Idahoan terrain, so that Kitty can illustrate the Thousand Springs. Mrs. Daly's description of the journey illustrates a gendered division of labor;

but it also claims a place for women, both in the development of technological “schemes” and in the rough geography of the West. Amidst her descriptions of the breathtaking landscape the only ugly scene the travelers encounter is a group of cowboys taunting a bloodied wildcat (217-8). Throughout the journey, she repeatedly suggests that—contrary to hypermasculine cowboy fantasies—western life is invigoratingly strenuous for women as well as men. The long ride exhausts all of the travelers, but also acts as a “medicine” that clears Kitty’s mind so that she can recognize Cecil as her ideal match (222). In the process of this short trip, Kitty becomes an exemplar of Frederick Jackson Turner’s thesis, exclaiming that “*this* is not the Kitty Comyn who left England--six weeks, is it?—or six years ago!” as she commits to remain in the West rather than to return to England (264).

As Kitty becomes increasingly American and her romantic plot nears resolution, the power plant plot faces a series of complications. Confronting land disputes similar to those gold- and silver-miners faced earlier in the nineteenth century, Tom and Cecil learn that another “prospector” had already claimed the area for a competing technological scheme: “There has been an engineer on the ground since last summer, when all this water was free. He has located a vast deal of it, perhaps the whole [...] His ladders and pipes, and all his hopeful apparatus, are clinging now like cobwebs to the face of the bluff, against that flashing, creaming broadside of the springs at their greatest height and fall. I was pitying the poor man and his folly, but Tom says the plan is perfectly feasible” (241-2). The protagonists cannot ascertain from the “cobweb” of pipes whether the previous claimant owns the part of the Springs they hope to use—the Snow Bank—or if he merely owns an adjacent bluff. Compounding this dilemma, the engineer who arranged this pneumatic irrigation system is rumored to be in the East searching for investors, making it impossible for Cecil and Tom to stake their claim officially. By underlining these

frustrations, Foote distinguishes between eastern and western technological development. In the East, power lines followed roads and train tracks; in the West, electrified networks often preceded roads and other conveniences.

Picking up on a theme from her earlier fiction, Foote “point[s] out how much western colonies were at the mercy of eastern investors” (Etulain 11). Specifically, “The Harshaw Bride” notes that technological entrepreneurs would have to travel between urban centers to find the investors and equipment needed to bring cutting-edge technologies into remote, unpaved areas. Even Tom and Cecil’s scheme is not wholly western; like the engineer who left “ladders and pipes [...] clinging [...] to the face of the bluff,” Cecil would have to travel east to seek investors before breaking ground on the power plant project. According to “The Harshaw Bride,” the asymmetrical development of the West made it difficult for even the most technologically-adept community members to implement changes locally. Yet, inasmuch as Foote’s westerners rely on eastern investors, they are also invaluable to the process of western electrification because they can locate power sources that are inaccessible to outsiders. As a result, the novella hints that locals should have a say (and a financial stake) in how technologies like electrical networks are integrated into western communities.¹¹

“The Harshaw Bride” goes on to suggest that this feedback between East and West—and the continued demand to find new opportunities and wealth on the vanishing frontier—forces small western communities to reconcile competing ideas about how to harness natural resources. The absent engineer, whose name we later learn is Norman Fleet, wants to use the water to irrigate his land; Cecil and Tom intend to harness the water to generate electric power; and Mrs. Daly suggests that neither of these schemes could be as valuable as the sublimity of the pristine landscape. While Cecil and Tom contemplate how they might share the Springs with the rival

engineer, Mrs. Daly shares her disdain about both projects with her sister: “You can fancy what wild presumption it must seem that a mere man should think to reverse those torrents and make them climb the bluff or cram them into an iron pipe and send them like paid laborers to hoist and pump and grind, and light the streets at Silver City, a hundred miles away. And how the cataracts will shout while these two pigmies compare their rival claims to ownership--in a force that with one stroke could lay them as flat as last year's leaves in the bottom of a mill-race!” (243).

In Mrs. Daly’s estimation electricity is not a sublime naturally-occurring power. It is a relatively mundane technology no different from compressed air. Yet despite her almost-religious appreciation for the Springs, Mrs. Daly is a conservative and dutiful wife, and she chooses not to confront her husband with her concerns.¹² Instead, Foote introduces the conservationist opinion through another female character, Miss Malcom.

Miss Malcom owns an island in the middle of the Springs and resists Tom and Cecil’s attempts to gain right of way across it. Tom explains his scheme to Miss Malcom, but “Nothing of its scientific interest, its difficulties, its commercial value, even its benefit to herself, appealed to the little islander” (251). Miss Malcom values the beauty of the Thousand Springs, and claims that the power plant would degrade its natural wonder. When Mrs. Daly asks whether the Springs belong to her, Miss Malcom exclaims, “The *sight* of it belongs to me [...] I will not have the place all littered up with their pipes and power-plants. Look out there! Look at that! Has any one the right to come here and spoil such a lovely thing as that?” (256-7). Like John Muir and the increasingly-vocal conservationists, Miss Malcom ostensibly worries that technological modernization will “spoil” the scenery—and Mrs. Daly clearly agrees that this natural beauty is worth saving. Throughout the chapter, she repeatedly compares the Thousand Springs to jewels, suggesting that the Springs do not need to be harnessed and monetized to be valuable. Yet

although she initially defends Miss Malcom to her husband, explaining that he is asking the woman to “sign her own death warrant” (250), she goes on to denigrate the “islander,” comparing her to “any child [...] in defense of a beloved toy” (251). Most importantly, by suggesting that Tom’s scheme only poses an aesthetic risk, the narrator obscures the potential ecological damage that could be caused by reshaping the landscape and the flow of water with a new industrial power system.

Foote further complicates the conservationist perspective, by ultimately revealing that Miss Malcom only hesitated to sign the contract with Tom and Cecil out of devotion to the rival technologist, Mr. Fleet. More interested in her social networks than in the sight of the Springs, Miss Malcom chooses to share her island for two reasons: she realizes that the power-plant will not hurt Mr. Fleet, and she feels indebted to Cecil for helping her nurse the “old Indian girl who lives with her” (249). Although Mrs. Daly adores the pristine Springs, the novella proposes that the harmonious union of people and ideas might be more important than preserving a waterfall merely for its aesthetic value. If the women characters are suspicious of technological development in general, they are ultimately convinced that a power station installed by a good neighbor and good romantic partner might represent “progress” after all. Consequently, the story concludes with the promise of three new unions—between Miss Malcom and Mr. Fleet, Kitty and Cecil, and technology and the Springs:

Our rival schemer, Mr. Norman Fleet, has arrived, and electrical transmission has shaken hands with compressed air. The millennium must be on the way, for never did two men want so nearly the same thing, and yet agree to take each what the other does not need.

[...] But having heard a little bird whisper that [Mr. Fleet] is in love, and successfully so, I am not so surprised at his amiability. Neither am I altogether unprepared, if the little bird's whisper be true, for the fact that Miss Malcolm is becoming reconciled to Tom's designs upon her beloved scenery. For the sake of consistency, and that pure devotion to the Beautiful, so rare in this sordid age, I could have wished that she had not weakened so suddenly; but for Tom's sake I am very glad. She is clay in the hands of the potter, now that she knows my husband does not want "all the water," and that his success does not mean the failure of Mr. Norman Fleet. (272-3)

Given the narrator's admiration for the Thousand Springs in its natural state, this conclusion might seem more like a capitulation than a compromise. Yet Foote—who was a reluctant westerner herself—was known for her depictions of the West as enervating and "disturbingly uncivilized," so the whimsy of "The Harshaw Bride" might signal a qualified approval of modernization to readers familiar with her work (Etulain 13).¹³

By concluding with romantic unions, Foote describes modernization in terms of marriage rather than intrusion or destruction. Consistent with the author's conservative opinions about women's roles, nature (and the women characters' qualified appreciation of it) becomes subordinate to—but not entirely devalued by—this harmonious conclusion. Although Mrs. Daly laments that Miss Malcolm did not hold her ground and preserve the Springs, she also notes that neither project will take "all the water," suggesting that the Springs' use value and aesthetic or inherent value might be compatible. Thus, the novella closes with a vision of technological progress that emphasizes the bonds of community and family over individual competition and dominance.

Foote's romantic conclusion might be read in dialogue with other representations of community-building electrical networks. Throughout the turn of the twentieth century, western electrification was often imagined as a marriage of East and West, or as a way to bring disparate communities together. For example, although the story does not sustain an interest in electricity, María Amparo Ruiz de Burton's recently-recovered novel *The Squatter and the Don* (1885) imagines a telephone system as mediating the conflict between Anglo squatters and Californios: "If there had been such a thing as communicating by telephone in the days of '72, and there had been those magic wires spanning the distance between William Darrell's house in Alameda County and that of Don Mariano Alamar in San Diego County, with power to transmit the human voice for five hundred miles, a listener at either end would have heard various discussions upon the same subject, differentiated only by circumstances" (62). Ruiz de Burton describes the yet-to-be-invented telephone as a horizontal system of connections that could equalize the squatter and the Don, in contrast to the vertical racial hierarchy that defines them as antagonists. Later fictions, such as the 1905 dime novel "Electric Bob's Sea Cat," corroborate Ruiz de Burton's claim, imagining that electrical technologies could (and should) be used to enforce justice and promote sympathy, even when it means defending racial others, like Mexican land owners, against Yankee claim jumpers.¹⁴

This conception of the electrical network as a system of horizontal social connections was promoted on a national scale in commercial literature, as well. For example, consider the following American Telephone and Telegraph Company (AT&T) advertising campaigns [Figures 9 and 10]. Figure 9 describes telephone communication as a physical touching of elbows, offering an embodied metaphor of horizontality that could be seen as an enhancement of American democracy (as the advertisement suggests)—or perhaps as an uncomfortable

disruption of bourgeois manners and Anglo-Saxon conventions of personal space. The title, “A United Nation,” equates American citizenship with telephone use; and the attendant text claims that “Only by such a universal system can a nation be bound together.” Provocatively implying that the nation was not “bound together” before the advent of the telephone, the advertisement illustrates its inclusiveness by featuring a woman among the collage of white, upper-middle class men. Circulated in the decade before women gained the right to vote, “A United Nation” suggests that women can participate as citizens in what AT&T often called “the Bell Democracy,” although they were not yet fully enfranchised American citizens.

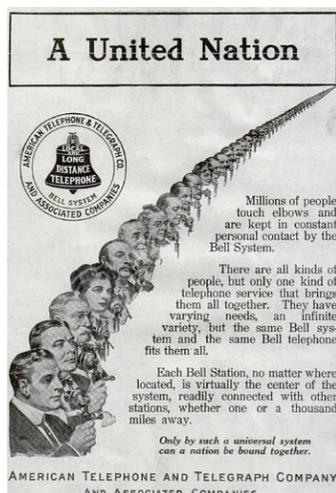


Figure 9: “A United Nation” (1910)



Figure 10: “The Merger of East and West” (1913)

Published three years after “A United Nation,” Figure 10 quotes Rudyard Kipling to imply that the invention of the telephone erased the distinctions between east and west—although it ironically depicts east and west as distinct, irreducible masculine types. Furthermore,

although AT&T invariably represented their consumers as white throughout the 1910s, the text in Figure 8 notes the potential for “men... of different races” to connect through the telephone, in the way that Ruiz de Burton imagined. In this way, “The Merger of East and West” advertisement highlights the difference it claims to eradicate, hinting that modern communications systems might create a temporary equivalence between unequal (or perhaps incomparable) parties.¹⁵ This image of horizontal connection represents the potential for sympathy in *The Squatter and the Don* and “The Harshaw Bride,” but in London’s fiction it raises questions about the stability of American national identity.¹⁶ Indeed, London directly addresses concerns about such horizontal connections in *The Valley of the Moon*, when the protagonists, Saxon and Billy, meet an “American” telephone lineman who complains, “here am I, workin’ for the telephone company an’ puttin’ in a telephone for [a man] from the Azores that can’t speak American yet” (311). To the lineman and to the narrator of the novel the problem with the Bell Democracy is that it connects and enfranchises the wrong people.

By suggesting that these networks allow racial minorities and bourgeois Americans to reap the benefits of working-class Anglo-Saxon labor, London’s fiction illustrates how systems that connect people across distant points in space might disrupt local geographies. For example, his short story, “South of the Slot,” (1914) illustrates how the material imprint of various networks—in this case, the “iron crack” that guides the cable cars—divides the city of San Francisco into a “respectable business” district and “the abodes of the working class” (34). Consequently, while AT&T advertised the decentralization of electrical networks as empowering and democratic, London’s Sonoma Valley fictions resist the many-centered system, rejecting the Bell Democracy in favor of closed domestic circuits. Like Hank Morgan in *A Connecticut Yankee in King Arthur’s Court*, London’s protagonists value control over distribution.

Power Generation in Jack London's Sonoma Valley Fictions

Despite their racist overtones, I focus on *Burning Daylight* (1910) and *the Valley of the Moon* (1913) primarily because these novels depict the electrification of the American West from the perspectives of the system builders and the working class, respectively. The eponymously nick-named protagonist of the former novel builds power plants in the wild Yukon and across the Sierra Nevada region; and he also embodies electricity in his warmth and vitality. In the latter novel, the lower-class Anglo-Saxon protagonists abandon the city grid to work on their own electrically-irrigated farm plots. Although these novels were published three years apart—a significant timespan for an author as prolific as London—their similar trajectories make for an interesting comparison. Like “The Harshaw Bride,” both novels explore how power networks might be integrated harmoniously into western domestic life; but they also illustrate how these networks can exacerbate class tensions in the context of the early twentieth-century city.

Burning Daylight was originally serialized in the *New York Herald* from June – August 1910 and republished as a novel by the Macmillan Company later the same year. The novel traces frontiersman Elam Harnish's migration from the wilderness of Alaska to the industrialized cities of the continental United States. London introduces Harnish—who is known on the frontier as “Burning Daylight”—in bio-electrical terms: Daylight's “nerves carried messages more quickly than” did other men's, because he has “a supreme organic excellence residing in the stuff of the muscles themselves [...] so quickly did he become aware of stress applied to him, that he saved himself by resistance or by delivering a lightning counter-stress” (27). Endowed with superior nerves and lightning reflexes, Daylight has “remarkable vitality” and astounding efficiency. When he eats, “There was no waste,” everything is “transformed into energy” (39).

These metaphors characterize Daylight as a human telegraph—he delivers messages across the Alaskan winter wilderness with lightning speed and efficiency.¹⁷

Daylight's bodily electricity justifies racial hierarchies and colonial histories that shape the novel's limited depiction of frontier social relations. He is physically superior to his indigenous Alaskan travel companions, who are invariably amazed by his energy and speed. After traveling with Daylight for two days, a "worshipful" Native American character, Kama, thinks, "No wonder the race of white men conquered [...] when it bred men like this man" (44). In this way, Daylight embodies an ideal "civilized primitivism" that permeates London's Northland stories: he can survive the wild in the "Indian fashion," but he is also associated with elements of civilization through his whiteness and the technological analogies that define his physiology. Notably, London also sets Daylight's superior vitality against the abstract "man of soft civilization," who would have "grown lean and woe-begone" on the food that Daylight processes into abundant energy (39). This comparison foreshadows the naturalistic trajectory of the novel—after moving from Alaska to California, city life alters Harnish's vitality, transforming him (albeit temporarily) into such a "man of soft civilization."

While residing in Alaska, the protagonist can "send a flood of warmth" through any room he enters, animating the dreary winter darkness so that "nothing languished when Burning Daylight was around" (3). Daylight represents a power source that illuminates and warms every room he enters, but like a power generator he can also be dangerous. When a townswoman, nicknamed "The Virgin," commits suicide because he does not love her, the town describes her death as "a case of too much Daylight," perhaps deepening his characterization as electrical with the implication that his physical attraction and his vitality could be fatal (114).¹⁸ Recognizing truth in the townspeople's gossip, "For the first time in his life Daylight [loses] his nerve" (116).

He decides to leave Alaska shortly after this episode, but only after he introduces the first actual electric network—an efficient mining system—into the narrative and into the Alaskan wilderness.

Hyperbolically connected to his environment, Daylight foresees that the frontier town of Ophir will house the next gold rush, and prepares to enter the “big game” of gold-mining. After prospectors overtake the area, he “looked at the naked hills and realized the enormous wastage of wood that had taken place,” lamenting that “It was a gigantic inadequacy” (117-8). In response to this environmental devastation, he constructs an electric mining system that preserves trees and minimizes waste. Like the power-plant in “The Harshaw Bride,” Daylight’s electrical system represents a productive marriage of local and external expertise: “The plan was his [Daylight’s] own, but he sent down to the states for competent engineers to carry it out” (119). Moreover, contrary to national systems that graft existent technologies onto western landscapes, Daylight’s invention is built to work efficiently in a specific regional context. By modifying Californian mining technologies to best suit the conditions of Ophir, the protagonist invents an electrical mining network that augments his keen intuition for the land and earns him thirteen-million dollars in profit. This uniquely-adapted apparatus allows the frontiersman to beat out his competition, including the enormously-wealthy Guggenhammer family and vaguely-defined “big English concerns” (118).

Despite the financial success of Daylight’s invention, the narrator seems ambivalent about the protagonist’s technological turn. His sparse description of the power plant simply notes that “without thanks to anyone [Daylight] finished his conduits, built his dredges, imported his machinery, and made the gold of Ophir immediately accessible” (120). Claiming that Daylight’s electrical network provides unmediated access to the environment, the narrator minimizes the

presence of the plant in the narrative itself, never illuminating the social and environmental impact of this system. Indeed, London only raises questions about the power plant's signification when the narrative shifts to describe Daylight's imminent departure: "he, who five years before had crossed over the divide from Indian River and threaded the silent wilderness, his dogs packing Indian fashion, himself living Indian fashion on straight moose meat, now heard the hoarse whistles calling his hundreds of laborers to work, and watched them toil under the white glare of the arc-lamps" (120). Earlier in the novel, London emphasizes the strenuousness of Daylight's wilderness life; but in this passage the repetition of "Indian" suggests a simple continuity of existence, contrasting the cacophonous imagery that concludes this periodic sentence. In Daylight's electrical system the sounds are "hoarse," the lights "glare," and the workers "toil." Though brief, this passage foreshadows Daylight's shift from genial community member to ruthless speculator. From enjoying his horizontal, communal relationships with fellow frontierspeople, Daylight creates a hierarchical system in which "hundreds of laborers" become "his." This rhetorical move implicitly aligns *Burning Daylight* with other naturalistic novels, which try to show that "the classical American narrative of free individuals in free space was a faulty paradigm [because] the energy of empire had made precisely this paradigm impossible" (Lawlor 45). Harnish becomes a local hero and a figure in the national periodical press because he can conquer the wilderness with his invention. In conquering, however, he compromises the very wilderness that is central to his heroic, masculine identity.

Regardless of the long-term effects of Harnish's electrical mining system, the locals consider the endeavor a triumph, and even a legend: "His departure was a thing that passed into the history of the Yukon along with his other deeds. All the Yukon was his guest [...] On that one last night no man's [gold] dust save his own was good. [...] And through it all, on

moccasined feet, moved Daylight, hell-roaring Burning Daylight, over-spilling with good nature and *camaraderie*” (120 – 1). Consistent with London’s representation of him as a walking telegraph, Daylight distributes the effects of this success across his community, spreading warmth and wealth among the frontierspeople before leaving Alaska in the hopes that he might join the “big game” of high-stakes stock speculation (107).

