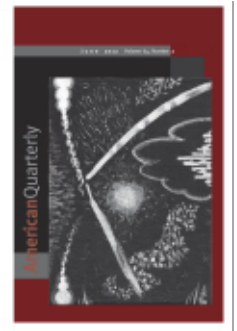# The Wire Devils: Pulp Thrillers, the Telephone, and Action at a Distance in the Wiring of a Nation

MacDougall, Robert.

The Wire Devils: Pulp Thrillers, the Telephone, and Action at a Distance in the Wiring of a Nation

Robert MacDougall

We can remember the monsters of the Gilded Age, but not the horror they once evoked. The octopus, the spider, the hydra—historians find these images of corporations and the technological networks they built strewn across the culture of the late-nineteenth- and early-twentieth-century United States like the bones of dinosaurs long extinct. Of course, Americans still worry about corporate size and rapid technological change. Today's multinational corporations dwarf the leviathans that alarmed muckrakers and trustbusters a century ago. But that era's most lurid images of corporate and technological networks are somehow alien to twenty-first-century Americans. The political cartoons seem quaint or comical; the oratory of the Populists and the prose of muckraking journalists often read as hysterical or overwrought. In an age of planet-spanning corporations and instantaneous global commerce, it is difficult to apprehend how unnatural—how monstrous, to some—region- and nation-spanning companies and technologies of communication once seemed.

In this article, I reexamine the popular fears of that era by exhuming from obscurity some vernacular literature that directly engaged these anxieties. First, I examine the "wire thrillers," a series of pulp novels published in the 1890s, 1900s, and 1910s that put melodramatic depictions of technological and economic change at center stage. The thrillers were for the most part formulaic potboilers, but they were charged by a simultaneous attraction to, and repulsion from, the technological transformation they described. I then turn to the one advertising campaign that, probably more than any other, pacified fears of America's new techno-industrial order, and drove images of the corporate octopus and wire spider to extinction. This long and influential campaign was the work of the American Telephone and Telegraph Company.

New technologies—in particular the new national networks of telegraph and telephone—were the central subjects of the wire thrillers and the AT&T

campaign. Both the thrillers' authors and the telephone monopoly employed these new technologies as proxies for the nation, and as metaphors for controversial changes to America's political and economic order. While on the surface the wire thrillers celebrated the new technologies of long-distance communication, they also betrayed deep fears of sectional integration and nation-spanning commerce. AT&T publicity worked to answer these anxieties. The telephone company embraced the wire thrillers' metaphorical conflation of technological networks, corporations, and the American nation, but reversed the polarity of their images, celebrating the very sorts of social and economic integration that the authors of the wire thrillers most feared. Ultimately, AT&T succeeded both in constructing a national telephone network and in selling that network as a model representation of the nation itself. The story of how AT&T accomplished that feat is the story of how Americans learned to stop worrying and love the wire, or how technological networks, sectional integration, and nation-spanning corporations were at once conflated and redeemed.

Action at a Distance

Why were Gilded Age Americans so inclined to imagine large industrial organizations, and the technological networks they owned and operated, as monstrous octopi or spiders? In the visual culture of late-nineteenth-century America, tentacles and webs were shorthand for both technological networks—railroad tracks, oil pipelines, telephone and telegraph wires—and for corporate power more broadly (fig. 1). The sinuous tentacles of the octopus are what made it a frightening and powerful symbol—likewise the long limbs of the spider and the ensnaring strands of its web. How often were railroads, telephone and telegraph companies, or oil trusts depicted as octopi stretching their tentacles over a map or even clutching an entire globe? The octopus and the spider were not caricatures of corporate size alone. They were nightmares of *reach*. They were vivid depictions of what was often called "action at a distance."[1]

Figure 1.
A cartoon from 1888 depicts bankers, doctors, and other early telephone users ensnared in the web of the Bell spider. Reproduced from *Judge*, April 7, 1888, 16.