However, soon after his raucous farewell celebration, Daylight loses his characteristic warmth. His mining victory has angered the players of the so-called “game” he aims to play, and as a result they vindictively trick him out of his millions. The spiteful capitalists ephemeraly damage Daylight’s bank account—he retrieves his money from them at gunpoint before the banks close—but their ruthlessness has a long-lasting affect on the protagonist’s vitality: “The grim Yukon life had failed to make Daylight hard. It required civilization to produce this result. [...] The change marked his face itself. [...] Less often appeared the playful curl of his lips, the smile in the wrinkling corners of his eyes. The eyes themselves, black and flashing, like an Indian’s, betrayed glints of cruelty and brutal consciousness of power. His tremendous vitality remained, and radiated from all his being, but it was vitality under the new aspect of the man-trampling man-conqueror” (162-3).

Made increasingly nervous and cruel by the stress of his daily life, Daylight begins drinking and develops a paunch. By transforming the genial pioneer into a ruthless capitalist, London emphasizes how the socio-economic forces of the city incentivize antisocial, atavistic behavior. In so doing, he also embodies two contrasting conceptions of electrical power: first representing a distributive power system that shares warmth and light with his community, Daylight comes to embody an isolated, centralized, dangerous force. London draws out this distinction near the climax of the novel, when a new love interest inspires Harnish to reflect upon

his high-tech mining endeavor in Ophir. Still predominantly misanthropic, self-interested, and economically successful, Daylight becomes romantically interested in his stenographer, Dede Mason. As they get to know one another, Dede informs Daylight that by making his millions he has lost experience of “creative joy,” the ecstasy of producing something material (254).

Daylight agrees, and claims that his electrical invention was his most creative accomplishment:

Why, dog-gone it, Miss Mason, you’re right – in a way. I’ve built hundreds of houses up there, and I remember I was proud and glad to see them go up. And there was Ophir—the most God-forsaken moose-pasture of a creek you ever laid eyes on. I made that into the big Ophir. Why, I ran the water in there from the Rinkabilly, eighty miles away. They said I couldn’t, but I did it, and I did it by myself. The dam and the flume cost me four million. But you should have seen that Ophir—power plants, electric lights, and hundreds of men on the pay-roll, working night and day. I guess I do get an inkling of what you mean by making a thing. I made Ophir and [...] I sure am proud of her now, just as the last time I laid eyes on her. (255)

To the nostalgic Daylight, the power plant and electric lights epitomized his “creative joy.” These technologies augmented his physical strength and abilities, allowing him to imagine that he single-handedly created a town from a “moose-pasture.” By speaking in the first person (“*I* ran the water there [...] and *I* did it by myself”), Daylight describes himself in terms of a western folk hero who can reshape the landscape, suggesting that he has internalized the journalistic interpretation of his life as a rags-to-riches story of triumphant individualism. Harnish’s recollection omits the engineers who built the machinery he imported, as well as the workers who “toiled” in it to extract his wealth from the earth.

After this conversation with Dede, Daylight chooses to rediscover “creative joy” by electrifying Oakland. He explains: “folks will want to live over on this side [Oakland]. Very good. They’ll need land on which to build. So, first I buy up the land. But the land’s cheap now. Why? Because it’s in the country, no electric roads, no quick communication, nobody guessing that the electric roads are coming” (260). Applying his model for trading stocks to developing cities, Daylight purchases land at a low price and then inflates the value by installing electrical systems before reselling. In the stock market, he gained wealth by creating immaterial value, but in his electrical endeavors he leaves the eminently material imprint of entire communication and transportation systems.

To electrify the city, Daylight creates a grid out of spaces that were previously ordered according to the demands of an agricultural economy: “At the same time that his electric roads were building out through the hills, the hay-fields were being surveyed and broken up into city squares [...] Cement sidewalks were also laid, so that all the purchaser had to do was to select his lot and architect and start building. The quick service of Daylight’s new electric roads into Oakland made this big district immediately accessible” (265). His electric roads create a technological frontier that literally layers a new zone for exploration, inhabitation, and development atop the one-time frontier of the West. This description of Daylight’s electrical enterprise parallels the turn-of-the-century depictions of western engineers, who wrestled against the unruly western environment and resisted eastern models of authority. However, unlike the writers of the *Electrical Age* and the *Electrical World*, London suggests that the pioneer’s regional identity might not be compatible with modern industry. In contrast to the closed, regional system he built in Alaska, Daylight now constructs his electrical systems with no concern for (or knowledge of) the social and environmental systems he manipulates. In this

sense, he seems more like an anonymous capitalist than a lifelong westerner: “Not content with manufacturing the electricity for his street railways in the old-fashioned way, in power-houses, Daylight organized the Sierra and Salvador Power Company. This immediately assumed large proportions. Crossing the San Joaquin Valley on the way from the mountains, and plunging through the Contra Costa hills, there were many towns, and even a robust city, that could be supplied with power, also with light; and it became a street-and-house lighting project as well. As soon as the purchase of power sites in the Sierras was rushed through, the survey parties were out and building operations begun” (298). Detached from the local communities and environments he reconstructs, Harnish visualizes this endeavor from a bird’s eye perspective, without registering whether his “street-and-house lighting project” will help or harm people in the San Joaquin Valley. While he believes that this project represents creative rather than destructive joy, the conspicuous omission of the human element—of the people who inhabit and build the systems, or of the people who are left out of them—hints at the distance between the producers and consumers of electrical power in the Gilded Age model of corporate modernization.

No longer concerned with preserving trees or limiting waste, Daylight is now motivated by money alone; and the narrator describes his aspirations as dangerously, addictively profitable: “The profit on this land was enormous. [...] But this money that flowed in upon him was immediately poured back into his other investments” (266). This accretion and reinvestment of wealth becomes a compulsion, as Jennifer Fleissner would describe it, a repeated cycle of capitalist frenzy.¹⁹ Recognizing his addiction to money, Dede repeatedly asserts that the one-time pioneer’s millions make him unmarriageable. She tells Harnish that as long as he remains a captain of industry, “a wife would be only a brief diversion,” and forces him to choose between

the creative joy of building electrical systems, and the procreative joy of genteel domesticity (294). Faced with this ultimatum, the protagonist relinquishes his millions and chooses to marry. Before the couple retires to “the valley of the moon,” Dede asks Daylight to confront how his retirement might affect the people who inhabit the networks he built: “I know something of the fight you have been making [...] If you stop now, all the work you have done, everything, will be destroyed. You have no right to do it” (325). Daylight dismisses her local perspective, assuring her in the abstract terms of industry: “Nothing will be destroyed, Dede, nothing. You don’t understand this business game. It’s done on paper [...] No matter what happens to me or the paper [...] there’ll be cars to carry [the new residents of Oakland] around, and houses to hold them, and good water for them to drink and electricity to give them light, and all the rest” (326). In this passage, Harnish naturalizes the power networks he developed, suggesting that modernization has a momentum of its own that endures without his intervention. In so doing, he reframes the Sierra and Salvador Power Company as an impersonal and rhizomatic system, although he claimed to control and create that system single-handedly only chapters earlier.

After dismissing Daylight’s larger networks in this way, the novel returns to the local perspective with which it started. Now voluntarily poor, Harnish cannot play the master of large, black-boxed networks. Instead, he has to build even the most basic tools by hand. To attain his desired level of efficiency in domestic tasks, he manually constructs a closed power system for his ranch. He seeks no external, expert help in this endeavor. By controlling how his family uses and constructs technologies, he can be more sensitive of their social and environmental affects. The novel concludes after he constructs a Pelton wheel to generate power for his household needs: “Daylight devoted himself to the lightening of Dede’s labors, and [together with her brother he] installed a Pelton wheel. Besides sawing wood and turning his lathe and grindstone,

Daylight connected the power with the churn; but his great triumph was when he put his arm around Dede's waist and led her out to inspect a washing machine, run by the Pelton wheel, which really worked and really washed clothes" (351). Although it is unclear if Daylight's Pelton wheel is hydroelectric or mechanical, this passage suggests that powered technologies can strengthen family and community bonds in a closed, controllable setting, even if similar black-boxed technologies alienate producers and consumers in urban settings. As in "The Harshaw Bride," *Burning Daylight* closes with an image of science merging with nature in an enclosed, domestic setting. The idyllic setting is the only detail that sets this conclusion apart from Daylight's earlier network-building projects.

The improbability of this domestic retreat into a technologically-modified wilderness twenty years after the official closing of the American frontier raises questions about the novel's resolution. As Christopher Hugh Gair argues, "By moving to a [...] Jeffersonian rural idyll, the protagonists [...] gain a degree of moral agency impossible in the determined worlds of the city—where much of the novel is set—and of naturalist fiction. This transformation is problematic [since] the Harnishes' escape from the market requires money earned in that market [...] and [since] the move depends upon a retreat into history and into the economic structure of the nation at least fifty years earlier" (141). Gair echoes the reasonable critiques of London's contemporary reviewers, but despite these apparent inconsistencies, London chose to rewrite this problematic conclusion in *The Valley of the Moon*.²⁰ Consequently, to better comprehend the signification of Sonoma Valley in either work, I find it useful to consider these novels alongside one another—especially since the latter novel is told from the perspective of wage laborers, rather than system builders.

The Valley of the Moon opens in a laundry in Oakland, where Saxon irons shirts under electric lights, though she cannot afford the shirts or the electric power that characterize her work environment (7).²¹ While the public spaces where the protagonists work or dance are on the city's grid, the couple is not. This disparity underlines the central problem in the novel: Billy and Saxon inhabit the modern networks that transformed the West from "the frontier" into an assemblage of modern states and cities. Thus, although Saxon and her husband Billy descended from the Anglo-Saxon pioneers who first settled in California (after whom Saxon is transparently named), they cannot access the wealth of the West in the socio-economic climate of early twentieth-century America. In London's representation of Oakland, electrical power plants come to symbolize part of this problem.²²

Like *Burning Daylight*, *the Valley of the Moon* shifts between naturalistic and romantic generic conventions. Billy and Saxon's apparently happy marriage degenerates as the struggle between striking union employees, scabs, and business owners sparks city-wide violence that culminates on the couple's front lawn, causing Saxon to miscarry. Suffocating in a claustrophobic economy, Billy becomes a brute, drinking and fighting until he is arrested. With her husband detained, and with no respectable means of generating her own income, Saxon chooses to remove herself from Oakland's socio-economic system entirely. She forages for mussels and driftwood in the bay; and while carrying her found food and firewood home "She sought the darker side of the street at the corner and hurried across the zone of electric light to avoid detection by the neighbors" (271). At the border of this "zone of electric light," London contrasts Saxon's self-reliance with the image of her fallen longtime friend, Mary. Like Saxon, Mary had moved from the laundry to domestic life, only to have her marriage torn apart by violent labor disputes. However, Mary chooses to live under the lights that Saxon resolutely

avoids, selling her body to remain in the capitalist economy. In this scene, the electric light symbolizes the displacement of community—it transforms the street into a stage where neighbors can passively observe each other’s suffering.

During Billy’s absence, Saxon realizes how the city brings violence into her life; and after his release she convinces him to “chuck Oakland” (277). Like their pioneering parents, the couple sets out from their home by foot to settle free government land. Their trek across the state reinvigorates their bodies and their relationship, while also revealing how different California had become since their parents settled the land a generation earlier. As writer and historian Gerald Haslam argues, California was engineered from a desolate into a fertile landscape between the 1860s and 1890s, with correlated social and agricultural results: “Damming those rivers and channeling their waters for irrigation helped convert the valley into the world’s richest agricultural region. In turn, that richness has attracted an ethnically and socially diverse series of migrants to work its fields: Chinese, Japanese, Italian, Portuguese, Sikh, German, Filipino, Mexican, black, and various poor whites, among others” (136). These are the “new” demographics and agricultural practices that the protagonists are respectively dismayed and amazed to discover on their journey.

In the country, Billy and Saxon meet a series of farmers who help acquaint them with the current conditions of California agriculture. A particularly helpful farmer-mentor is Benson, a recent college graduate with a degree in agricultural engineering. He explains an alternative economic model in which soil is more valuable than gold, suggesting that Billy and Saxon’s alienation from the land resulted from their ancestor’s superficial definitions of wealth:

“Why, in France, I’ve seen hill peasants mining their stream-beds for soil as our fathers mined the streams of California for gold. Only our gold’s gone, and the peasants’ soil remains [...] growing something all the time.” [Benson said.]

“My God!” Billy muttered in awe-stricken tones. “Our folks never done that. No wonder they lost out [...] But] It was our folks that made this country,” Billy reflected. “Fought for it, opened it up, did everything—”

“But develop it,” Benson caught him up. “We did our best to destroy it. As we destroyed the soil of New England.” (366-7)

Explaining that the “gold’s gone, and the [...] soil remains,” Benson engages recent debates about the stability of the gold standard. This exchange further suggests that the history of violent colonization (“[our ancestors] Fought for it”) is the only connection that binds “Americans” like Saxon and Billy to the physical space of the United States. Benson advocates a return to a Lockean model, in which value is produced by mixing labor with the land. He goes on to succinctly argue a fundamental position of literary naturalists like Frank Norris: the current U.S. economy is predicated on an unsustainable cycle of chasing dubiously-meaningful wealth. “Those of us who haven’t anything rot in the cities. Those of us who have land, sell it and go to the cities. Some become larger capitalists; some go into the professions; the rest spend the money and start rotting when it’s gone, and if it lasts their life-time their children do the rotting for them” (368). The agricultural engineer suggests that modern farming techniques—specifically electrical irrigation systems—could help Anglo-Saxons like Billy and Saxon reclaim the state of California.

To distinguish between modern American farming techniques espoused by Benson and the techniques employed by ethnic farming communities, London constructs a symbolic system

that codes immigrants' labor as difficult and ugly, and electrical irrigation as nearly magical. For example, Billy describes the "Porchugeeze" as "livin' like a pig" (303), in contrast to the narrator's Elysian description of the electrified farm plot:

Stepping into a small shed, [a modern farmer] turned an electric switch, and a motor the size of a fruit box hummed into action. A five-inch stream of sparkling water splashed into the shallow main ditch of his irrigation system and flowed away across the orchard through many laterals.

"Isn't it beautiful, eh?—beautiful! beautiful!" [the farmer] chanted in an ecstasy. "[...] It makes a gold mine laughable." (459)

Although London associated electric power with the exploitative capitalist economy earlier in the novel, the orchard's small-scale grid represents an ideally beautiful, leisurely lifestyle. The electrical irrigation system allows Billy and Saxon to transform from wage-laborers into the producers of their own closed technological and social assemblages.

The protagonists equate their adoption of such modern farming techniques with intellectual work, emphasizing that they are working the land with their heads rather than their muscles. As Billy explains to his wife: "It's your head that done it. What was my muscles good for with no head to run 'em?" (515). Such passages align the electrical irrigation system with neural networks and Enlightenment discourses of rationality. This trope resonates with a broader cultural fantasy that the turn of the twentieth century would signal a new industrial revolution, in which power generation and distribution systems could improve daily life for the American working class.²³ In the final chapters of *The Valley of the Moon*, London uses the symbol of the electrified farm plot to advocate for a modern Jeffersonian yeoman republic, in which Americans could spread out from city centers and earn more vitalizing livelihoods on immensely-productive

small plots of land. By idealizing this alternative domestic frontier, he illustrates how electricity, strategically deployed, could create a new American modernity that is built on local communities and ecologies, rather than corporate capitalism.

As in *Burning Daylight*, the protagonists' ability to transcend the city grid is logically inconsistent, predicated on markets that the characters claim to reject, and on outdated ideas about free government land.²⁴ Yet inasmuch as this techno-utopian dream is apparently rooted in fantasy, it is worth noting that this recurrent image of networked water power resonates with distinctly western developments in electrical engineering. Since western power networks were almost exclusively built in tandem with irrigation systems between 1895 and 1915, western developers measured the relationships among efficiency, technology, and local ecologies differently than their eastern counterparts did.²⁵ Consequently, while they deploy frontier nostalgia, London's novels also engage up-to-date conversations about how the West has changed—and might continue to change—the social meanings of electricity.

Opening Up the Black Box: Some Reflections on Regional Electrification

On the West Coast, the transition from small, self-contained communities to large cities electrified by complex, many-centered systems occurred rapidly—and often under the influence of large eastern concerns, such as General Electric (*Networks of Power* 267 – 8). In this context, London's depiction of electrified domestic retreats parallels Foote's portrayal of community-based technological development; each of these works suggest that electrical networks can be removed from the constraints of eastern industrial practices. Ultimately, *Burning Daylight* and *The Valley of the Moon* promote the fantasy that the complex city grid might be broken into closed, controllable circuits that form the foundation for healthier families and communities.

Published at a moment when American culture was grappling with widespread neurasthenia and poverty, these texts suggest that interactive and thoughtful technological labor can revitalize desiccated bodies, while retaining modern conveniences that set “Anglo-Saxons” apart from other communities.²⁶

It is worth noting this investment in “opening the black box” expanded beyond these domestic retreat narratives. For example, London’s short story “The Dream of Debs” imagines how the working-class could take better advantage of their technological expertise. First published in the *International Social Review* in 1909, and later in London’s collection of short fiction, *The Strength of the Strong* in 1914, this short story emphasizes the vulnerability of technological users who passively employ systems they do not understand. Like the Native Americans in Ware’s *Indian War of 1864*, London imagines labor union members cutting telegraph wires in an offensive attack against privileged capitalists (154 – 5). Playing on the higher-class’s overreliance on technological conveniences, the union workers strategically manage the networks only they can operate, proclaiming, “When we think our employers are ready to submit we shall open up the telegraphs and place the employers’ associations of the United States in communication. But only messages relating to peace terms shall be permitted over the wires” (166). “The Dream of Debs” concludes with the military acquiescing to the demands of labor, and the reinstatement of telegraph, train, and steamer services. The short story—like *Burning Daylight* and *the Valley of the Moon*—calls for laborers with technical savvy to conscientiously refigure the social meanings and uses of electrical networks, by transcending their positions on exploitative city grids. In each case, London suggests that power plants do not serve one class of people more than another. Consequently, these representations encourage

Americans to play a more active role in the use and development of power systems, for the betterment of their daily lives and the equalization of socio-economic power.

The western electrification narratives that I explore in this chapter illustrate related fantasies about the need for robust regional technological identities, and for dissecting black-boxed electrical systems. In so doing, they each project hope for America's electrified future, but the fact that they only reach resolutions to complex, realistic problems by resorting to romance warrants further scrutiny. "The Harshaw Bride" does not confront the complications that would arise if Mr. Fleet and Miss Malcom were not conveniently softened by love. Similarly, London's protagonists never confront their reliance on the exploitative systems they claim to escape. Nonetheless, these texts offer more than a form of literary wish fulfillment. They emphasize the importance of understanding the feedback between social and technological systems.

Written during the first waves of western electrification, Foote and London's depictions of local expertise and community involvement resist the idea that electrical networks would homogenize the United States from East to West. Instead, these narratives illustrate that such systems can signify cooperation in western communities, even as they signify competition in the East. These stories seem to foreshadow the electrified utopias I explore in my following chapter, and might help to explain the persistence of the myth that electricity could catalyze social and moral progress despite the corporatization and corruption of many Gilded-Age power companies. Further, they illustrate how competing narratives about the construction of electrical networks played into larger conversations about how to define modern America coherently, without sacrificing the mythical history of westward expansion or the notion of the family-based community.

End Notes

¹ Advertisements, such as the AT&T advertisement shown in Figures 9 and 10, suggest that communications systems would connect the nation in this way. It would be another two decades before the Rural Electric Association would begin to imagine power grids crossing the country.

² For an example of how university administrators promoted the image of the technological frontier, see Cahan and Rudd, 11-12.

³ *Overland Monthly*, the journal of western literature and culture, also included articles about that described electrical developments in terms of western iconography. See Edward Berwick, “Farming in the Year 2000,” *Overland monthly and Out West Magazine* 15.90 (Jun 1890): 569 – 573; Alvan D. Brock, “The Supplanting of Steam,” *Overland Monthly and Out West Magazine* 14.82 (Oct 1889): 396 – 409; Alvan D. Brock, “The Whispering Telephone,” *Overland Monthly and Out West Magazine* 16.92 (Aug 1890): 122 – 126; W. A. Tenney, “Evolution of the Northwest,” *Overland Monthly and Out West Magazine* 35.208 (Apr 1900): 321 – 332; Vere Withington, “An Electrical Study,” *Overland Monthly and Out West Magazine* 20.118 (Oct 1892): 417 – 429.

⁴ For more on fantasies about the unindustrial West, see Johnson, 208.

⁵ In addition to the journalism and middle-brow fiction I explore here, this trend can also be seen in science fiction, from Edward S. Ellis’s *The Steam-Man on the Prairies* (1868), to the space westerns of today. For more on science fiction and the image of the frontier, see Abbott, 36-58.

⁶ Electrical imagery appears in some form or another across a wide range of literature about the American West—it even animates texts that promote a mythological image of a pre-technological America, notably including Frederick Jackson Turner’s speech, “The Significance

of the Frontier in American History” (1893). Turner favors an evolutionary and geological vocabulary to depict the frontier as a force that teleologically creates Americans from Europeans; yet he provocatively deploys various electromagnetic and electrovitalist metaphors in his speech, as well. He describes westward expansion in terms of a magnetic pull: “Excepting the fisherman, each type of industry [was] impelled [West] by an irresistible attraction” (12). Moreover, he portrays the creation of the nation in electrovitalist terms. He claims that “Behind institutions, behind constitutional forms and modifications, lie the vital forces that call these organs into life” (2, my emphasis). Refining and extending this analogy, Turner goes on to describe the nation in terms of a neural network: “like the steady growth of a complex nervous system for the originally simple, inert continent” (15).

⁷ In addition to facilitating westward colonization, technology influenced popular-culture understandings of the frontier in a variety of ways. Communication, transportation, and agricultural technologies aided settlers in their colonization of the continent. By the turn of the twentieth century frontier nostalgia was often propagated through a notion of “civilized primitivism” that integrated some desirable elements of industrialization into the modern frontier fantasy. Meanwhile, new media technologies disseminated and solidified the myth of the frontier, first in dime novels and Wild West shows, and later in radio, cinema, and television.

⁸ Glazener defines “Anglo-Saxons” as “a racial construct that excluded a number of ‘white’ immigrant groups whose members were mostly working class as well as African Americans, Asian Americans, Mexican Americans, and other groups defined as ‘non-white’” (6).

⁹ “The Harshaw Bride” was reprinted in Foote’s 1903 collection of short fiction, *A Touch of Sun*.

Page numbers refer to this edition.

¹⁰ *John Bodewin's Testimony* also features electrical imagery. It describes the “Wind of the great Far West” as “soft, electric, and strong, blowing up through gates of the great mountain ranges” (344).

¹¹ Histories of western electrification note that eastern companies provided equipment to western initiatives, but they tend to obscure the role that western community members might have played in requesting, procuring, resisting, or modifying these technologies. Works like “The Harshaw Bride” productively complicate the erasure of western agents from the history of western electrification, by lending insight into the more complex relationships between eastern companies and westerners. Provocatively, Foote’s characters seek eastern investors for a local western project, whereas David Nye notes that most western power generators were either “imported from the East and from Europe” or were influenced strongly by eastern companies and investors, as when “New York financiers [...] underwrote the construction of a 140-mile transmission line [...] from the mountains to Oakland” (*Narratives and Spaces* 29-30).

¹² On Foote’s conservative depictions of womanhood, see Miller, 176-178.

¹³ Foote’s biographer argues that the author saw “The Harshaw Bride” as her “lightest” work. See Miller, 177.

¹⁴ This dime novel clearly describes Mexicans as racially inferior: “sharp and aggressive Yankee lawyers [...] easily muddled the brains of the slow, easy-going Mexicans who would always prefer waiting until to-morrow to do any business” (Toombs 2). Nonetheless, the white hero-inventor Electric Bob claims that it is morally just to help the Mexican character, Señor Remondino keep claim jumpers off his land.

¹⁵ Provocatively, AT&T published an advertisement similar to Figure 8 in 1915 that replaces the male figures with telephones, obscuring the differences between consumers that this earlier advertisement seemed to promote. This advertisement likens the telephone to universal language,” hinting that only people who “speak American” (as Jack London describes it) should be connected on this system. “A Telephone Unites the Nation,” “The Merger of East and West,” American Telephone and Telegraph Company, 1915. N.W. Ayer Collection, National Museum of American History Archives Center. Washington, D.C.

The Telephone Unites the Nation



At this time, our country looms large on the world horizon as an example of the popular faith in the underlying principles of the republic.

We are truly one people in all that the forefathers, in their most exalted moments, meant by that phrase.

In making us a homogeneous people, the railroad, the telegraph and the telephone have been important factors. They have facilitated communication and intervisiting, bringing us closer together, giving us a better understanding and promoting more intimate relations.

The telephone has played its part as the situation has required. That it should have been planned for its present usefulness is as wonderful as that the vision of the forefathers should

have beheld the nation as it is today.

At first, the telephone was the voice of the community. As the population increased and its interests grew more varied, the larger task of the telephone was to connect the communities and keep all the people in touch, regardless of local conditions or distance.

The need that the service should be universal was just as great as that there should be a common language. This need defined the duty of the Bell System.

Inspired by this need and repeatedly aided by new inventions and improvements, the Bell System has become the welder of the nation.

It has made the continent a community.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy One System Universal Service

¹⁶ Jonathan Auerbach and Christopher Hugh Gair identify this concern about the stability of post-Reconstruction and post-frontier American national identity at the heart of London’s fiction. See Auerbach, 66-9; Gair, 145-6.

¹⁷ For a prolonged discussion and definition of electro-vitalism, see Chapter Two. Although it may seem odd that London uses electrical imagery to describe mail delivery, as Greg Downey argues, the postal service was considered part of the telegraph and telephone information “internetwork” during the early twentieth century. See Downey, 213-214. For more on mail imagery in London’s work, see Auerbach, 12.

¹⁸ Although London was not on the list of people to whom Henry Adams circulated the limited-edition 1907 *The Education of Henry Adams*, Daylight's electrical characterization arguably might be heightened by his association with a character named "The Virgin." Just as the power of the dynamo overwhelms the Virgin in Adams's *Education*, "The Virgin" of *Burning Daylight* commits suicide because Daylight does not love her (114). On the distribution of the 1907 *The Education of Henry Adams*, see Edward Chalfant, *Improvement of the World: A Biography of Henry Adams 1891-1918*.

¹⁹ In her book, *Women, Compulsion, Modernity: The Moment of American Naturalism*, Jennifer Fleissner argues that compulsive repetition is the central trope of American literary naturalism.

²⁰ See William Morton Payne's review of *Burning Daylight* in *The Dial* (16 Nov 1910).

²¹ In his autobiography, published the same year as *The Valley of the Moon*, London describes his own experience working under the electric lights of a laundry in the same terms (*John Barleycorn*, 225).

²² *Valley of the Moon* solidifies the association between electricity and corporate culture, describing a power company, "Niles Electric" as a union-busting leviathan, like the other large companies that exploit the workers of Billy and Saxon's class (175).

²³ For more on this hoped-for industrial revolution, see Hughes, "The Industrial Revolution that Never Came," 58 – 64.

²⁴ This logical inconsistency extends to the racial/ethnic biases of the novel. In a convoluted displacement of American colonial history, London describes the descendants of early white settlers as "the last of the Mohegans," whose land is unfairly infringed upon by more-recent immigrants and capitalists (155). This analogy to the "dying race" of Native Americans

problematically suggests that Billy and Saxon have a right to the land because their ancestors violently colonized it first. For more on the racial dynamics of the novel, see Gair, 143-147.

²⁵ For a description about the relationship between irrigation and electrification in the West, see “The Transmission Systems of the Great West,” 1143.

²⁶ Electrical devices became decreasingly interactive (or increasingly black-boxed) between the 1880s and 1910s. For example, devices less-frequently required users to mix their own battery acid; not only were pre-assembled batteries cheaper and easier to store than they had been two decades earlier, but dozens of apparatuses were now powered through wall sockets.

Chapter Four | The Revitalization Narrative and the Organic Electrical Network

Pauline Hopkins's short story "The Mystery Within Us" (1900) narrates the revitalization and the re-socialization of a suicidal protagonist, Tom Underwood. But Tom is not revitalized by contemporary electro-medical stimulus. Instead, his suicide attempt is thwarted by a spiritual possession, which he experiences as "a vivid electrical impression" (24). Hopkins's depictions of animal magnetism harken back to antebellum descriptions of mesmerism. They also exemplify a subgenre I call "revitalization narrative"—the fictional or nonfictional narrative about reanimated bodies. Mary Shelley's *Frankenstein* (1818) and narratives about Luigi Galvani's experiments with the twitching legs of dead frogs (1780s) were early instantiations of this subgenre, which continued to develop in the American literary imagination well into the twentieth century.¹ Surveying this body of literature is beyond the scope of this study. Instead, this chapter examines how and when authors use language associated with electrification to grapple with the ambiguous and changing conceptions of health, life, and death. I focus specifically on work of Hopkins and Charlotte Perkins Gilman, since both approached the subject of revitalization from multiple perspectives throughout their bodies of work. Unlike Twain and Atherton, Hopkins and Gilman were not concerned with the precise functioning of electric technology. At a rhetorical level these authors were interested in applying the emerging vocabulary of electrical networks to develop new descriptions of the human condition; at a philosophical level, they were interested in exploring how electrical light, power, and communications systems might actually improve specific inequalities in modern American society.

Hopkins's revitalization narratives explore spiritual and psychic associations of electricity, diminishing its identification with specific technologies and ideologies of Western progress. Her short story "The Mystery Within Us" (1900) and her first serialized novel *Contending Forces: A Romance Illustrative of Negro Life North and South* (1900) depict electricity as a supernatural revitalizing power that can heal neurasthenic bodies. Yet while her early works describe revitalization as electric, Hopkins's last and most byzantine novel, *Of One Blood, or the Hidden Self* (1902-3), evokes electricity without ever using the word itself, describing the revitalization of Ethiopia and its children in terms of dazzling lights, Cartesian networks, and human magnets. The prominence of these images registers the extent to which electrical networks were associated with vitality and the promise of new modernities by the turn of the twentieth century. Nonetheless, Hopkins's selective use of terminology associated with electrical systems raises questions about whether a power source associated with American technological modernity could be transformative for African Americans.

In contrast, Gilman deploys electricity as the motive power and central metaphor for her utopian vision of America's future. In her fiction, like the novel *Moving the Mountain* (serialized in 1910, published as a novel in 1911), electricity springs forth from the rivers and wind, replenishing communities and individuals without disrupting the natural landscape. Yet she explicitly sets her electrified utopias against Whitman's pastoral. For Gilman, electricity does not represent the euphoric individual "body electric," but rather an "interminable array of batteries, full charged"—an awareness of social and technological interdependencies that she describes as an electric body politic: "the tingling 'I' that reaches wider and wider in every age, that is sweeping through the world to-day like an electric current, that lifts and lights and enlarges the human soul in kindling majesty" (*Human Work* 388-9). Electricity in Gilman's work is more

than a metaphor for human vitality—it is an embodiment of social consciousness.² By reading Hopkins alongside Gilman, this chapter explores how *fin de siècle* networks complicated the Romantic mythology that linked electric currents with human vitality and community health.

Pauline Hopkins and the Spiritualistic Network Society

Hopkins uses electricity as a metaphor to accentuate climactic moments throughout her body of work. In *Hagar's Daughter* (1901) she describes the revelation of racial identities as “an electric shock” (251); in *Winona* (1902) she implies that “the electric fluid” of lightning strikes might represent divine intervention (297). Hopkins also demonstrates familiarity with Romantic depictions of electricity as symbol of human sympathy. In her nonfiction article “Munroe Rogers” (1902), which she included in *The Colored American Magazine* directly before the first installment of *Of One Blood*, she excerpts the following passage from James Russell Lowell’s poem, “The Present Crisis” (1845):

For mankind are one in spirit, and an instinct bears along,
Round the earth’s electric circle the swift flash of right or wrong,
Whether conscious or unconscious, yet Humanity’s vast frame,
Through its ocean-sundered fibres feels the gush of joy and shame;—
In the gain or loss of one race all the rest have equal claim. (20-1, emphasis in Hopkins’s transcription)

Lowell’s metaphor of telegraphic connection (“Round the earth’s electric circle”) describes the transmission of moral insight (“the swift flash of right or wrong”). In Hopkins’s descriptions and adaptations, electricity represents a mysterious and divine power, a human bond that transcends racial identity, or emotion itself.

Hopkins's early depictions of revitalization expand these descriptions, characterizing electricity as a cosmological force. Her first serialized novel, *Contending Forces: A Romance Illustrative of Negro Life North and South* (1900), features a "magnifyin' doctor," Abraham Peters, who can revitalize the fatally ill (130-1). The narrator notes that, as a slave, Peters "lacked the opportunity to obtain information in his youth" (130 - 1). Nonetheless, by communicating with a divine spirit, the aspiring doctor learns to heal patients with what he believes to be electromagnetic forces. Dr. Peter's explains, "I kep' on prayin' fer mo' faith until I got the power in my hands, an' by layin' em on a sick pusson I could 'lectrocute 'em instantly, an' thar bad feelin's would disappear. People got the notion I could pray a pusson right out the grave" (135). Linking electromagnetism to folk wisdom—"Magnifyin' an' hoodooin' is 'bout the same thing down thar" (132)—he contends that prayer can alter the laws of physics, enabling him to channel electrical and magnetic forces at will.

The "magnifying" doctor's success challenges the legitimacy of the institutions that excluded him in his youth. Moreover, by describing his healing powers in terms of his ability to "'lectrocute [patients] instantly," Hopkins contrasts state and folk knowledges. In legal and techno-scientific communities, electrocution is an act of state violence; in *Contending Forces*, electrocution represents the ability bring bodies back to life. This refiguration of the word "'lectrocute" situates *Contending Forces* in dialogue with contemporary narratives that questioned whether electricity could kill, or if it merely induced a state of suspended animation. Indeed, we might read Hopkins in conversation with works such as Sir Arthur Conan Doyle's short story, "The Los Amigos Fiasco" (1894), in which a high-powered electric chair accidentally revitalizes a body it was meant to kill. By appropriating discourses of electricity in this way, Hopkins develops a new vocabulary for African-American identity and folk wisdom.

Published the same year as *Contending Forces*, “The Mystery Within Us” also describes the supernatural rise of a “magnetic physician.” The story begins in the middle of a conversation between the protagonist, Tom, and the narrator, Jack: “Speaking of spiritualistic phenomena, and the existence of guardian angels, and that there are means of actual communication between the denizens of earth and those bright spirits—why, my dear Jack, I *do* believe in these things” (21). After reflecting on Shakespeare’s claim—“There are more things in heaven and earth, Horatio / Than are dreamt of in your philosophy”—the narrator reveals that in the five years since their last visit, Underwood had risen from poverty into professional eminence. Framing Tom’s remarkable transformation in relation to “actual communication” with spirits, the narrator hints that Tom’s success has something to do with occult science (21). Emphasizing that this will not be a conventional success story of scientific genius rewarded, Jack compares his friend’s apartment to “a story from the ‘Arabian Nights’” (22).

Tom’s explanation builds on the discourse of neurasthenia, rather than the fantastic narratives to which Jack alludes. The newly-successful scientist reflects, “could the many strange things that happen in our individual lives be recorded we would be justified in calling ourselves a world mentally unbalanced” (22). He then describes his personal experience of nervous exhaustion, nonchalantly explaining his decision to commit suicide in economic terms: “One evening I sat in my cheerless room and weighed carefully each event in my life—struggles and disappointments, against the few successes which had come to me. The result was too much for me. I went to my mineral cabinet and deliberately selected a bottle of prussic acid with the intention of ending it all right there” (23). Before Tom can finish drinking the fatal dose, he explains, his “*entire body had lost the power of volition!*” (23). Tom soon realizes that the spirit of a deceased physician, Dr. Thorn, has taken control of his body. He describes this extra-

worldly encounter by analogy to electro-medical treatments, describing the experience as feeling “like waves of electrical shocks, most delicately given” (25). Underwood embellishes this analogy with an array of related descriptors. During the encounter, he explains, “My mind worked with lightning-like rapidity” (23). In his shock and confusion, the experience recalls written descriptions of “the action of one magnetic mind upon another” (24). Lightning, electricity, and animal magnetism comprise Tom’s vocabulary for the new and supernatural. His attempts to describe the encounter in any other terms fail: “At last the Presence spoke. I say *spoke*, but indeed, no sound broke the silence of the room. The Presence *seemed* to speak, although I was well aware that *it did not*” (24). As in conventional narratives about cures for neurasthenia, “The Mystery Within Us” describes revitalization as something that *feels like* electricity—but this “cure” supernaturally exceeds any medical battery or electric belt.

Although his race is never mentioned within the story, Tom’s “electrifying” spiritual possession challenges his sense of self, and, according to Thomas J. Otten, this shift places “The Mystery Within Us” in dialogue with an emergent trend in African-American literature: “Inasmuch as they attempt to undermine and obliquely to reorganize structures of identity, such tales are part of a larger effort in black letters at the turn of the century” (235). Provocatively, electricity becomes the metaphor and the medium through which Hopkins “reorganize[s] structures of identity” in this story. By likening “communication between the denizens of earth and [...] bright spirits” to mild electro-medical treatments, she associates electricity with the permeability of the human body and mind. In so doing, she creates an alternative fantasy of electrical connection—one that counters the image of the coherent individual who controls electricity (such as Twain’s Yankee or London’s Burning Daylight). In “The Mystery Within Us,” electricity represents the revitalizing *loss of* control—the realization that the individual self

belongs to something larger. Tom comes to see himself as an interdependent component of a spiritual circuit: Dr. Thorn can control Tom's body with signal he likens to electricity, but he requires a sympathetic receiver to transmit his medical messages to a broader audience. The spirit explains to Tom, "[After death,] In the midst of my grief for those I had left and my lost art, I received a promise from the Divinity that my discoveries should not be lost, and that one should be given me who should revive and restore the whole of my system. You are he" (26). Their fantastic conversation parallels descriptions of early experiments in wireless (radio) communications, as they were represented in stories like Rudyard Kipling's "Wireless" (1904).

Hopkins last novel, *Of One Blood: or, the Hidden Self* (1902 – 3), builds in new ways on her interest in spiritual networks. Like "The Mystery Within Us," *Of One Blood* is as much about reanimation as it is about the discovery of hidden mysteries.³ Yet *Of One Blood* resists the conventional narrative arc, instead it prompts readers to follow an intersecting set of themes and episodes across the pages of the *Colored American*. In this chapter, I address race and identity (the two most studied themes in the novel) within a broader exploration of how the novel challenges, affirms, and refigures an emergent mythology of the electrical network.⁴ In so doing, *Of One Blood*'s networks—its canals, fantastic lights, and genetic and mesmeric connections—represent a new paradigm for understanding the modern world in terms of complex interdependencies. Engaging with the theme of revitalization, the novel illustrates occult systems of communication akin to Tom and Dr. Thorn's "wireless" connection. However, the *Of One Blood* suggests that spiritualistic networks are irreparably compromised within the post-Reconstruction U.S.