Few features of late-nineteenth-century life seemed more novel or remarkable to observers than the technologies of action at a distance. Chief among these were the railroad, telegraph, and telephone. In the decades after the Civil War, American railroads linked the corners of the continent with thousands of miles of track. The Western Union Telegraph Company, one of the United States' first nation-spanning corporate monopolies, completed a transcontinental

IN THE CLUTCH OF A GRASPING MONOPOLY.

telegraph line in 1861, providing theoretically instantaneous communication from coast to coast. And the telephone, born in the centennial year of 1876, rapidly grew to eclipse the telegraph, promising to connect every home and every life to new national networks of communication and exchange.[2]

New technologies almost inevitably inspire simultaneous enthusiasm and unease. Numerous scholars have documented the anxieties expressed by late-nineteenth- and early-twentieth-century Americans in the face of rapid technological change.[3] Many of these anxieties were provoked by the apparent ability of new technologies to alter spatial categories and boundaries. Railroad cars and streetcars, for example, were new kinds of technological spaces. As Grace Elizabeth Hale shows, these spaces became key battlegrounds in the creation of, and resistance to, systems of racial segregation.[4] The telephone in the home, both Carolyn Marvin and Michèle Martin argue, breached a traditional divide between male public and female private spheres. As a result, the "virtual space" the telephone created appeared to threaten those structures of gender, class, and race that more clear-cut spatial divisions between work and home helped to sustain.[5]

In this article, I am interested in the technological reordering of space on a larger scale—the perceived eclipse of sectional and local economies and identities by a move toward national unity through commerce. One of the era's great clichés held that the rail and wire had "annihilated" space and time.[6] The violence of that phrase is rarely remarked upon. Why were time and space "annihilated," rather than "transcended" or "transformed"? The pace of technological and economic change was indeed violent and wrenching to many Americans. Each advance in the technology of communication and transportation gave new powers to its users, yet also compounded the ability of distant people and events to affect those users' lives.

In the words of Thomas Haskell, "the very constitution of the social universe had changed." As society and economy became more obviously interdependent, Haskell argues, it proved harder and harder to imagine individuals as solitary masters of their fates. Local sources of meaning and order—the family, the sect, the small town—were "drained of causal potency," becoming "merely the final links in long chains of causation that stretched off into a murky distance." America's isolated "island communities," in Robert Wiebe's famous phrase, were absorbed, or feared absorption, into national and even international markets and networks.[7] The local was challenged by the national, the near by the distant, in virtually every area of life. The scale of life changed, and with it changed the social meaning of distance.[8]

Imagined Technologies

This article is more concerned with representations of technology and techno-logical practices than with actual material technologies or the real practices of users.[9] The transcontinental telephone system was at its inception the largest, most complicated machine ever built. Its size and complexity could not be directly perceived or demonstrated in any simple way. "In all the 3,400 miles of line," one AT&T publicist said of the first coast-to-coast telephone call, "there is no one spot where a man may point his finger and say, 'here is the secret of the Transcontinental Line; here is what makes it possible.'"[10] The new networks of national communication could be only viewed in incomplete parts: a telephone here, a tangle of wires there, a line of poles stretching into the distance. "Explanations of it [the telephone network] are futile," wrote journalist Herbert Casson in 1910. "It cannot be shown by photography, not even in moving-pictures."[11] There was no direct way to apprehend the immensity of the system. Electricity in the nineteenth century was, it has been observed, "a force stronger in the imagination than in reality."[12] The first national networks of telephone and telegraph, I argue, were more commonly and powerfully imagined than directly experienced or used.

AT&T executives once flattered themselves in thinking that they alone had taught Americans how and when to use the telephone. The public "had to be educated . . . to the necessity and advantage of the telephone," said AT&T president Theodore Vail in 1909. His company "had to invent the business uses of the telephone and convince people *that they were uses*," declared a company advertisement that same year.[13] That portrait of passive consumers waiting to be instructed by the producers of technology was critiqued in the 1980s and 1990s by historians and sociologists such as Carolyn Marvin, Claude Fischer, and Michèle Martin.[14] Those scholars credited eager and innovative consumers, especially women, with inventing many uses of the telephone neither foreseen nor endorsed by the Bell System.