A complex and difficult novel to summarize, *Of One Blood* traces the unusual revitalization of a melancholic protagonist, Reuel Briggs, who gains access to Ethiopian's

secreted network society. It also traces the tragic fall of African American characters who can never fully understand their place within a larger community of connected souls, because their genealogies have been lost or intentionally obscured. The novel introduces Briggs as a physician who obsessively experiments with the science of psychic phenomena. Drawing on the works of “M. Binet”—Hopkins’s pseudonym for William James in the novel—Briggs awakens an apparently-dead Fisk Jubilee Singer, Dianthe Lusk, from suspended animation. After he revitalizes the amnesiac singer, Reuel feigns ignorance of her identity and coerces her to assume the false identity of “Felice Adams” so that he can marry her and continue to pass as white. By miraculously reanimating “Felice,” Reuel enjoys fleeting professional success, until his friend-turned-enemy, Aubrey Livingston, reveals his African heritage to pre-empt his employment in the Boston medical community (468). Aubrey then coerces the protagonist to join an expedition to Ethiopia, planning to seduce Dianthe while Reuel is away.

Hopkins published the novel between the 1896 Battle of Adwa, in which Ethiopia gained independence from Italy, and the 1909-1910 archaeological excavation of the ancient Ethiopian city, Meroe (Nurhussein 218). Writing shortly after the site of Meroe had been initially identified for excavation, Hopkins appropriates the lost-city adventure of popular writers like H. Rider Haggard to anticipate what upcoming discoveries in Ethiopia might mean for twentieth-century African Americans. Elizabeth Ammons and Nadia Nurhussein have both suggested that, in so doing, *Of One Blood* embellishes contemporary representations of Ethiopia, already popular in the *Colored American* and in the fiction and nonfiction of Hopkins’s contemporaries, because the novel “breaks boundaries” and “enters the secret, long lost kingdom of black power in Africa—not in a mind trip but in a *real* trip” (Ammons 84). Decades before the discovery of the “Baghdad battery” suggested that the ancient world understood how to harness electricity,

Hopkins imagines Telessar—a modern Meroitic empire on the site of the ancient city—as a semi-permeable utopia which allows educated Ethiopians to leave and to return, but does not admit “outsiders.”⁵

For Reuel, the expedition across Africa reveals hidden truths about himself and the Ethiopian people. After arriving on the continent, he learns that he is the rightful king of the ancient-but-advanced lost city of Telessar. As he accepts the role of King and the royal name Ergamenes, Reuel promises to revitalize Ethiopia, but this utopian resolution is counterbalanced by tragedy. The novel closes after revealing that the three main characters were siblings. Aubrey had been switched at birth; Dianthe was born after their mother, Mira, was sold; and, consequently, Reuel has known nothing of their existences. Dianthe’s storyline is the most tragic. Upon discovering the horrible truth that she was mesmerically seduced by one brother while married to the other, she commits suicide, rejoining her royal African lineage in death. Reuel’s Ethiopian guide, Ai, mesmerically compels Aubrey to take his own life as punishment for seducing his sister. Reuel returns to his revitalized kingdom, but he anxiously awaits an impending fight with the white nations that have begun “penetrating the dark, mysterious forests of his native land” (621). The narrative arc from Reuel’s studio apartment in early-twentieth-century Boston to his ancestral throne in Telessar confounds a linear reading, and, for the purposes of this chapter, I cannot unravel all of the novel’s rich complexities. Rather, I focus on three scenes that offer an interesting perspective on the revitalization narrative and on early-twentieth-century electro-vitalist rhetoric: the introduction that situates Reuel in the tradition of Tom Underwood; the hospital scene in which Reuel revitalizes Dianthe; and the final scenes in Africa, when Reuel awakens the hidden city of Meroe from centuries of preserved dormancy.

Revitalizing Reuel

At the outset of the novel, Reuel's depression parallels Tom Underwood's: "Briggs could have told you that the bareness and desolateness of the apartment were like his life, but he was a reticent man who knew how to suffer in silence [...] Is suicide wrong? he asked himself with tormenting persistency" (441). The narrator links his morbidity to a rapturous interest in supernatural phenomena—he is consumed by his desire to lift the "veil" that separates life from death (442). This depressive characterization has been well-examined in recent literary criticism. For example, Thomas J. Otten argues that "if race can be seen as a pathologically hidden side of the self, then it can also be therapeutically brought to the surface and refigured" (229).⁶ Such readings usefully explore how Hopkins contributes to popular understandings of the mind by translating the issues of race prejudice and passing into discussions of mental health.

Without detracting from the importance of these readings, there are reasons to center on the professional dimension of Reuel's depression. In addition to his marginalized social position as an impoverished African-American barely passing for white, Reuel is an obsessive scientist, akin to Victor Frankenstein or to Aylmer of Hawthorne's "The Birth-Mark."⁷ Linking his depression to his inability to complete supernatural experiments, Reuel exclaims, "That is it [...] I have the power, I know the truth of every word—of all [psychic researcher] M. Binet asserts, and could I but complete the necessary experiments I would astonish the world. O Poverty, Ostracism! have I not drained the bitter cup to the dregs" (443). This apostrophe to Poverty and Ostracism hints that Reuel's depression is linked to his exclusion from privileged scientific institutions. The narrator situates Reuel's melancholic monologue in terms of his recent reading: "The book was called 'The Unclassified Residuum,' just published and eagerly sought by students of mysticism and dealing with the great field of new discoveries in psychology" (442).

Provocatively, both the title and the quotations from Reuel's reading are excerpted verbatim from William James's article "The Hidden Self" (1890), though Hopkins attributes the quotes to "M. Binet."⁸ By obscuring the reference to James and including excerpts that raise questions about overlooked psychic phenomena, Hopkins depicts Reuel as the solitary voice of dissent against mainstream American science.

Still, William James provides a sympathetic interlocutor for Hopkins, and she includes excerpts from his article that illuminate numerous psychic phenomena unaccounted for by modern science: "All the while, however, the phenomena are there, lying broadcast over the surface of history. No matter where you open its pages, you find things recorded under the name of divinations, inspirations, demoniacal possessions, apparitions, trances, ecstasies, miraculous healing and productions of disease, and occult powers possessed by peculiar individuals over persons and things in their neighborhood" (*Of One Blood* 442-3).⁹ Recalling Tom and Jack's discussion of Shakespeare in "The Mystery Within Us," Reuel's reflections on this passage of "Binet" hint at the limitations of science. Yet Reuel does not borrow passively from the works of James/Binet. He exclaims, "I would go farther than M. Binet in unveiling the vast scheme of compensation and retribution carried about in the vast recesses of the human soul" (448). Emphasizing "compensation" and "retribution," Reuel suggests that mesmeric phenomena address a deep spiritual imbalance, which Hopkins later characterizes as dissonance caused by the legacy of slavery.

Where James's "The Hidden Self" describes how electric batteries and magnets can produce psychic effects, Hopkins's *Of One Blood* depicts similar effects as supernatural. Without the aid of any external implements—without even intending to do so—Reuel experiences a spiritualistic encounter shortly after his reflection on "The Unclassified Residuum." Like Tom

Underwood, Reuel's suicidal thoughts are interrupted by a ghostly apparition: "He fell into a dreamy state as he gazed, *for which he could not account* [...] gradually the darkness and storm faded into tints of cream and rose and soft moist lips [...] he saw [sic] distinctly outlined a fair face framed in golden hair, with soft brown eyes" (445, emphasis added). Here Dianthe parallels the electrifying phantom, Dr. Thorn, of "The Mystery Within Us," but her apparition is erotic and not educational. In the following chapter, while attending a concert, Reuel discovers that the apparition he had seen was a projection of Dianthe Lusk, a member of the Fisk Jubilee Choir. Thus, Dianthe's living body is first introduced into the novel under an auspicious blaze of lights in a modern Boston theater.

Light permeates this chapter: "The Temple was a blaze of light" (450), "the glare of lights" (452), "the blaze of lights" (453), "the blaze of light" (454). The lights set an incongruously modern setting for songs that evoke "All the horror, the degradation from which a race had been delivered" (454)—and they anticipate both the brilliantly-lighted city of Meroe and the mesmeric connection between Dianthe and Reuel. More dazzling than the lights of modern Boston, Dianthe embodies an animal electricity so powerful that "all the current of [Reuel's] being flows to her" (461). Her animal magnetism and her brilliance beneath the bright stage lights of Boston associate Dianthe with electricity, though her relationship to the electric-supernatural circuits that so interest Hopkins will remain unclear until the final pages of the novel.

Reuel next encounters Dianthe through a second psychic projection, which informs him, "You can help me, but not now; tomorrow" (462). As she predicts, Briggs is summoned to the hospital the following morning to treat the victims of a train accident, including Dianthe. Upon his arrival, a nurse explains: "There is a woman [...] who was taken from that wreck. She shows

no sign of injury, but the doctors cannot restore her to consciousness. Dr. Livingston pronounces her dead, but it does not seem possible. So young, so beautiful” (463). The ensuing scene raises questions about medical authority. Deceived by her lack of animation, an array of doctors “pronounce the woman dead” and claim that “[s]he was past medical aid when brought” to the hospital (467). But Reuel argues that “nervous shock induced by the excitement of the accident has thrown her into cataleptic sleep” (465-7). Engaging contemporary debates about suspended animation, this passage suggests that the direct and indirect affects of modern technologies—in this case a derailed train—can produce new states between life and death that do not fit neatly into existing paradigms about the body or the mind.

To awaken his patient from shock, he expands on the work of “M. Binet,” explaining to the other attending physicians that “The secret of life lies in what we call volatile magnetism—it exists in the free atmosphere [...] When respiration ceases this magnetism cannot be drawn into the lungs. It must be artificially supplied. [...] I supply this magnetism” (468). Notably, although he claims to deal in magnetism, Reuel revitalizes Dianthe by administering a “salt [that] is saturated with oleo resin and then exposed for several hours in an atmosphere of free ammonia. The product becomes a powder, and *that* brings back the seeming dead to life” (469). By switching from the discourse of magnetism to that of alchemy, Briggs distinguishes himself from the psychic researchers James describes in “The Hidden Self,” who apply electricity or magnetic plates to revitalize patients.¹⁰ Since Briggs claims to have uncovered new truths about “the secret of life” by resisting modern scientific methods, the attending physicians remain incredulous as Reuel begins his treatment. As Dianthe’s body lies motionless, “A cold smile of triumph began to dawn on the faces of the older members of the profession, but it vanished in its incipiency, for a tremor plainly passed over the rigid form before them” (470). However, Reuel’s treatment

works: Dianthe's chest spasms, and soon Aubrey screams, "*She is alive!* Briggs is right! Wonderful! Wonderful!" (470).¹¹ This scene vindicates Briggs's fascination with the occult, foreshadowing some of the "secrets of Nature" he will discover in his trip to Ethiopia. Indeed, the narrator later reveals that Reuel's power represents "the shadow of Ethiopia's power" (558).

This hospital scene recalls Gilded Age revitalization narratives and Romantic descriptions of mesmeric phenomena, both of which regularly used terminology from the electrical sciences—yet Hopkins never uses the word "electric" in this novel. Instead, Reuel describes his treatment for Dianthe in terms of "conscious power," "animal magnetism," "volatile magnetism [that] exists in the free atmosphere," "subtile magnetic agent" (468). "Quivering nerves," "nervous shock," "mesmeric affinity," and "vital force" are also key components of Briggs's scientific-spiritualistic vocabulary (464-6). Decades earlier each of these terms would have been synonymous with electricity, but by 1902 electricity had become closely associated with material networks like power plants and telephone systems. By selectively deploying vitalist terms, Hopkins privileges the organic over the technological network. She links Reuel and Dianthe's mesmeric connection to their nerves, rather than to electro-medical circuits or "lectrocution," telephones or radios.

The organic electrical network is a recurrent image throughout *Of One Blood*. Indeed, Reuel and Dianthe's nerves and brains are so often active subjects of Hopkins's sentences that they almost seem to become characters in themselves: "The sudden shock of the news of his wife's death over-weighted a brain already strained to the utmost" (541); "shadowy images of past scenes and happenings flitted across [Reuel's] brain like transient reflection of a past perfectly familiar to him" (551); "The poor overwrought brain was working like a machine now—throbbing, throbbing, throbbing" (600). By elaborating these images of electro-magnetic

neural networks, Hopkins fragments her characters' bodies, emphasizing how little they know about their own psyches. In so doing, she suggests an alternative origin story for the modern network society—a story that involves the focused exploration of human interiority, rather than the construction of external systems.

Hopkins's fascination with the “natural” or embodied network becomes increasingly conspicuous in the Ethiopian chapters of the novel in which she describes televisual technologies and dazzling lights—two major tropes in early twentieth-century utopias—as more organic than technological. At this point Hopkins transitions into an adventure novel format, but the image of revitalization remains a crucial theme, nonetheless.¹² As Reuel's expedition approaches the continent, it perceives Africa as a dead body that initially appears alive—an uncanny reversal of the trope of suspended animation: “Like beautiful bodies they have the appearance of life, but within the worm of decay and death eats ceaselessly” (509). The lost city of Meroe undermines this initial impression, forcing Reuel—and his white companion Charlie Vance—to admit that the initial appearance of death had been deceptive: “Gone were all evidences of ruin and decay, and in their place was bewildering beauty that filled him with dazzling awe” (545). Echoing the narrator's earlier depiction of Dianthe's shocked-and-reanimated body, Ethiopia contains a hidden spark of perfect, “dazzling” vitality.

Hopkins's depiction of Meroe expands the trope of suspended animation and revitalization to include communities in addition to individual bodies.¹³ For the individual, Meroe offers a new life for the depressed and neurasthenic Reuel: “He who had been desirous of death but an hour before obeyed the first law of nature. Who can wonder? It was but the re-awakening of life within him” (542). Beyond “re-awakening” Reuel, Meroe literally offers him a new life as King Ergamenes, the rightful heir to the Ethiopian throne. At the same time, the lost

city represents the possibility for a revived community of African descendants, away from the racial violence of post-Reconstruction American society. Indeed, Hopkins even hints that Meroe offers the possibility for new life after death. Indeed, the society built around “re-incarnation by natural laws” (562), and when Dianthe commits suicide, she is met by “the welcome of ancient Ethiopia to her dying daughter of the royal line” (615). The “glorious band” and the “royal ancestors” that she describes with her last words hint that Dianthe’s death represents the beginning of a new existence—one more worthy for a royal descendant of Meroe than the life that Reuel offered her in the United States (615).

Although it predates Greek civilization, Meroe does not appear in the novel as an ancient city with Bronze-age technologies. Instead, it seems more advanced than the electrically-illuminated “White City” of the 1893 Chicago World’s Fair: “Lights twinkled everywhere; there was the fragrance of flowers, there were columns of marble draped in amber, azure and green, and glittering lamps encrusted with gems and swung by golden chains from the sides of the building. A blazing arch formed of brilliant lamps raised like a gigantic bow in the heavens and having in its center the words ‘Hail! Ergamenes!’ in letters of sparkling fire met his startled gaze” (554). This description of brilliant illumination parallels contemporary depictions of electrified fantasy cities, ranging from Coney Island to the utopias of pulp fictions, yet the narrator never describes the power source for these lights, characterizing Meroe as magical *and* technologically advanced, ancient *and* advanced.

This scene of fantastic illumination complicates the narrator’s earlier depiction of American modernity, as seen through the eyes of Charlie Vance: “his healthy American organization missed that march of progress attested by the sound of hammers on unfinished buildings that told of a busy future and cosy modern homeliness. Here there was no future. No

railroads, no churches, no saloons, no schoolhouses to echo the voices of merry children, no promise of the life that produces within his range of vision. Nothing but the monotony of past centuries dead and forgotten save by a few learned savans [sic]" (526). Initially, Charlie inaccurately perceives Africa as "dead and forgotten." Yet if American modernity is always under construction, as his nostalgia for "unfinished buildings" suggests, then Meroe represents a completed vision of modernity—a closed, illuminated space that represents the health and the independence of its community. By contrasting Charlie's interpretation of Africa with a utopian image of Meroe, Hopkins hints that Africa has the potential to cultivate a spiritualistic network society that rivals America's eternally-under-construction "grid."

As a scion of both African and American traditions, Reuel first seeks to blend these versions of modernity. When he and his Ethiopian tour guides "encountered a perfect network of streams [...] of sufficient magnitude for navigation and commerce [...] Reuel remembered the loathsome desert that stood in grim determination guarding the entrance to this paradise against all intrusion, and with an American's practical common sense, bewailed this waste of material" (565). In Meroe, the transportation and irrigation network is a naturally-occurring phenomenon, rather than a symbol of technologically-mediated and rationalized space. Initially inspired to harness natural resources like an American capitalist, Reuel is not fully convinced that Meroe represents an improvement from American modernity until he encounters technologies that he had never seen before—a disk that allows him to see the whereabouts of anyone living: "Reuel advanced and looked upon the surface of a disk of which the top of the table was composed. The material of which the polished surface was composed was unknown to Reuel [...] Reuel made no wish, but thought of the spot where the accident occurred upon the River Charles weeks before [...] Presently the water seemed to darken, and he saw distinctly the canoe containing Aubrey,

Molly and Dianthe gilding over the water. He started back aghast, crying out, ‘It is magical!’” (575). Ai corrects Reuel by clarifying that the device is not magical, it “is a secret of Nature” (575). By occluding the power source that illuminates the Meroe and animates the disk, *Of One Blood* hints that Ethiopia has access to technologies that modern America cannot even imagine. Even Reuel, who was raised during the era of American technological modernization, perceives Ethiopian technologies as “magic,” suggesting that the power source is more astounding and mysterious than even electricity: “In the heart of Africa was a knowledge of science that all the wealth and learning of modern times could not emulate” (576). Throughout her depiction of Meroe, Hopkins reappropriates the discourses of the electric age to construct an Africanist alternative to the history of western technology.

Provocatively, in *Contending Forces*, when an African-American fortune teller employs a similar “screen” that mysteriously reveals “the answer to a question” (283), the narrator recognizes the seemingly magical effect and a result of “the wonderful agencies of electricity and magnetism” (286). By disassociating this televisual technology from electricity in *Of One Blood*, Hopkins avoids drawing an analogy between American technological networks and Ethiopia’s “secrets.” In so doing, she hints that electricity is too closely associated with Western culture to represent the supernatural and explicitly-Ethiopian power of her lost city. Nonetheless, Hopkins’s depictions of networks, revitalized bodies, and blazing lights suggest that electrical networks were still analogous to (or inspiration for) the alternative modernity she describes. In *Of One Blood*, Hopkins both emulates and complicates the *fin de siècle* utopia, hinting at both the promise and the limits of electricity as a signifier and a tool.

“A Storage Battery of Power We Call the Will”: Gilman’s Organic Electrical Networks

Like Hopkins, Gilman recurrently returns to the image of healthy nerves to describe reanimated bodies and communities. After publishing the critically-acclaimed “The Yellow Wallpaper” (1892), Charlotte Perkins Gilman turned her attention from mental deterioration to revitalization. Positioning herself as a social engineer, Gilman wrote several utopian tracts between 1901 and 1915 which sought to “indicat[e] what people might do, real people, now living” (*Moving the Mountain* 37). These texts are notoriously eugenicist, but they also suggest that electrical networks represent and catalyze new community formations. For example, *Human Work* (1904), the sociological treatise which generalized theories from *Women and Economics* (1898) and laid the foundation for Gilman’s later utopian fiction, depicts modern society as a complex organism, sutured together by electrical nerves, that represents the most advanced stage of human evolution. In such works, Gilman evokes the promotional rhetoric of figures such as Thomas Alva Edison and Charles Proteus Steinmetz, affirming the rhetoric of technological progress that Hopkins actively refigures.¹⁴ An analysis of this rhetoric provides a useful context for interpreting Gilman’s utopias and offers the opportunity to expand our understanding of the revitalization narrative in the early twentieth century.