That case cannot be made, however, for use of the long-distance network. Long-distance calling, especially the very long distance calling made possible by AT&T's transcontinental lines, was a practice in which publicity long preceded consumer demand. AT&T vigorously promoted its coast-to-coast national network as a symbol, but actually using the network was cumbersome and expensive. Few ordinary Americans declared any pressing need to be connected to cities, states, or regions hundreds or thousands of miles away. "No one pretends that the New York–San Francisco line will immediately

'pay'," reported *McClure's* in 1914. "The public will have to acquire the habit of talking transcontinentally, just as it had to learn to use the telephone at all." As late as 1935, AT&T would estimate that less than 1.5 percent of telephone calls crossed even one state line.[15]

Benedict Anderson called the nation an "imagined community" because no citizens of any modern nation can expect to meet or know more than a fraction of their fellows.[16] The long-distance telephone and telegraph were enablers and artifacts of the nationalist project Anderson describes. Like the nations they came to span, the new networks of long-distance communication could be represented—pictured, mapped, performed, described—but not wholly experienced or truly seen. In fact, the new networks of communication were themselves representations of the profound transformation the nation was undergoing. The railroad, telegraph, and telephone offered physical representation of those expanding networks of commerce and exchange that linked section to section, tied livelihoods and fates to distant markets, and seemed to suborn once independent communities to unseen forces and unprecedented conglomerations of wealth and power.

Representations of these networks were not only imaginative, but didactic. Depictions of the wire, even in advertising copy or lowly pulp thrillers, embodied arguments about the nation, and about the ways commerce, power, and information should flow. To understand these technologies and their place in American life, we must examine the metaphors and images that contemporary Americans used to represent them, and the arguments about the nation those metaphors contained.[17]

The Wire Thrillers

"Telephones are only known to me in the kind of novels which a man reads in bed, hoping that they will send him to sleep," reported an English essayist named Andrew Lang in 1906.[18] His remark underlines the power of literary representations to frame early encounters with technology. Many ordinary Americans and others encountered representations of long-distance communication in fiction, advertising, or the press well before experiencing that technology firsthand.

Lang also suggested the sort of literature in which the telephone and telegraph were most likely to be found. Though he did not name the novels by his bedside, he might well have been describing the wire thrillers. Novels such as *The Wire Tappers*, *The Wire Devils*, *Brothers of the Thin Wire*, *Phantom Wires*, and *Fighting Electric Fiends* were the high-tech thrillers of their day.[19] Loaded

with technical jargon and slang such as "lightning slingers" and "overhead guerillas," they portrayed the business of telegraphy and telephony as a thrilling demimonde of crime and derring-do—a "secret network of excitement and daring," in one author's words, "which ran like turgid sewers under the asphalted tranquility of the open city."[20] While formulaic in execution, these popular works attested to the excitement and anxiety surrounding the technology of action at a distance when it still seemed dangerous and new.[21]

The formula on which the wire thrillers were constructed is straightforward. They are tales of technology, filled with detailed descriptions of the new communication networks and the endless uses to which they might be put. All manner of masquerades are played out over the telephone and telegraph. Lines are tapped, cut, and redirected. Messages are coded and cracked, intercepted and forged. The wire thrillers are stories of commerce and crime, and they present the line between those activities as blurry indeed. Racetrack gamblers collude with stock market speculators while crooked railroad magnates toy with the lives and livelihood of the nation. Above all, the wire thrillers are breathless depictions of action at a distance—the ability to act in one place and affect the lives of people in another. Electricity, Arthur Stringer rhapsodized in his novel *Phantom Wires*, "hurls your voice half way round the world . . . it creeps as silent as death through a thousand miles of sea . . . it threads empires together with its humming wires; it's the shuttle that's woven all civilization into one compact fabric!"[22]

All this activity requires detailed explanation, and the prose of the wire thrillers is often mired in technical exposition. But exposition was in many ways the point. Long passages of the novels depict corporate machinations and other workings of the new economy in word-pictures that are at once lurid and weirdly loving. The wire thrillers were primers, of a sort, on the operation of the telegraph and telephone, as well as the larger economy of which those devices were a part.