Gilman begins *Human Work* by defamiliarizing the human body: “We had, and used, and supposed we knew, our own bodies, through long centuries of living and dying, yet our late-learned physiology was able to show us facts most vitally important which we had never dreamed of” (5). Like Hopkins, Gilman draws on the rhetorical power of “the hidden self;” but she later explains that “our late-learned physiology” revealed a set of similarities between human bodies and electrical circuits. Not only are humans “storage batter[ies]” in her estimation (19)—they are batteries that *must* be put in circuit with other batteries in order to survive: “Our

connection is so subtle, so fluent, each human brain being so large a storage battery of social energy, that we can separate for a time with no loss. But make the separation complete and the humanness dies” (114). Indeed, she describes limited interactions, such as two men working in a lighthouse, as “a dangerously ‘short circuit’” (92).¹⁵ Gilman launches into this argument headlong, using a vocabulary drawn from the biological and physical electrical sciences to position her social views as scientific laws.

Gilman began to develop this electro-vitalist vocabulary early in her career, in *Women and Economics* (1898) and *Concerning the Children* (1901). In the former treatise, she mentions the “vast storage battery of female energy” (134); in the latter she uses this metaphor to explain human vitality more generally: “The human creature does not originate nervous energy; but he does secrete, it so to speak, from the impact of natural forces. He has a storage battery of power we call the will” (47). Her longstanding fascination with this analogy is provocative, since storage batteries are famously inefficient. Even today “sustainable” power sources like solar energy and wind power are often criticized because storage batteries cannot efficiently store and redistribute the energy these sources intermittently generate.

At the turn of the twentieth century, while Gilman was crafting this electro-vitalist rhetoric, the battery was a highly-visible technology, which was a favorite subject of the popular press as it was incrementally modified and upgraded. The article “Storing Electrical Heat” (1909) from the monthly *Popular Electricity in Plain English* offers an instructive glimpse of what the storage battery signified at the time: “So far the storage battery has been the only device for storing up electrical energy (in the form of chemical energy) so that it could be used as required, and the storage battery has not been developed to a stage to make it practicable for the household. As a result the electric light plant must be built with a capacity sufficient to meet the

demands of the moment of all the patrons of the company, which demands result in high ‘peak loads’ at certain points of the day” (“Storing Electrical Heat” 785). As this passage suggests, the storage battery represents the allure and the difficulty of holding an electrical charge. Read in the context of this passage, Gilman’s storage battery metaphor recasts Whitman’s “body electric;” she depicts humans as repositories of energy that are only “efficient” when linked together rather than individuated.

Expanding this analogy, *Human Work* suggests that social bodies are bound together by electromagnetic forces: “Human beings are [...] held together in definite relation by laws of attraction and repulsion” (112)—an electromagnetic argument to promote the equality of the sexes.¹⁶ As a result, Gilman reasons that human beings must transmit and receive “energy” in order to survive: “With our vastly increased capacity for happiness our misery must be accounted for by ‘failure to connect’ with the universal energy in one or both ways. We are denied our share of stimulus, we lack social nourishment, or, worse, we are denied our right to discharge, are not rightly placed in the field of social action, are not doing the work which belongs to us” (*Human Work* 205). This passage reformulates Gilman’s famous critique of the rest cure, implying that the social subjugation of women disrupts the natural flow of energy, thereby *creating* rather than curing diseases like neurasthenia. Nonetheless, the dubious mixing of organic, electrical, and sociological analogies in this passage troubles Gilman’s authoritative tone. Phrases like “failure to connect” and “universal energy” connote electrical circuits and physical laws; yet the phrase “*denied our right to discharge*” frames this scientific rhetoric in legal or ethical terms, complicating the image of natural energy flows that Gilman develops. By blending organic and electric metaphors—and couching both in the political terms of early-twentieth-century feminist thought—Gilman describes society in terms of energy exchanges.¹⁷

Human Work goes on to postulate how built electrical networks affect individual and social bodies. If life adheres to the law of “conservation of energy,” Gilman argues, then networked technologies offer an evolutionary advantage in that they allow people to receive and transmit “energy” more easily (38).¹⁸ The slippage between her descriptions of the material environment and her metaphorical discussions of energy and bioelectricity make for a provocatively confusing hypothesis: “As an effect of changed conditions our conduct to-day is at the grade required by steam and electric communication” (24). Unraveling this grammatical knot, we see Gilman reflecting on how technology affects—or even redefines—human relationships. In this passage, Gilman theorizes how networked technologies impact modern life, anticipating the works of later theorists of socio-technical systems, such as Lewis Mumford, Marshall McLuhan and James Carey. Her convoluted syntax suggests that she hesitates to identify the agent of change: did the technologies improve human conduct, or did human evolution necessitate the invention of more technologies of interconnection? Regardless of the agent, Gilman argues that technologies “make for peace today, for smooth and rapid growth of international agreement” (24). According to her developmentalist logic, electric technologies are both a cause and an effect of the evolution of human civilization.¹⁹

This line of reasoning sets Gilman’s model of collective action against competing versions of socialism and communism that gained popularity during the Gilded Age. Posing an answer to the question, “Why is it not better to produce and consume locally, each man for himself, as Tolstoi would have us?,” Gilman argues that human evolution demands integration, not isolation: “A healthy, growing social life constantly re-creates its body as does the physical life, and our American civilisation shows this beyond all others in its rapid adoption of new material forms and processes. The constant demand for easier and swifter mechanism is as

natural and healthful in society as it is in a physical body, and physical evolution has moved on that line continually” (173). She reads technological development as evidence that human societies naturally evolve into conditions of increasing specialization and interdependence. While other cultural critics, such as John Muir, advocated a return to nature, Gilman argues that technological development will lead towards improved social conditions. Indeed, she sees the American obsession with the individual as the source of contemporary social ills that disrupt the natural flow of energy, repeatedly suggesting that, like a storage battery without a circuit, an individual without strong social ties slowly loses energy and dies.²⁰

Dissenting from individualists like Whitman and socialists like Tolstoy, Gilman proposes that the “cause of delay” to human progress stems from the difficulty of theorizing collectivities:²¹ “We are treating social disease by local application. We find, as it were, a tubercle or boil upon the body politic, we apply all manner of treatment [...] but we forget, or do not know, that this local trouble [...] is on a living body, and is caused and maintained by diseased conditions in that body, far beyond the material boundaries of that location” (383). Notably, she turns to an electric metaphor to describe a healthy body politic that has surpassed the “diseased conditions” of American society:

To feel the extending light of common consciousness as Society comes alive!—
the tingling “I” that reaches wider and wider in every age, that is sweeping
through the world to-day like an electric current, that lifts and lights and enlarges
the human soul in kindling majesty:

To feel the power! the endless power! Not only the ceaseless stream of the
universal Godness, but our interminable array of batteries, full charged; the stored
energy of all time embodied in poem and story, in picture and statue, in music and

architecture, in every tool, utensil, and giant machine wherein the human brain and the human hand have made force incarnate. (388-9)

In this ecstatic passage, peppered with exclamation points, Gilman describes how sensory experience can extend beyond the boundary of the skin. She imagines that “Society” could be a sensate body—the “tingling ‘I’”—that individual human bodies can physically perceive.

Describing “common consciousness” as “tingling [...] like an electric current,” she depicts social change as an “endless power” that she can “feel.”

Throughout *Human Work*, Gilman portrays human energy as precious and fleeting; her human batteries are in constant need of recharging. Yet in this passage, she finally reveals the stakes of nurturing the energy she describes. She claims that when their energy is “full charged,” humans can transform energy into material, social, and moral artifacts that leave an indelible historical imprint: “the stored energy of all time embodied . . . the human brain and the human hand have made force incarnate.” In this respect, she suggests that humans turn energy into *culture*, a living repository of human experience. Moreover, by describing these cultural objects as “the stored energy of all time,” she implies that these artifacts represent perfect “storage batteries,” which can be accessed continuously as energy. In short, by understanding human life in terms of connections, Gilman suggests that human storage batteries will no longer drain so quickly.

This exultant rhetoric marked a utopian turn in Gilman’s work; her earlier treatises tended to discuss electricity (and interconnectedness more generally) in matter-of-fact terms, without invoking the image of the revitalized body or body politic. In *Women and Economics*, Gilman describes electricity as one of many environmental forces acting on the human body (2). In *Concerning the Children*, she classifies electricity as only one of many ways that modern

American life transcends the insular home. The latter treatise suggests that the idealization of enclosed hearths and kitchens requires a dangerous disavowal of the physical networks necessary for modern forms of leisure and hygiene; but here electricity is just one of a range of modern technologies, and not a symbol for connected social consciousness:

Like an ostrich with his head in the sand, the mother shuts herself up in the home and imagines that she is safe and hidden, acting as if “the home” was isolated in space. That the home is not isolated we are made painfully conscious through its material connections,—gas-pipes, water-pipes, sewer-pipes, and electric wires,—all serving us well or ill according to their general management. Milk, food, clothing, and all supplies brought in bring health or disease according to their general management. The mere physical comfort of the home needs collective action, to say nothing of the psychic connection in which we all live, and where none is safe and clean till all are safe and clean. (*Concerning Children* 289 – 290)

By placing “the home” in quotation marks, Gilman implies that contemporary conceptions of domesticity both repress and take for granted technological interconnection. She illustrates how the modern home is now permeable: linked to networks of pipes and wires, it is implicated in the exchange of consumer goods (milk, food, clothing, etc.). Noting that these connections can bring “health or disease,” she refigures conventional definitions of women’s work, positing that the truly attentive mother should be more concerned with the “general management” of networks than with the management of a single home space. Depicting twentieth-century home life as emphatically embedded within decentralized assemblages, Gilman argues that maintaining the home requires physical and psychical “collective action.”

Gilman's fictional revitalization narratives oscillate between *Concerning the Children's* suggestion that networked technologies require collective management and the rhapsodic depiction of electrical connections of *Human Work*. She regularly constructs her utopias on perfect power grids, suggesting that the correlation between electricity and human energy is essential to her utopian imagining—yet her fictions often describe women managing, rather than embodying, electrical networks. For example, Gilman's first completed utopian novel, *Moving the Mountain*, depicts electricity as a useful tool that makes city life more leisurely, more beautiful, and concomitantly healthier. Like *Human Work*, it suggests that “The business of the universe about us consists in the Transmission of Energy” (130)—yet while the novel incorporates the treatise's electro-vitalist vocabulary, its narrative tone tends more toward descriptive realism than prophetic, triumphant prose.

Gilman's first novel depicts an entire society designed to optimize each citizen's “productive energy” (97).²² Drawing on Edward Bellamy's *Looking Backward*, *Moving the Mountain* depicts the central-station plant as an organizing model for improving American life. It also features an outsider narrator who can contrast *fin de siècle* culture to the novel's utopian society. Notably, Gilman frames her novel as more realistic than its predecessor by modifying the trope of suspended animation: Bellamy's Julian West awakens after a century of mesmeric sleep; Gilman's narrator, John, recovers after suffering from amnesia for thirty years. The novel begins when John's sister, Nellie, is reunited with her amnesiac brother and carefully prepares him to re-enter American society, which had dramatically changed since he was injured in Tibet. Extending the trope of suspended animation, Gilman characterizes the patriarchal culture of the late-nineteenth-century U.S. as a metaphorical slumber that kept society in stasis—until the women “woke up” and created a modern utopia. As women became socially conscious, they

identified and solved problems to revitalize American society as well as their own neurasthenic bodies. Gilman oscillated between describing individual and collective advantages to her new society, teasing out the dichotomy between Whitman's individual body electric and the electric body politic she imagines in *Human Work*. In effect, her characters are personally fulfilled and coherent individuals, whose lives have been improved appreciably by the development of electrical networks that increased their interdependence on other, equally happy individuals.

In *Moving the Mountain*, the revitalization of American society involves the widespread adoption of electrical power, which John first notices as the absence of smoke: "You've ended the smoke nuisance, I'm glad to see. Has steam gone, too?" (58). Nellie's reply introduces electricity to the narrative as evidence for the new society's awareness of public health and safety issues:

"We use electricity altogether in cities now," she said. "It occurred to us that to pipe a leaking death into every bedroom; to thread the city with poison, fire and explosion, was foolish."

"Defective wiring' used to cause both death and conflagration, didn't it?"

"It did," she admitted, "but it is not 'defective' any more." (58).

Drawing attention to the potential dangers of Gilded Age electrical networks, this passage associates the improvement of electrical systems with public health and safety. It also marks the utopian society as scientifically advanced, lending credibility to the social changes that come with this technological improvement. In this respect, *Moving the Mountain* imagines a future in which women take control of all civic affairs, including, in this case, overseeing electrical networks.²³

Gilman's diction further associates the utopia's awakening with electrical technologies. When John asks, "what happened to the Four Hundred—the F.F.V's—and the rest of the aristocracy?" Nellie explains, "The same thing that happened to all of us. They were only people, you see. Their atrophied social consciousness was electrified with new thoughts and feelings. They woke up too, most of them" (138-9). Eliding the problem of socio-economic stratification, Gilman links electricity to individual and collective health by likening this social enlightenment to electro-medical treatments that stimulate "atrophied" muscles.

Later in the novel, John visits an old friend, Frank Borderson, who also uses an analogy drawn from an electrical technology to explain the recent social revolution. Remembering Frank as a lecherous alcoholic, John expects to find him in "a prison or a hospital," discarded by the new world order his sister repeatedly describes as "pure" and health-obsessed. Instead, he discovers that Frank is now a professor who studies the Transmission of Energy. Although he is forbidden from reproducing because of his earlier behavior, Frank has been revitalized by "elaborate baths, massage, electric stimulus, perfect food, clean comfortable beds, beautiful clothes, books, music, congenial company, and wonderful instruction" (136). During their reunion, the old friends sit by an electric fireplace, which inspires Frank to explain the recent social changes in a new way:

Again we sat silent. I [...] sat looking into the fire; the soft shimmering play of rosy light and warmth with which electricity now gave jewels to our rooms.

Frank followed my eyes.

"That clean, safe, beautiful power was always here, John—but we had not learned of it. The power of wind and water and steam were here—before we

learned to use them. All this splendid power of human life was here—only we did not know it.” (138)

Though *Moving the Mountain* imagines new-and-improved electric devices, it is an electric hearth—a slightly-modified version of a very old technology—that sparks this moment of reflection. Musing “That clean, safe, beautiful power was always here [...] but we had not learned of it,” Frank offers insight to why electricity held such fascination in Gilded Age America. Although the vast majority of electrical apparatuses were modeled to look like older commercial technologies, the fact that electricity was so quickly integrated into modern science and industry—that James Clerk Maxwell formulated his electrodynamic equations (1861-2) only two decades before electric power became commercially viable—associated electricity with the possibility for quick and dramatic change. In short, even the simplest of electrical applications signified the potential for uncovering life-changing truths about the universe.²⁴ At the same time, Gilman illustrates how electric technologies represent a revitalization of traditional images of material and psychological contentment.

While celebrating the historical legacy of electrical science and engineering, *Moving the Mountain* imagines innovative applications for electric power. Most visibly, it uses electricity to replace skyscrapers and cluttered streets with public palaces and green parks. By perfecting power generation and distribution, Gilman’s utopian society makes a higher standard of living accessible to the masses. As Nellie’s husband Owen explains to John, “Why shouldn’t people work in palaces? It doesn’t cost any more to make a beautiful building than an ugly one” (102). Again, John recognizes electricity by the absence of other power sources—in this case, the absence of gasoline:

“Electric power there too?” I suggested.

Owen nodded again. “Everywhere,” he said. “We store electricity all the time with wind-mills, water-mills, tide-mills, solar engines—even hand power.”

“What!”

“I mean it,” he said. “There are all kinds of storage batteries now. Huge ones for mills, little ones for houses; and there are ever so many people whose work does not give them bodily exercise, and who do not care much for games. So we have both hand and foot attachments; and a vigorous man, or woman—or child, for that matter, can work away for half an hour, and have the pleasant feeling that the power used will heat the house or run the motor.” (102)

In Gilman’s earlier works, the storage battery signified the imperfections of human energy. In this utopian future, life has improved so dramatically that people use their energy to fuel electrical circuits instead of relying on external energy sources to revitalize their own weary bodies. In this scene, Gilman sets her own mythology of electric networks apart from works I previously explored—where *A Connecticut Yankee* was fascinated with controlling the electric spark, *Moving the Mountain* suggests that it can be alluring and healthful to produce it. More importantly, *Moving the Mountain* suggests a shift in thinking about electricity as an abstract source of (and symbol for) power to a new interest in health and sustainability. Clemens’s *Yankee* says nothing about how his networks affect the natural landscape of medieval England. The turn towards wind and water power in Gilman’s work represents a fantasy that electric power generation can be divorced from the smokestack, allowing citizens to reconnect with the natural beauty of the American landscape. This modern pastoral is therapeutic in Gilman’s work—not only does electricity appear to spring directly from the water, but also, like water, electricity replenishes communities as it flows through them.

Like *Moving the Mountain*, Gilman's "Bee Wise" (1913) associates power grids with revitalized bodies and communities. This short story depicts a group of enterprising women who develop two towns—"Beewise" and "Herways"—that represent a "rational paradise," "free of the diseases of cities" (271). Tucked into the California coastline, the towns later become franchiseable models that "paved the way for so many other regenerated towns" (267). This short story draws out the importance of collaborative specialization, depicting how an assemblage of experts can create an optimally efficient and healthy networked society. The story begins when a woman known only as "the Manager," so named for her specific expertise, receives ten million dollars and a few plots of California land from an elderly uncle. Gilman describes this inheritance as a rational decision rather than a chance occurrence. The Manager explains "[My great uncle is] not dead—but I'm afraid he soon will be [...] It appears he's hired people to look up the family and see what they were like—said he didn't propose to ruin any feeble-minded people with all that money. He was pleased to like my record. [...] And he's come on here to get acquainted and to make this over before he's gone. He says no dead man's bequest would be as safe as a live man's gift" (266).

The Manager's great uncle was a prospector in the Old West; with this transaction, the narrator implies that intelligent, business-minded women are the rational inheritors of the frontier legacy. The Manager uses this inheritance, and the mythically unsettled "land and water, in California" to cross gender—rather than geographic—barriers (266). She decides to set up a model town, "a place of woman's work and world-work too" that will "set a new example to the world" (266). Her initial vision centers on the ability to use water for power and irrigation, to create a modern, electrified Eden: "What I propose to do is to develop that little port, open a few industries and so on, build a reservoir up above and regulate the water supply—use it for

power—have great gardens and vineyards. Oh, girls—it’s California! We can make a little Eden! And as to Motherhood—’ she looked around us with a slow, tender smile, ‘there’s no place better for babies!’” (266). As the towns develop, they challenge gender roles by allowing women to choose their preferred type of labor—even if that means regulating the electrical engines: “the men [...] built and dug and ran the engines, the women who spun and wove and worked among the flowers, or vice versa if they chose” (270).