The wire thrillers were enthralled with descriptions of technology and technological mastery. Every novel of the type requires at least one scene in which Morse code, the shared but secret language of the technological elect, is used to communicate under the nose of some unsuspecting quarry. Each novel pays tribute more than once to the power of electricity and those prepared to seize and use it. "Right at the back of this house is a wire . . . a little condensed Niagara of power," one character exults. "I can capture and tame and control that power . . . I can make it my slave, and carry it along with me."[23] The role models of the wire thriller are never bewildered by the technology of action at a distance. They capture and tame it, domesticate it, and make it their tool.

The wire thrillers belong to the "rogue school" of turn-of-the-century fiction. The heroes of the wire thrillers are invariably technologically savvy young men. They are good men, though prone to falling in among bad sorts. The protagonist of *The Wire Tappers* and its sequel, *Phantom Wires*, is Jim Durkin, a former railroad telegraph operator, blacklisted by his employers after failing to prevent a railroad crash. He drifts into the world of wired crime to fund the development of his own personal invention, a form of television. Frank Packard's *The Wire Devils* features as its hero "the Hawk," a gentleman jewel thief who outsmarts both the railway police and a nation-spanning criminal syndicate in a game of cat and mouse played over telephone and telegraph lines. Only in the novel's final pages is the Hawk's true identity, a Secret Service agent conducting an elaborate sting, revealed.

The female protagonists of the wire thrillers are surprisingly similar to the men. They are more passive than the male characters, in the prescribed manner of so much genre fiction, but not exceedingly so. The most typical heroine in the wire thrillers is a young telegraph or telephone operator. These characters tend to be technically proficient in their own right, and no less enmeshed in the shady underworld of the wire. The female operator is an interesting figure in both fiction and in history, a glaring contradiction to her era's nearly automatic equation of technological mastery and masculinity. Young women were a crucial part of the real-life world of the wire from its beginning. Cheaper than men and more reliable than boys, unmarried women were employed nearly everywhere as telephone and telegraph operators. In popular culture, the figure of the female operator united the novelty of the new technology with the novelty of finding so many young women in the worlds of business and industry, and the "hello girl" rapidly became nearly as ubiquitous in prose and song as she was in the Western Union office or Bell exchange. "The young men of the daily press . . . delight to write about that mysterious and nearly always sweet-voiced being, the telephone girl," observed an electrical industry journal in 1889.[24] Many male writers waxed rhapsodic about the female operator and imagined her at the center of a host of romantic scenarios. Mark Twain's Connecticut Yankee is so taken with the operator in his hometown that he names his first child "Hello Central."[25] Other sources, however, portrayed young female operators as giddy and brazen, speaking in slang, garbling messages, and cutting off legitimate callers to flirt with "downtown clerks and dudes."[26] Jeffrey Sconce's analysis of nineteenth-century spiritualism as a discourse on gender and technology notes the common conflation of female operators and female mediums.[27] The complex cultural figure of the female operator demonstrates her era's ambivalence about women's relationship with distance-collapsing technologies. Already

powered by a more general ambivalence about action at a distance, the wire thrillers tapped this alternating current of fascination and unease.

The principal female character in *The Wire Tappers* and *Phantom Wires* is Frances Candler, a young telegraph operator who has fallen in with an unsavory bunch. She becomes Jim Durkin's love interest in the first novel and his wife in the second, yet she remains an active participant in his capers. Jim, the novels make clear, is drawn to Frances by her beauty and by her considerable technological skill. These two qualities are united in her deft but delicate touch on the telegraph sounder, a signature "hand" that Jim recognizes over the wires and falls in love with from afar. (To complicate the gender typing of Frances's character, Jim invariably calls her "Frank," which adds a certain homoerotic frisson to the sweet nothings the two lovers transmit over the wires.) If Frances is not quite an equal partner in every action, neither is she portrayed as lost or helpless in the underworld of technology and crime.