In “Bee Wise,” electricity is more than an incidental technological choice—it is the motive power that enables the women to grow their idea into a workable model. As in *Moving the Mountain*, the generation of electric power becomes central to the larger goal of proving “that a group of human beings could live together in such wise as to decrease the hours of labor, increase the value of the product, ensure health, peace, and prosperity, and multiply human happiness beyond measure” (271):

The first cash outlay of the Manager, after starting the cable line from beach to hill which made the whole growth possible, was to build a reservoir at either end, one of which furnished drinking water and irrigation in the long summer, the other a swimming pool and steady stream of power. The powerhouse in the canon was supplemented by wind-mills on the heights and tide-mill on the beach, and among them they furnished light, heat, and power—clean, economical electric energy. Later they set up a solar engine which furnished additional force, to minimize labor and add to their producing capacity. (267)

Typical of early twentieth-century Western literature, “Bee Wise” links power generation with irrigation and water access. Yet Gilman includes leisure in her adaptation of this model, adding a swimming pool to the usual array of “drinking water and irrigation [...] and a steady stream of

power.” According to this passage, most of the labor of establishing *Beewise and Herways* involves harnessing every available natural power source to maintain a steady flow of “clean, economical electrical energy.” Here Gilman obscures the labor of building and maintaining power distribution systems, coding electrical networks as inherently productive.

In a *Good Housekeeping* interview about “The Woman of the Future” (1912), Thomas Edison uses a vocabulary almost identical to Gilman’s to claim that electricity can free up “mental energy,” and thereby revitalize womankind: “To diminish the necessity for utilizing man himself, or woman herself, as the motor-furnishing force for this life’s mechanical tasks, is to increase the potentiality of humanity’s brain power. When all our mental energy can be devoted to the highest tasks of which it may be capable, then shall we have made the greatest forward step in this world’s history [...] It is there that electricity will play its greatest part in the development of womankind. It will not only permit women to more generally exercise their mental force, but it will compel this exercise” (Marshall 96-97). Like Gilman, Edison dreams that certain applications of electric power will release women from psychically draining domestic tasks that inhibit their ability to participate in “the highest tasks.” *Moving the Mountain* and “Bee Wise” narrativize this ideology, imagining what American modernity would look like if women were allowed to participate in every realm of economic and cultural production.

Crucially, however, Edison depicts electricity as a new “handmaiden” that helps women with the domestic tasks they will continue to perform in their individual homes. In his vision, women are the consumers—not the producers—of electrical power. In contrast, Gilman imagines healthy, clean power plants that are run by men and women. More importantly, Gilman invokes the image of the power network to render the home-based social unit obsolete. For example, in *Beewise and Herways*, “There were no servants in the old sense. The dainty houses had no

kitchen, only the small electric outfit where those who would might prepare coffee and the like. Food was prepared in clean wide laboratories” (270). In these model towns, food is produced and distributed from a central station. Modeled after and integrated into electrical networks, the kitchenless home represents the pinnacle of Gilman’s technological modernity. Moreover, she supplies a “small electric outfit” where people can serve their own whims, implying that this redistribution of domestic labor need not impose on individual desires. In these stories, Gilman portrays electricity as a tool for enhancing—and also a metaphor for understanding—health, society, and human life.

Gilman’s short story “Dr. Clair’s Place” approaches the relationships among mental health, human vitality, and electricity from a different perspective. It begins with a depressed protagonist on the verge of death, and follows her as she is slowly revitalized at a utopian medical facility in California. Mitigating the stigma associated with such facilities, the narrator points out that Dr. Clair does not call her facility a “psycho-sanatorium [...] the name on the stationary was just ‘The Hills’” (320). The medical facility is an alternative grid, which Gilman describes much like the towns of Beewise and Herways: “On the southern face of the Sierra Madres she had bought a high-lying bit of mesa-land and steep-sided arroyo, and gradually added to it both above and below, until it was quite a large extent of land. *Also she had her own water; had built a solid little reservoir in her deepest canyon; had sunk an artesian well far up in the hills behind, ran a windmill to keep the water up, and used the overflow for power as well as for irrigation*” (320, emphasis added). Invoking the image of the “West Cure,” Gilman applies this setting to the project of repairing psychologically-damaged women. Intriguingly, the narrator also notes that electrical power transforms the psycho-sanatorium into a desirable destination for healthy people, too: “and from year to year she ran up more cheap comfortable little shacks, each

with its plumbing, electric lights and heating—she had water-power, you see” (321). Electricity produces wealth and contentment for Dr. Clair and her patients, in excess of the labor and resources required to install and manage the facility. This power source represents the dream for renewable wealth and energy once embodied by the idealization of the American frontier.

“Dr. Clair’s Place” opens as the protagonist, Octavia Welch, nonchalantly explains her resolution to commit suicide: “Health—utterly broken and gone since I was twenty-four. Youth gone too—I am thirty-eight. Beauty—I never had it. Happiness—buried in shame and bitterness these fourteen years. Motherhood—had and lost. Usefulness—I am too weak even to support myself. I have no money. I have no friends. I have no friends. I have no hope in life.” Then a dim glow of resolution flickered in those dull eyes. “And what is more I don’t propose to bear it much longer” (318). Listing these Gilded Age standards for evaluating women’s lives and explaining how she fails to meet each criterion, Octavia reflects on the worthlessness of her existence. The “dim glow” that “flickered” in her eyes at the thought of suicide is the only evidence that she has any vitality remaining. After this brief monologue, the narrator reveals that Octavia has shared this intimate confession in a strange context: “It is astonishing what people will say to strangers on the cars” (318). The anonymity of this interaction underscores the protagonist’s desperation. The narrator adds, “I think she would have showed the utter wreck of her life to any who asked to look, and not have realized their scrutiny. In fact it was not so much that she exhibited her misery, as that she was nothing but misery—whoever saw her, saw it” (319). Octavia embodies the disrupted mental energy Gilman generalizes in her nonfiction; the neurasthenic protagonist’s body and mind have been wrecked by modern American life. On the train, in the city, the stranger she confides in offers nothing but “cheerful commonplaces” (318).

Thus, the short story begins by establishing the lack of sympathy or of resources available for women, before positing a utopian solution.

Although Octavia's story does not impress the stranger she confides in, another passenger—an old patient of Dr. Clair's and the story's unnamed narrator—fortuitously overhears her. She suggests that even without health, youth, beauty, happiness, motherhood, usefulness, money or friends Octavia's life might be valuable to science: "If you had an obscure and important physical disease you'd be glad to leave your body to be of service to science, wouldn't you? [...] You can't leave your mind for an autopsy very well, but there's one thing you can do—if you will; and that is, give this clear and prolonged self-study you have made, to a doctor I know who is profoundly interested in neurasthenia—melancholia—all that kind of thing. I really think you'd be a valuable—what shall I say—exhibit" (319). The stranger does not address Octavia with sympathy, but suggests that she can spend the final days of her life "purely as a science experiment," adding, "There are others who 9profit [sic] by it, you see" (319). The narrator's matter-of-fact approach demonstrates two methods that might revitalize women like Octavia: she implies that allowing women to contribute to science might give them a new purpose—a point she reiterates by celebrating the wonders worked by the female Dr. Clair. Underlining her collectivist ideology, Gilman suggests that the neurasthenic woman can only value her own life in relation to others.

When Octavia arrives at "the Hills," she finds that Dr. Clair talks "not as a physician to a patient, but as an inquiring scientific searcher for valuable truths" (324). This passage provocatively implies that a "physician" has a more fraught relationship to a patient than a "scientific searcher" has to her object of study. Indeed, Dr. Clair introduces herself by explaining: "Please understand—I do not undertake to cure you; I do not criticize in the least

your purpose to leave an unbearable world. That I think is the last human right—to cut short unbearable and useless pain. But if you are willing to let me study you awhile and experiment on you a little—it won't hurt, I assure you" (323). Dr. Clair underscores the fact that she respects Octavia's body as her own, she begins her search for "valuable truths" by drugging Octavia, forcing her "experiment's" weary body to rest.

Dr. Clair begins to revitalize Octavia by instructing her to control electrical circuits at her own whims, including "a light moveable telephone" that pipes different kind of music into the room (324); and a colored electric light display that allows Octavia to "fill the room with any hue I chose, and see them driving, mingling, changing as I played" (325). Like *A Connecticut Yankee*, "Dr. Clair's Place" hints that the experience of manipulating a control panel could amplify the user's sense of control over his or her own body—by managing light and sound through these circuits, Octavia strengthens her own body and mind. Yet what ultimately cures Octavia is not a patent medicine or electrical stimulus—it is "the right Contact, Soul to Soul." Electricity is a medium that reinvigorates her body to the point that it can appreciate social consciousness; but electricity is not an end in itself. It is merely a power that facilitates the redistribution of women's work, and helps revitalize "worn-out nerves" just enough that they can appreciate the feeling of social interconnection. In *Human Work*, electricity was a metaphor for human interconnections; in "Dr. Clair's Place" it becomes a medium that facilitates that vision. Gilman's body of work imaginatively applies electrical networks to the problem of community health. She suggests that Americans could tackle an array of problems—from nervous disorders to "the servant question"—by reconstructing the built environment in the image of centralized power networks. Beyond illustrating a new pastoral with power plants, Gilman imagines that

humankind has evolved into a new biological and technological life form comprised of interdependent individuals: Society, she suggests, is the next phase in human evolution.

In this respect, Gilman's later work resonates with the work of prominent electrical engineer and socialist, Charles Steinmetz. Steinmetz served on the editorial board of the *New Review* with Gilman, and, in *America and the New Epoch* (1916), he proposed that American society should evolve from the age of individualism into the age of the corporation—modeled after his employer, General Electric.²⁵ Echoing Gilman, he describes the persistence of the American fascination with the individual and the need to evolve to a new way of thinking. Yet where Gilman emphasized the potential for electricity to catalyze (or to represent) this change, Steinmetz emphasized the potential of the literary imagination. Note, too, that Steinmetz's frustration with the literature of "bygone ages" resonates with Gilman's critique of individualist literature that I discuss in my introduction. Advocating for a new literature of interconnectedness, Steinmetz argues, "Here most effective would be the assistance of those numerous writers who are not connected with corporations nor with the muck-raking crowd [...] there is within the huge modern industrial corporation a wonderful field of romance and interest, still unknown and untouched by any writer, which in the hands of a Kipling or a Jack London would give most wonderful stories, more interesting and fascinating than any of the tales of bygone ages of the world's history" (215). Without making too much of this coincidence—the author fascinated with electrical networks and the electrical engineer fascinated with narrative—I want to highlight the interdependency of electricity and humanistic culture that this passage evokes. Where most technological utopias depict technology *replacing* culture, substituting new gadgets or media for art and literature, the collectivists I explore in this chapter imagine how electricity might extend or enrich aspects of American culture.²⁶ In this respect, both Gilman and

Hopkins's revitalization narratives differ from the hundreds of utopian tracts published after Edward Bellamy's *Looking Backward*. While others depicted electricity as a signifier for the future, Gilman and Hopkins engage psychological and vitalist discourses to portray electricity as an ancient and universal cosmological force. Nonetheless, both suggest that the reinvigoration of individual human bodies will require a cultural paradigm shift that understands individuals as components of larger assemblages.

From *Human Work* through "Dr. Clair's Place," Gilman imagines how electricity could revitalize human bodies, allowing them to produce art and sculpture. In contrast, Hopkins hints that electricity is an insufficient symbol for grappling with the promises and problems of modern American society. Consequently, by omitting the word "electric," *Of One Blood* avoids the violent and the mundane connotations of the electrical network, describing an alternative future in which nerves and bloodlines—made visible and recoverable by the trope of a lotus birth mark—displace American power lines as the symbol of the modern network society. Taken together, these authors imagine new directions for the technological utopia and the revitalization narrative. They displace the single inventor—the Frankenstein, the Franklin, or the Edison—and generate distinctly modern utopias by applying the logic of interconnection to their narrative form.

Inscrutable Symbols, Impossible Futures

Gilman and Hopkins construct brave new worlds in which distributive power systems are imagined to eradicate elements of gender or race discrimination. They also teach us that the literary history of the U.S. as a network society involves more than representations of light, power, and communications networks; such a history must account for bloodlines as well as

power lines, must consider the difficulty of mitigating between competing cultural fantasies about individualism, domesticity, and socialistic decentralization, and must recognize the tension between the wonder of black-boxed effects and the rational assurance that these effects are well-defined within scientific discourse. Both authors outline the promises and limitations of understanding human life in terms of interconnection rather than individuation. Even so, the Progressive Era fantasy of the democratizing power grid was constructed upon the residual fantasy of the spider at the center of the web—the hope that entire systems of human and technological interactions could still be manageable, in every sense of the word. The tension between the centralized and decentralized models of life in the electric age raised unanswerable questions about what electric networks *mean* for the twentieth century American. Figures like Gilman and Edison sought to overdetermine the meanings of electrical networks, to develop a stable symbolic system for navigating the electric age. Others relished the ambiguousness. For example, *Martin Eden* (1909), Jack London's masterpiece, captures the incongruity of the electric light when pictured alongside evidence of human atavisms: "Then they fell upon each other, like young bulls, in all the glory of youth, with naked fists, with hatred, with desire to hurt, to maim, to destroy. All the painful, thousand years' gains of man in his upward climb through creation were lost. Only the electric light remained, a milestone on the path of the great human adventure" (135). The light fails to represent the "upward climb through creation" because human life failed to live up to the dream of progress that the light was to embody.

By attending to such moments of difficulty and failure, we can see the cultural and literary significance of the more successful and coherent trends that emerge from such experimentations with the representations of networks. Masterworks, like Theodore Dreiser's *American Tragedy* and F. Scott Fitzgerald's *The Great Gatsby* (both published in 1925), center

around the failure of electrical symbols for their dubiously sympathetic but incredibly human protagonists. By shifting the focus from the network itself to the poor man who *nearly* rises in a network society, these novels develop a coherent aesthetic that evades Crane, London, and Gilman. Shortly thereafter, we begin to see more experimental prose that is organized much like the scattered and blinking illuminations of the networked city—works like John Dos Passos’s *USA*, which bring new approaches to narratives of the network society.²⁷

Nonetheless, as these literary experiments tinker with the potential meanings and applications of electricity, and as electric networks evolve into global systems of networked information, authors continue to grapple with these conceptual problems today. After Dos Passos, writers ranging from Ralph Ellison through Thomas Pynchon, David Foster Wallace, and Richard Powers continue to try to capture the vast and varied components of networked life in new, beautiful, and thought-provoking ways. In Richard Powers’s *The Echomaker* (2006), for example, the neurologist-turned-writer Dr. Weber expresses a frustration with the limitations of our technological analogies for describing human interiority: “He knew the drill: throughout history, the brain had been compared to the highest prevailing level of technology: steam engine, telephone switchboard, computer. Now, as Weber approached his own professional zenith, the brain became the Internet, a distributed network, more than two hundred modules in loose, mutually modifying chatter with other modules. Some of Weber’s tangled subsystems bought the model; others wanted more” (190). In this passage, Powers describes two desires that have long and complex literary histories: the desire to use metaphors drawn from cutting-edge technologies to understand our selves and our social networks, *and* the desire to find “more”—an excess to the human that evades any technological comparison.

The literary and cultural history that I examine in this dissertation lends context to such literary endeavors, from the realism of Atherton through the postmodernism of Powers, and it allows us to understand the historical resonances of our own, twenty-first century fantasies of decentralization (represented by the promise of “cloud computing” and of endlessly accessible digitized libraries) and of control (represented by the personalized interface of consumer electronics and social networks). In so doing, this project seeks to capture the layers of history and ambiguity that are built into the rhetorics we use to understand our own “electric age.”

End Notes

¹ In the Gilded Age, L. Frank Baum’s *The Master Key* (1901) and Bellamy’s *Looking Backward* illustrate the breadth of this subgenre. Baum depicts an electrical current giving life to an inanimate mess of wires and creating the “Demon of Electricity,” where Bellamy’s protagonist is simply awakened from an extreme state of suspended animation. Turn-of-the-century news articles about electric shock further elucidate this trend. “Electricity as a Death-dealing Agent” (1895), a *Times and Register* article, questions whether victims of electrocution “are simply shocked into a condition of suspended animation that slowly ends in real death,” and goes on to wonder “whether real death is produced by the shock of the pathologist’s knife” (9). Using the word “shock” to describe the autopsy knife, this account gruesomely implies that the doctors who attend electrocutions actually become the executioners. Hinting at the familiarity of the suspended animation question, a *Chicago Daily Tribune* headline, “Dead and Brought to Life Again” (1894), uses the electric chair as an analogy to describe seeming death: “A veteran of the war has been dead and is alive again. That is, he has been as dead as those men who are electrocuted in New York prisons” (11). In this article, the ‘reincarnated’ veteran has been struck

by lightning: “The bolt had struck Clothier in the breast, had passed down through his body, through the horse [he was riding], and into the ground. He was as thoroughly killed apparently as any man ever was” (11)—until a mysterious doctor massages the corpse’s body and he reawakens. For more examples of this trend, see: “Suspended Animation Suspected,” *New York Times* (Jan 8, 1893): 16; “Mrs. Lantz Alive or Dead?” *New York Times* (Jan 28, 1899): 1.

² Gilman’s depictions of an electric social consciousness reflect the convergence of bodily and technological discourses in Gilded Age America, much in the way that Laura Otis and Mark Seltzer discuss. Yet Gilman’s texts operate on multiple levels—she describes material assemblages of bodies and electrical networks while blending organic and electrical metaphors. In some cases, she describes actual power distribution systems revitalizing American landscapes and citizens; in other cases, she uses electricity as a symbol for, rather than a cause of, individual health. Indeed, electricity is so closely associated with physical and psychological health in Gilman’s work that it might be seen as a synecdoche for health itself.

³ For more on the Hopkins’s depictions of neurasthenia and revitalization, see Schragar, 188.

⁴ Although my reading is informed by my understanding of Hopkins as a radical critic of white (literary and political) culture, I focus on what this novel might suggest about electric networks in the American literary imagination, rather than weighing in on larger political debates about Hopkins intentions, successes, or failures as a radical cultural critic. Recent critics like Samuel Otten and Lois Brown have suggested that her generic play challenged the aesthetics of literary realism promoted by white elites in the *Atlantic* group.

⁵ The dates of the discovery of the Baghdad battery are contested, but the device was widely publicized by 1938. In a recent article, Ed Lake juxtaposes the Baghdad battery with a 1901 discovery of ancient Greek pottery fragments that contained gears (22). Given this timeline, it is

plausible that Hopkins might have legitimately imagined Meroe to be the site of ancient technological marvels, though it is more likely that her technological descriptors reappropriate technological fantasies from the popular adventure fiction of her time.

⁶ See also, Schrager, 188.

⁷ The narrator depicts Reuel's origin as a mystery, noting that some thought "he was of Italian birth, then they 'guessed' he was Japanese" (444).

⁸ Note also that "The Hidden Self" is the subtitle to the novel *Of One Blood*.

⁹ James goes farther than this in "The Hidden Self," explicitly criticizing scientists for their elitism: "The Hidden Self" argues scientists that modern scientists are detrimentally elitist: "It always gives us ['college-bred gentry'] a little shock to find this mass of human beings not only living and ignoring us and all our gods, but actually reading and writing and cogitating without ever a thought of our canons, standards, and authorities" ("Hidden Self" 362).

¹⁰ James describes electromagnetic implements as the media through which researchers can access different mental states of patients with multiple personalities: "It has been recently found that magnets, plates of metal, the electrodes of a battery, placed against the skin, have this peculiar power. Whether these strange effects of magnets and metals be due to their direct physiological action, or to a prior effect on the patient's mind ('expectant attention' or 'suggestion') is still a mooted question" ("Hidden Self" 364). Hopkins's excerpts omit this discussion of technological apparatuses.

¹¹ Paralleling Dr. Frankenstein, Reuel recreates life; but he corrupts his own miraculous feat by choosing to withhold Dianthe's true identity. By forcing her to pass, Reuel forces her into a vulnerable position in which she unknowingly marries one brother and falls prey to the lascivious whims of the other. However, unlike Frankenstein who runs from the life he creates,

Reuel is compelled to behave in this way by the residue of race prejudice. For more on the Black Frankenstein metaphor in American literature and culture, see Elizabeth Young, *Black Frankenstein: The Making of an American Metaphor* (2008). *Black Frankenstein* does not discuss *Of One Blood*, but it does lend context to such revitalization scenes in African American letters.

¹² Many contemporaneous utopias, such as H. Rider Haggard's *King Solomon's Mines* (1885) and Edgar Rice Burroughs's *The Gods of Mars* (1918) imagined discovering new cities, either in Africa or on other planets, and electricity conventionally played a major role in these science fictions.

¹³ Meroe can alternately be spelled Meroë.

¹⁴ Although Gilman had connections to Steinmetz through the *New Review*, and had undoubtedly heard of Thomas Edison, it is likely that the rhetorical similarities between the utopian writings of these figures follows from a shared intellectual antecedent, such as Claude Henri de Saint-Simon. On Saint-Simon and "the cult of the network," see Mattelart, 85-111.

¹⁵ Here Gilman plays on the word "short" to link the length and the viability of a circuit. In her formulation, an optimally efficient circuit links a large number of individual human batteries to one another. A human battery that is not sufficiently linked cannot function healthily (it "short circuits").

¹⁶ Electromagnetism is the only physical theory that concerns attraction and repulsion.

¹⁷ For more on Gilman's electrical and organic metaphors, and specifically on her use of neurological imagery, see Thrailkill, 125-135.

¹⁸ Gilman makes this claim four times, on p. 38, 169, 201 and 220.

¹⁹ Gilman rearticulates this point more clearly when she argues that “man’s spiritual nature manifests itself through material things, and grows by means of them” (*Human Work* 161). For more on Gilman’s developmentalism, see Ahmad, 49-65. For a discussion of how developmentalist thought inflected late-nineteenth-century U.S. culture more generally, see Lears, 4-31.

²⁰ Provocatively, Gilman’s rhetoric parallels the social theories of electrical experimenters such as electrical engineer and socialist Charles Steinmetz. Steinmetz’s treatise, *America and the New Epoch* (1916), suggests that the age of individualism is coming to an end, as an age of specialization and interdependence emerges through the growth of corporations.

²¹ Gilman positions herself against Whitman and the movement that American literary scholars identify as naturalism today. See *Human Work*, 102 – 103.

²² This energy is related, but not equivalent, to systemic or psychological health. The narrator notes that the process of “freeing so much productive energy [...] has improved [human] health, too” (*Moving the Mountain* 97).

²³ Notably, 14 years after Gilman published *Moving the Mountain*, the Electrical Association for Women—located in London—began to lobby for safer electrical regulations in their homes, much like this utopia foresaw. For a useful account of this movement in England, see Pursell, 47-8. Many of the publications of the Electrical Association for Women are held at the Bakken Library and Museum in Minneapolis, MN.

²⁴ Incandescent light bulbs were first made to look like flickering gas lamps, for example. See Schivelbusch, 60-64.

²⁵ For a useful discussion on the relationship between General Electric and Steinmetz’s socialist politics, see Jordan, “‘Society Improved the Way You Can Improve a Dynamo’: Charles P.

Steinmetz and the Politics of Efficiency,” 57-82.

²⁶ On the technological utopia and “the cult of efficiency” see Segal, 21 – 32.

²⁷ These authors, like the authors I examine most closely in this dissertation, were also influenced by conversations with and about electrical technologists. Early in his career, while he was still a journalist, Dreiser interviewed Edison, for example, and Dos Passos wrote a brilliant tract against the use of the electric chair.

References

- Abbott, Carl. *Frontiers Past and Future: Science Fiction and the American West*. Lawrence, KS: University Press of Kansas, 2006.
- Adams, Henry. *The Education of Henry Adams*. Ed. Ernest Samuels Ed. Boston: Houghton Mifflin, 1973.
- Adas, Michael. *Machines as the Measure of Men: Science, Technology, and Ideologies of Western Dominance*. Ithaca, NY: Cornell Press, 1990.
- . "The Aguilar Free Library." *New York Times* 5 Jul. 1896: 2.
- Ahmad, Dohra. *Landscapes of Hope: Anti-colonial Utopianism in America*. Oxford: Oxford University Press, 2009.
- . "Almost Killed by an Electric Shock." *Chicago Daily Tribune* 30 Jul. 1889: 1.
- Ammons, Elizabeth. *Conflicting Stories: American Women Writers at the Turn into the Twentieth Century*. New York: Oxford UP, 2002.
- Armstrong, Tim. *Modernism, Technology, and the Body: A Cultural Study*. Cambridge University Press, 1998.
- Atherton, Gertrude. *Adventures of a Novelist*. New York: Liveright, Inc., 1932.
- Atherton, Gertrude Franklin Horn. *Black Oxen*. New York: Boni And Liveright, 1923.
- Atherton, Gertrude. *Patience Sparhawk and Her Times*. 1897. Rpt. New York: Macmillan Company, 1908.
- Auerbach, Jonathan. *Male Call: Becoming Jack London*. Durham, Duke University Press, 1996.
- Banner, Stuart. *The Death Penalty: An American History*. Cambridge: Harvard University Press, 2002.
- Barnes, Elizabeth. "Communicable Violence and the Problem of Capital Punishment in New England, 1830-1890." *Modern Language Studies* 20.1 (Spring 2000): 7-26.
- Baum, L. Frank. *The Master Key: an Electrical Fairy Tale*. Indianapolis: Bowen-Merrill Co., 1901.
- Bazerman, Charles. *The Languages of Edison's Light*. Cambridge: MIT Press, 1999.

- Beard, George Miller. *American Nervousness: Its Causes and Consequences*. New York: G.P. Putnam's Sons, 1881.
- Beard, George Miller. "Experiments with Living Human Beings." *Popular Science Monthly* Mar. 1879: 611-757.
- Bedau, Hugo Adam. "An Abolitionist's Survey of the Death Penalty in America Today." *Debating the Death Penalty: Should America Have Capital Punishment? The Experts on Both Sides Make Their Case*. Eds. Hugo Adam Bedau and Paul G. Cassel. New York: Oxford University Press, 2004.
- Bell, Michael Davitt. *The Problem of American Realism: Studies in the Cultural History of a Literary Idea*. Chicago: University of Chicago Press, 1993.
- Bellamy, Edward. *Looking Backward: 2000-1887*. Intr. Walter James Miller. New York: Penguin Putnam Inc., 2000.
- Bentley, Nancy. *Frantic Panoramas: American Literature and Mass Culture, 1870-1920*. Philadelphia: University of Pennsylvania Press, 2009.
- Berwick, Edward. "Farming in the Year 2000." *Overland monthly and Out West Magazine* 15.90 (Jun. 1890): 569 – 573.
- Boudreau, Kristin. *The Spectacle Of Death: Populist Literary Responses To American Capital Cases*. Amherst, N.Y.: Prometheus Books, 2006.
- Brandon, Craig. *The Electric Chair: An Unnatural American History*. New York: McFarland & Company, 1999.
- Brock, Alvan D. "The Supplanting of Steam." *Overland Monthly and Out West Magazine* 14.82 (Oct. 1889): 396 – 409.
- Brock, Alvan D. "The Whispering Telephone." *Overland Monthly and Out West Magazine* 16.92 (Aug. 1890): 122 – 126.
- Brown, Lois. *Pauline Elizabeth Hopkins: Black Daughter of the Revolution*. Chapel Hill: University of North Carolina Press, 2008.
- Burroughs, Edgar Rice. *The Gods of Mars*. Chicago: A.C. McClurg & Co., 1918.
- Cahan, David and M. Eugene Rudd. *Science at the American Frontier: A Biography of DeWitt Bristol Brace*. Lincoln: University of Nebraska Press, 2000.
- Camfield, Gregg. *Sentimental Twain: Samuel Clemens in the Maze of Moral Philosophy*. Philadelphia: University of Pennsylvania Press, 1994.

- . "Capital Punishment." *New York Times*. 17 Dec. 1887: 4.
- Carey, James W. *Communication as Culture: Essays on Media and Society*. Boston: Unwin Hyman, 1989.
- . "Carlyle W. Harris is Dead." *New York Times* 9 May 1893: 8.
- Castells, Manuel. *The Rise of the Network Society*. 2nd ed. Oxford: Blackwell Publishing Inc., 2010.
- . "Catelectrize Versus Electrocute." *Chicago Daily Tribune* 3 Aug. 1891: 10.
- Chalfant, Edward. *Improvement of the World: A Biography of Henry Adams, 1891-1918*. North Haven, CT: Archon Books, 2001.
- Clarke, Bruce. *Energy Forms: Allegory and Science in the Era of Classical Thermodynamics*. Ann Arbor: University of Michigan Press, 2001.
- Conquergood, Dwight. "Lethal Theatre: Performance, Punishment, and the Death Penalty." *Theatre Journal* 54.3 (October 2002): 339-367.
- . "Corsets Not in the Way: Women Indulge in Practical Electrical Experiments," *Chicago Daily* 27 Apr. 1896: 3.
- Cox, James M. "A Connecticut Yankee in King Arthur's Court: The Machinery of Self-Preservation." *The Yale Review* 50 (1960): 89-102.
- Crane, Stephen. "The Devil's Acre." *The World* 25 Oct 1896: 23.
- Crane, Stephen. "The Monster." *The Monster and Other Stories*. New York: Harper and Brothers, 1899.
- Cummings, Sherwood. *Mark Twain and Science: Adventures of a Mind*. Baton Rouge: Louisiana State University Press, 1988.
- Dauphin, Laurent. "The Valley of the Moon: A Reassessment." *The Critical Response to Jack London*. Ed. Susan M. Nuernberg. Westport, CT: Greenwood Press, 1995: 194 – 200.
- . "Day Fatal to Tots." *Chicago Daily Tribune* 12 Oct. 1897: 5.
- . "Dead and Brought to Life Again." *Chicago Daily Tribune* 19 Dec. 1894: 11.
- DeLanda, Manuel. *A New Philosophy of Society: Assemblage Theory and Social Complexity*. New York: Continuum Books, 2006.

Delbourgo, James. *A Most Amazing Scene of Wonders: Electricity and Enlightenment in Early America*. Cambridge: Harvard University Press, 2006.

Deleuze, Gilles and Félix Guattari. *A Thousand Plateaus*. Trans. Brian Massumi. Minneapolis, University of Minnesota Press, 1987.

Denning, Michael. *Mechanic Accents: Dime Novels and Working-Class Culture in America*. Rev. Ed. New York: Verso, 1998.

---. "Developments in the West." *The Electrical Age* 10 Jul 1897: 23.

Downey, Greg. "Virtual Webs, Physical Technologies, Hidden Workers: The Spaces of Labor in Information Internetworks." *Technology and Culture* 42:2 (2001): 209-235.

Doyle, Arthur Conan. "The Los Amigos Fiasco." *Round the Red Lamp: Being Facts and Fancies of Medical Life, 3rd Edition*. New York: D. Appleton and Co., 1895: 263 – 275.

Dreiser, Theodore. *An American Tragedy*. New York: Boni And Liveright, 1925.

Edison, Thomas Alva. "Electricity Man's Slave." *Scientific American* 21 Mar 1885: 185.

---. "Edisonade." *The Encyclopedia of Science Fiction*. Eds. John Clute and Peter Nicholls. New York: St. Martin's Griffin, 1995: 369.

Electric Execution Act of 1888, Chapter 489 of the Laws of the State of New York.

---. "Electric Lighting in New York: Supplement." *Harper's Weekly* 27 Jul 1889: 601-604.

Haslett, Caroline. *The Electrical Handbook for Women*. Ed. Electrical Association for Women. London, Hodder & Stoughton, 1934. Bakken Library and Museum. Minneapolis, MN.

---. "Electrical Resistance." *New York Times* 16 Jul. 1882: 4.

---. "Electricity as a Death-Dealing Agent." *Times and Register* 6 Jul. 1895: 9.

---. "Electrocuted." *The National Police Gazette* 23 Aug. 1890: 6.

---. "Electrocution." *The Youth's Companion* 18 May 1899: 25.

---. "Elektramort." *Chicago Daily Tribune* 28 Jul. 1891: 12.

Ellis, Edward S. *The Steam Man of the Prairies*. New York: American Novels Publishing, 1868.

Elmer, Jonathan. *Reading at the Social Limit: Affect, Mass Culture, and Edgar Allan Poe*.

- Stanford: Stanford University Press, 1995.
- “The Epic of the Advanced Woman.” *The Chap - Book; Semi - Monthly. A Miscellany & Review of Belles Lettres* 15 Apr. 1897: 444.
- Essig, Mark. *Edison and the Electric Chair: A Story of Light and Death*. New York: Walker and Co., 2003.
- Etulian, Richard W. *Re-Imagining the Modern American West: A Century of Fiction, History, and Art*. Tuscon: University of Arizona Press, 1996.
- . “Faraday Cable.” *The Electrical World* XIII (1890): back matter. Smithsonian Libraries Research Annex. Landover, Maryland.
- Farney, Henry. *The Song of the Talking Wire*. Taft Museum. Cincinnati, OH.
- Fleissner, Jennifer. *Women, Compulsion, Modernity: The Moment of American Naturalism*. Chicago: University of Chicago Press, 2004.
- Folsom, James K. “Imaginative Safety Valves: Frontier Themes in the Literature of the Gilded Age.” *The Frontier Experience and the American Dream: Essays on American Literature*. Eds. David Mogen, Mark Busby, and Paul Bryant. College Station: Texas A&M University Press, 1989.
- Foote, Mary Hallock. “The Harshaw Bride.” *A Touch of Sun and Other Stories*. New York: Houghton, Mifflin and Company, 1903: 179-273.
- Foote, Mary Hallock. *John Bodewin’s Testimony*. Boston: Ticknor and Company, 1886.
- Foucault, Michel. *Discipline And Punish: The Birth Of The Prison*. New York: Vintage Books, 1995.
- Franklin, Benjamin. *The Autobiography of Benjamin Franklin*. New York: American Book Company, 1896.
- Franklin, Benjamin. *Experiments and Observations on Electricity*. London: E. Cave at St. John's Gate, 1751.
- Franklin, H. Bruce. “Billy Budd and Capital Punishment: A Tale of Three Centuries.” *American Literature* 69.2 (Jun. 1997): 337-340.
- Franklin, H. Bruce. *Future Perfect: American Science Fiction of the Nineteenth Century*. New York: Oxford University Press, 1978.

- Franklin, H. Bruce. "Traveling in Time with Mark Twain." *American Literature and Science*. Ed. Robert J. Scholnick. Lexington: University Press of Kentucky, 1992: 157-171
- . "Friday August 7, 1891." *Chicago Daily Tribune* 7 Aug. 1891: 4.
- Fuller, Margaret. *Woman in the Nineteenth Century*. New York: Greely and McElrath, 1845.
- Gair, Christopher Hugh. "'The Way Our People Came': Citizenship, Capitalism, and Racial Difference in *The Valley of the Moon*." *Rereading Jack London*. Eds. Leonard Cassuto and Jeanne Campbell Reesman. Stanford: Stanford University Press, 1996:141 – 157.
- Galvani, Luigi. *Commentary on the Effects of Electricity on Muscular Motion*. Norwalk, CT: Burndy Library, 1953.
- Gannett, Henry. "Electric Peak." *Sixth Annual Report of the United States Geological Survey of the Territories, Embracing Portions of Montana, Idaho, Wyoming, and Utah; Being a Report of Progress of the Explorations for the Year 1872*. Ed. F. V. Hayden. Conducted under the Authority of the Secretary of the Interior. Washington: Government Printing Office, 1873.
- Gardiner, Jane. "'A More Splendid Necromancy': Mark Twain's *Connecticut Yankee* and the Electrical Revolution." *Studies in the Novel* 19.4 (1987): 448-458.
- Gérard, Marguerite. *Au Génie de Franklin*. Philadelphia Museum of Art. Philadelphia, PA.
- Gerry, Elbridge T., Alfred P. Southwick, and Matthew Hale. *Report of the Commission to Investigate and Report the Most Humane and Practical Method of Carrying Into Effect the Sentence of Death in Capital Cases*. Albany: The Argus Company, Printers, 1888.
- Gilman, Charlotte Perkins. "Bee Wise." 1913. Rpt. in *Herland, the Yellow Wall-Paper, and Selected Writings*. Denise D. Knight, ed. New York, Penguin Books, 1999: 263 – 271.
- Gilman, Charlotte Perkins. *Concerning the Children*. Boston: Small, Maynard, & Company, 1901.
- Gilman, Charlotte Perkins. "Dr. Clair's Place." 1915. Rpt. in *Herland and Selected Stories*. Ed. Barbara H. Solomon. New York: Signet Classics, 1992: 318 – 326.
- Gilman, Charlotte Perkins. *Human Work*. New York: McClure, Phillips, & Co., 1903.
- Gilman, Charlotte Perkins. "Moving the Mountain." *Charlotte Perkins Gilman's Utopian Novels*. Ed. Minna Doskow. Madison: Farleigh Dickinson University Press, 1999: 37-149.

- Gilman, Charlotte Perkins. *The Living of Charlotte Perkins Gilman: An Autobiography*. New York: Arno Press, 1972.
- Gilman, Charlotte Perkins. *Women and Economics: a Study of the Economic Relation Between Men and Women as a Factor in Social Evolution*. Boston: Small, Maynard, & Company, 1898.
- Gilmore, Paul. *Aesthetic Materialism: Electricity and American Romanticism*. Stanford: Stanford University Press, 2008.
- Gitelman, Lisa. *Scripts, Grooves, and Writing Machines: Representing Technology in the Edison Era*. Stanford: Stanford University Press, 1999.
- Glazener, Nancy. *Reading For Realism: A History of a U.S. Literary Institution, 1850 – 1910*. Durham: Duke University Press, 1997.
- Goble, Mark. *Beautiful Circuits: Modernism and the Mediated Life*. New York: Columbia University Press, 2010.
- . "Got an Electric Shock." *New York Times* (2 Jul. 1890): 5.
- Haggard, H. Rider. *King Solomon's Mines*. London: Cassell & Company Limited, 1885.
- Halliday, Sam. "History, 'Civilization,' and A Connecticut Yankee in King Arthur's Court." *A Companion to Mark Twain*. Ed. Peter Messent and Louis J. Budd. Malden, MA: Blackwell Publishing Ltd, 2005: 416-430.
- Halliday, Sam. *Science and Technology in the Age of Hawthorne, Melville, Twain, and James: Thinking and Writing Electricity*. New York: Palgrave Macmillan, 2007.
- Hawthorne, Nathaniel. "The Birth-Mark." 1843. Rpt in *Mosses from an Old Manse*. Boston: Cambridge University Press, 1893: 42-63.
- Heinrichs, Charles. "Disnerving Instead of Electrocution." *Chicago Daily Tribune* 14 Aug. 1891: 10.
- Hopkins, Pauline. *Contending Forces: A Romance Illustrative of Negro Life North and South*. 1900. Rpt. *Contending Forces: A Romance Illustrative of Negro Life North and South*. Ed. Henry Louis Gates, Jr. New York: Oxford University Press, 1988.
- Hopkins, Pauline. *Hagar's Daughter: A Story of Southern Prejudice*. 1901-2. Rpt in *The Magazine Novels of Pauline Hopkins*. Ed. Henry Louis Gates, Jr. New York: Oxford University Press, 1988.
- Hopkins, Pauline. "Munroe Rodgers." *Colored American Magazine* November 1902: 20-1.

- Hopkins, Pauline. "The Mystery Within Us." *Colored Magazine*, May 1900. Reprinted in *Short Fiction by Black Women, 1900-1920*. Ed. Elizabeth Ammos. New York: Oxford University Press, 1991: 21-26.
- Hopkins, Pauline. *Of One Blood: Or, the Hidden Self*. 1902-3. Rpt. *The Magazine Novels of Pauline Hopkins*. Ed. Henry Louis Gates, Jr. New York: Oxford University Press, 1988.
- Hopkins, Pauline. *Winona: A Tale of Negro Life in the South and Southwest*. 1902. Rpt. in *The Magazine Novels of Pauline Hopkins*. Ed. Henry Louis Gates, Jr. New York: Oxford University Press, 1988.
- Horne, Alistair. *The Fall of Paris: The Siege and the Commune 1870-1871*. New York: St. Martin's Press, 1965.
- Houston, Edwin J. *Dictionary of Electrical Words, Terms, and Phrases*. New York: The W. J. Johnston Co., 1889.
- Howells, William Dean. "Execution by Electricity" *Harper's Weekly* 14 Jan. 1888: 23.
- Howells, William Dean. *My Mark Twain: Reminiscences and Criticisms*. Baton Rouge: Louisiana State University Press, 1967.
- Howells, William Dean. "State Manslaughter." *Harper's Weekly* 6 Feb. 1904: 196-198.
- Howells, William Dean. *Through The Eye of The Needle: A Romance*. New York: Harper & Brothers, 1907.
- Hughes, Thomas Parke. *Networks of Power: Electrification in Western Society, 1880-1930*. Baltimore: Johns Hopkins University Press, 1983.
- Hughes, Thomas P. "The Industrial Revolution that Never Came." *American Heritage of Invention and Technology* 3 (Winter 1988): 58 – 64.
- In Re Kemmler, 136 U.S. 436. U.S. Supreme Court. Decided 23 May 1890.
- James, George Wharton. *The Wonders of the Colorado Desert*. Boston: Little, Brown, and Co., 1906.
- James, William. "The Hidden Self." *Scribner's Magazine* 7.3 (Mar. 1890): 361-374.
- James, William. *On Vital Reserves: The Energies of Men. The Gospel of Relaxation*. New York: H. Holt, 1911.
- Jefferson, Thomas. *Notes on the State Of Virginia*. Philadelphia : Prichard And Hall, 1788.

- Johns, J. Adam. *The Assault on Progress: Technology and Time in American Literature*. Tuscaloosa: The University of Alabama Press, 2008.
- Johnson, Michael L. *Hunger for the Wild: America's Obsession with the Untamed West*. Lawrence, KS: University Press of Kansas, 2007.
- Jordan, Elizabeth G. "Ruth Herrick's Assignment." *Tales of the City Room*. New York: Scribner's, 1898: 3-29.
- Jordan, John M. *Machine-Age Ideology: Social Engineering and American Liberalism, 1911-1939*. Chapel Hill: University of North Carolina Press, 1994.
- Jordan, John M. "'Society Improved the Way You Can Improve a Dynamo': Charles P. Steinmetz and the Politics of Efficiency." *Technology and Culture* 30.1 (Jan. 1989): 57-82.
- . "Kemmler's Death Chamber: How the Electric Current Is to Be Transmitted to His Body." *New York Times* 26 Apr. 1890: 2
- . "The Kemmler Execution." *Chicago Daily Tribune* 8 Aug. 1890: 4
- . "Killed by an Electric Shock: from the *Buffalo Commercial Advertiser*, Aug. 8." *New York Times* 11 Aug. 1881: 5.
- . "Killed by an Electric Shock." *New York Times* 17 Sep. 1891: 8.
- Kipling, Rudyard. "Wireless." *Traffics and Discoveries: The Writings in Prose and Verse of Rudyard Kipling*. New York: Charles Scribner's Sons, 1904: 239-268.
- Kittler, Friedrich A. *Discourse Networks 1800/1900*. Trans. Michael Metteer. Stanford: Stanford University Press, 1990.
- Knoper, Randall. *Acting Naturally: Mark Twain in the Culture of Performance*. Berkeley: University of California Press, 1995.
- Kuhn, Thomas. *The Structure of Scientific Revolutions*. Chicago : University of Chicago Press, 1962.
- Lake, Ed. "Decoding the Heavens: Solving the Mystery of the World's First Computer by Jo Marchant – review." *The Telegraph* 8 Jan. 2009: 22.
- Latour, Bruno. *Reassembling the Social: An Introduction to Actor-Network-Theory*. Oxford: Oxford University Press, 2005.

- Latour, Bruno. *We Have Never Been Modern*. Cambridge: Harvard University Press, 1993.
- Lauber, John. *The Inventions of Mark Twain*. New York: Hill and Wang, 1990.
- Lawlor, Mary. *Recalling the Wild: Naturalism and the Closing of the American West*. New Brunswick: Rutgers University Press, 2000.
- Layton, Edwin T, Jr. "Engineers in Revolt." *Technology and Social Change in America*. Ed. Edwin T. Layton, Jr. New York: Harper & Row, 1973: 147-155.
- Lears, T.J. Jackson. *No Place of Grace: Antimodernism and the Transformation of American Culture*. New York: Pantheon Books, 1981.
- Leider, Emily Wortis. *California's Daughter: Gertrude Atherton and Her Times*. Stanford: Stanford University Press, 1993.
- Lerer, Seth. "Hello, Dude: Philology, Performance, and Technology in Mark Twain's Connecticut Yankee." *American Literary History* 15.3 (Fall 2003): 471-503.
- . "Literature." *The Critic: a Weekly Review of Literature and the Arts* 24 Apr. 1897: 283.
- Lombroso, Cesare and Guglielmo Ferrero. *Criminal Woman, the Prostitute, and the Normal Woman*. Trans. Nicole Hahn Rafter and Mary Gibson. Durham: Duke University Press, 2004.
- London, Jack. *Burning Daylight*. New York: The Macmillan Company, 1910.
- London, Jack. "The Dream of Debs" and "South of the Slot." *The Strength of the Strong*. New York: The Macmillan Company, 1914.
- London, Jack. *John Barleycorn*. New York: The Century Co., 1913.
- London, Jack. *Martin Eden*. New York: The Review of Reviews Company, 1909.
- London, Jack. *The Valley of the Moon*. New York: The Macmillan Company, 1913.
- Lutes, Jean Marie. *Front Page Girls: Women Journalists in American Culture and Fiction, 1880-1930*. Cornell University Press, 2007.
- MacDonald, Carlos D. "Report of Carlos F. MacDonald on the Execution by Electricity of William Kemmler, Alias John Hart. Presented to the Governor September 20, 1890." Albany: The Argus Company, Printers, 1890.

- MacDougall, Robert. "The Wire Devils: Pulp Thrillers, the Telephone, and Action at a Distance in the Wiring of a Nation." *American Quarterly* 58.3 (Sept 2006): 715-741.
- Marshall, Edward. "The Woman of the Future: an Interview with Thomas Edison." October 1912. Rpt. in *The Good housekeeping treasury: Selected from the Complete Files*. New York: Simon and Schuster, 1960: 95-99.
- Marvin, Carolyn. *When Old Technologies Were New: Thinking About Electric Communication in the Late Nineteenth Century*. New York: Oxford University Press, 1988.
- Marx, Leo. *The Machine in the Garden: Technology and the Pastoral Ideal in America*. New York: Oxford University Press, 1964.
- Mattelart, Armand. *The Invention of Communication*. Trans. Susan Emanuel. Minneapolis, University of Minnesota Press, 1996.
- Maxwell, James Clerk. *A Treatise on Electricity and Magnetism*. Oxford: Clarendon Press, 1873.
- McLuhan, Marshall. *Understanding Media: the Extensions of Man*. New York: McGraw-Hill, 1964.
- . "The Merger of East and West." American Telephone and Telegraph Company, 1913. N.W. Ayer Collection, National Museum of American History Archives Center. Washington, D.C.
- Michelson, Bruce. *Printer's Devil: Mark Twain and the American Publishing Revolution*. Berkeley: University of California Press, 2006.
- Miller, Darlis A. *Mary Hallock Foote: Author-Illustrator of the American West*. Norman, OK: University of Oklahoma Press, 2002.
- Mirowski, Philip. *More Heat than Light: Economics as Social Physics, Physics as Nature's Economics*. New York: Cambridge University Press, 1991.
- Moran, Richard. *Executioner's Current: Thomas Edison, George Westinghouse, and the Invention of the Electric Chair*. New York: Vintage, 2003.
- . "Mrs. Lantz Alive or Dead?" *New York Times* 28 Jan. 1899: 1.
- Muir, John. *Our National Parks*. Boston: Houghton, Mifflin And Company, 1901.
- Mumford, Lewis. *Technics and Civilization*. New York: Harcourt, Brace & World, 1963.

- Naito, Jonathan Tadashi. "Cruel and Unusual Light: Electricity and Effacement in Stephen Crane's *The Monster*." *Arizona Quarterly: A Journal of American Literature, Culture, and Theory* 62.1 (Spring 2006): 35-63.
- Nast, Thomas. "All on Account of the Telephone." *Harper's Weekly* 27 Feb 1886: 135.
- The National College of Electro-Therapeutics. *A Series of Thirty Lessons in Electro-Therapeutics*. Lima, Ohio. ci006-07. Bakken Library and Museum. Minneapolis, MN.
- . "Nature of Electricity." *The Youth's Companion* 61.6 (9 Feb 1888): 70.
- Nelson, Marie. "The Authority of the Spoken Word: Speech Acts in Mark Twain's *A Connecticut Yankee in King Arthur's Court*." *Oral Tradition* 23.1 (Mar 2008): 28-42.
- Neustadter, Roger. "The Death Penalty in the Industrial Age." *Journal of American Culture* 12.3 (Fall 1989): 79-87.
- . "New Woman in Science," *Chicago Daily Tribune* 23 Apr. 1899: 46.
- Nurhussein, Nadia. "'The Hand of Mysticism': Ethiopianist Writing in Pauline Hopkins's *Of One Blood* and the *Colored American Magazine*." *Callaloo* 33.1 (Winter 2010): 278-289.
- Nye, David. *Electrifying America: Social Meanings of a New Technology, 1880-1940*. Cambridge: MIT University Press, 1992.
- Nye, David. *Narratives and Spaces: Technology and the Construction of American Culture*. New York: Columbia University Press, 1997.
- Oldenziel, Ruth. "Multiple Entry Visas: Gender and Engineering in the US, 1870-1945." *Crossing Boundaries, Building Bridges*. Eds. Annie Canel, Ruth Oldenziel, and Karin Zachman. Harwood Academic Publishing, 2000.
- Otis, Laura. *Networking: Communicating with Bodies and Machines in the Nineteenth Century*. Ann Arbor: University of Michigan Press, 2001.
- Otten, Thomas J. "Pauline Hopkins and the Hidden Self of Race." *ELH* 59.1 (Spring 1992): 227-56.
- . "Patience Sparhawk and Her Times." *The Dial: A Semi-monthly Journal of Literary Criticism, Discussion and Information* 1 Oct. 1897: 170.
- Payne, William Morton. "Recent Fictions." *The Dial* 16 Nov. 1910: 384.
- Peña, Carolyn Thomas de la. *The Body Electric: How Strange Machines Built the Modern American*. New York University Press: 2003.

- Peyster, Thomas. *Utopia & Cosmopolis: Globalization in the Era of American Literary Realism*. Durham: Duke University Press, 1998.
- Pfitzer, Gregory M. "‘Iron Dudes and White Savages in Camelot’: The Influence of Dime-Novel Sensationalism on Twain’s *A Connecticut Yankee in King Arthur’s Court*." *American Literary Realism* 27.1 (Fall 1994): 42-58
- Poe, Edgar Allan. "Some Words with a Mummy." *Complete Tales and Poems of Edgar Allan Poe*. New York: Vintage Books, 1975: 535-548.
- Pursell, Caroll. "Domesticating Modernity: The Electrical Association for Women, 1924-86." *The British Journal for the History of Science* 32.1 (Mar. 1999): 47-67.
- Randolph, Mrs. M.E. and John B. Taltavall. "Women’s Chances as Bread-Winners: XIII – Women as Telegraphers." *Ladies’ Home Journal* Jul. 1892: 6.
- Revision of the Patent Law Proposed by the National Electric Light Association*. Baltimore: William K. Boyle & Son, Printers, 1887. Smithsonian Institution’s Dibner Library. Washington, D.C.
- Rockwell, Alphonso David. *Rambling Recollections: An Autobiography*. New York: Paul B. Hoeber, 1920. Bakken Library and Museum. Minneapolis, MN.
- Roemer, Kenneth. *The Obsolete Necessity: American Utopian Writings, 1888-1900*. Kent: Kent State University Press, 1976.
- Roggenkamp, Karen. *Narrating The News: New Journalism And Literary Genre in Late Nineteenth-Century American Newspapers And Fiction*. Kent, OH: Kent State University Press, 2005.
- Rooney, Charles J. *Dreams and Visions: A Study of American Utopias, 1865-1917*. Westport, CT: Greenwood Press, 1985.
- Roosevelt, Theodore. *The Strenuous Life: Essays and Addresses*. New York: Century, 1902.
- Ruiz de Burton, María Amparo. *The Squatter and the Don*. 1885. Rpt. Eds. Rosaura Sánchez and Beatrice Pita. Houston: Arte Público Press, 1997.
- Salomon, Roger B. *Twain and the Image of History*. New Haven: Yale University Press, 1961.
- Sarat, Austin. *When the State Kills: Capital Punishment and the American Condition*. Princeton, NJ: Princeton University Press, 2001.

- Schivelbusch, Wolfgang. *Disenchanted Night: the Industrialization of Light in the Nineteenth Century*. Trans. Angela Davies. Berkeley : University of California Press, 1988.
- Schrager, Cynthia D. "Pauline Hopkins and William James: The New Psychology and the Politics of Race." *The Unruly Voice: Rediscovering Pauline Elizabeth Hopkins*. Ed. John Cullen Gruesser. Urbana: University of Illinois Press 1996: 182-209.
- Segal, Howard P. *Technological Utopianism in American Culture*. Chicago: University of Chicago Press, 1985.
- Seltzer, Mark. *Bodies and Machines*. New York: Routledge, 1992.
- Shelley, Mary Wollstonecraft. *Frankenstein: Or, the Modern Prometheus*. London: Dent, 1818.
- Shulman, Robert. "The War Machine in the Garden: Capitalism, Republicanism, and Protestant Character Structure in *A Connecticut Yankee*," *Social Criticism and Nineteenth-Century American Fictions*. Columbia: University of Missouri Press, 1987: 144-170.
- Steinbrink, Jeffrey. "Mark Twain's Mechanical Marvels." *Constructing Mark Twain: New Directions in Scholarship*. Eds. Laura E. Skandera Trombley and Michael J. Kiskis. Columbia: University of Missouri Press, 2001: 72-86.
- Steinmetz, Charles Proteus. *America and the New Epoch*. New York: Harper & Brothers, 1916.
- . "Storing Electrical Heat." *Popular Electricity: In Plain English* May 1909: 785.
- . "Suspended Animation Suspected." *New York Times* 8 Jan. 1893: 16.
- "A Telephone Unites the Nation." American Telephone and Telegraph Company, 1915. N.W. Ayer Collection, National Museum of American History Archives Center. Washington, D.C.
- Tenney, W. A. "Evolution of the Northwest." *Overland Monthly and Out West Magazine* 35.208 (Apr. 1900): 321 – 332.
- Thraillkill, Jane. *Affecting Fictions: Mind, Body, and Emotion in American Literary Realism*. Cambridge: Harvard University Press, 2007.
- Tichi, Cecilia. *Shifting Gears: Technology, Literature, Culture in Modernist America*. Chapel Hill: University of North Carolina Press, 1987.
- Toombs, Robert T. "Electric Bob's Sea Cat: the Daring Invasion of Death Valley," *Brave and Bold: A Different Complete Story Every Week*. Washington DC: Street and Smith, 1905.
- . "Topics of the Times," *New York Times* 15 May 1898: 18.

- . "Touching the Button," *The Independent* 11 May 1893: 10.
- Trachtenberg, Alan. *The Incorporation of America: Culture and Society in the Gilded Age*. Ed. Eric Foner. New York: Hill and Wang, 1982.
- . "The Transmission Systems of the Great West." *The Electrical World* 59.22 (1 Jun. 1912): 1142 – 1143.
- Treadwell, Sophie. *Machinal*. 1928. Rpt. London: Nick Hern Books, 1995.
- Trowbridge, John. *The Electrical Boy, Or, the Career of Greatman and Greatthings*. Boston : Roberts Bros., 1891.
- Trowbridge, John. *Three Boys on an Electrical Boat*. Cambridge: Riverside Press, 1894.
- Turner, Frederick Jackson. "The Significance of the Frontier in American History." *The Frontier in American History*. New York: Henry Holt and Company, 1921.
- Twain, Mark. *A Connecticut Yankee in King Arthur's Court*. 1889. Ed. Shelley Fisher Fishkin. New York: Oxford University Press, 1996.
- Twain, Mark. "The Late Benjamin Franklin." *The Galaxy: A Magazine of Entertaining Reading* Jul 1870: 138.
- Twain, Mark. "The Loves Of Alonzo Fitz Clarence And Rosannah Ethelton." *The Complete Short Stories of Mark Twain*. New York: Hanover House, 1957: 92-104
- Twain, Mark. *Mark Twain's Letters: Arranged with Comments by Albert Bigelow Paine, Vol. II*. Ed. Albert Bigelow Paine. New York: Harper Brothers, 1917.
- Twain, Mark. *Mark Twain's Notebooks & Journals: Vol. III*. Eds. Robert Pack Browning, Michael B. Frank, and Lin Salama. Berkeley: University of California Press, 1979.
- Twain, Mark. *Mark Twain's Travels with Mr. Brown*. New York: Alfred A. Knopf, 1940.
- Twain, Mark. "Mrs. McWilliams and the Lightning." *The American Claimant and Other Stories and Sketches*. New York: Harper and Brothers, 1899: 299-307.
- Twain, Mark and William Dean Howells. "Colonel Sellers as a Scientist." *The Complete Plays of W.D. Howells*. Eds., Walter J. Meserve, William M. Gibson, and George Arms. New York: New York University Press, 1960: 205-241.
- "A United Nation." American Telephone and Telegraph Company, 1910. N.W. Ayer Collection, National Museum of American History Archives Center. Washington, D.C.

Wald, Priscilla. *Contagious: Cultures, Carriers, and the Outbreak Narrative*. Durham: Duke University Press, 2008.

Ware, Eugene. *The Indian War of 1864: Being a Fragment of the Early History of Kansas, Nebraska, Colorado, and Wyoming*. Topeka: Crane and Company, 1911.

Wellman, Barry. "Little Boxes, Glocalization, and Networked Individualism." *Digital Cities II: Computational and Sociological Approaches*. New York: Springer, 2002: 10-25.

---. "Westinghouse is Satisfied." *New York Times* 7 Aug. 1890: 2.

Wharton, Edith. "The Bolted Door." 1908. Rpt. *The Collected Stories of Edith Wharton*. Intr. Anita Brookner. New York: Carroll & Graf, 1988: 474-512.

Whitman, Walt. *Leaves of Grass*. Brooklyn, NY: 1855.

Winner, Langdon. "Do Artifacts Have Politics?" *The Whale and the Reactor: a Search for Limits in an Age of High Technology*. Chicago: University of Chicago Press, 1986: 19-39.

Withington, Vere. "An Electrical Study." *Overland Monthly and Out West Magazine* 20.118 (Oct. 1892): 417 – 429.

---. "A Woman Electrical Engineer," *New York Times* 28 Mar. 1899: 3.

Young, Elizabeth. *Black Frankenstein: The Making of an American Metaphor*. New York: New York University Press, 2008.