Frank and Jim scheme and court by telephone and telegraph. Stringer presents their long-distance romance—"that call of Soul to Soul, across space, along channels less tangible than Hertzian waves themselves"—as the highest achievement of the wire, the one application of the new technology that might be unreservedly embraced as virtuous and good. He describes at length the two lovers' telegraph messages and long-distance phone calls, urging his readers to marvel at the triumph of love and technology over geographic space:

> Not an ohm of . . . soft wistfulness, not a coulomb of . . . quiet significance, had leaked away through . . . hundreds of miles of midnight travel. It almost seemed that [Jim] could feel the intimate warmth of her arms across the million-peopled cities that separated them; and he projected himself, in fancy, to the heart of the far-off turbulence where she stood.[28]

Yet this marvel has a cost. Though "magnetically drawn" to the "excitement and daring" that surrounds the wire, Frances worries constantly about the morality of action at a distance, and its effect on both her femininity and her soul. Through participation in the dangerous world of technological commerce and crime, "the battery of her vital forces"—the novels miss no opportunity for electrical metaphor—is gradually "depleted and depolarized."[29] Frances serves, a little awkwardly, as the moral conscience of both novels, and Stringer's most didactic passages are written in her voice. "What was it that had deadened all that was softer and better and purer within her, that she could thus see slip away from her the last solace and dignity of her womanhood?" she wonders. The answer is the use of the wire for gain without toil. Technology is at once attractive and corrosive. Frances fears she has become "only the empty and

corroded shell of a woman, all that once aspired and lived and hoped in her eaten away by the acid currents of that underground world into which she had fallen."[30] Her attraction to and repulsion from the demimonde of the wire parallels the whole genre's conflicting impulses toward the technology of electrical communication and the economic transformation that technology was understood to represent.

Section, Space, and Crime

Frances and Jim and all the other heroes in the wire thrillers are thoroughly upstaged by the villains they confront. The villains of the genre are vividly depicted, and are, even more than the heroes, masters of technology and action at a distance. It is in the figures of these antagonists that the authors of the wire thrillers draw their most direct connections between technology, commerce, space, and crime. In the schemes of those villains, which the thrillers describe at length, the wire's role as a physical representation of economic forces becomes most clear.

The wire thrillers were undoubtedly influenced by *The Octopus* and *The Pit*, Frank Norris's famous novels of the railroad and the stock exchange. Norris and the authors of the wire thrillers looked upon the new networks of technology and commerce with the same mixed feelings. Yet like the authors of the wire thrillers, Norris was also drawn to the challenge of describing commercial systems and illustrating economic change. He conceived *The Octopus* and *The Pit* as the first two parts of an epic trilogy that would capture "the New Movement, the New Finance, the reorganization of capital, the amalgamation of powers, the consolidation of enormous enterprises."[31] And Norris was, like his imitators, particularly concerned with the way new technologies shaped or altered space.[32]

One difference between Norris and his imitators is that in Norris's work, there are few convenient villains. A railroad crushes the California farmers and ruins their lands, but there is no "Master Spider" behind the railroad company to be defeated and unmasked. There is only the complex interdependence of technology, agriculture, and national finance. "You are dealing with forces, young man, when you speak of Wheat and Railroads, not men," says an executive in *The Octopus*. The struggling farmers are left to wonder: "Forces, conditions, laws of supply and demand—were these, then, the enemies after all?"[33] Stephen Kern's recent history of causality in fiction specifically cites *The Octopus* to illustrate a shift toward more complex models of interdependence.

Norris illustrates in fiction the same disorienting recession of causation that Thomas Haskell describes.[34]

In the wire thrillers, by contrast, there is always a man behind the octopus. In *The Wire Devils*, the titular crime ring is controlled by "the Spider," a criminal mastermind in the style of Arthur Conan Doyle's Dr. Moriarty or Sax Rohmer's Fu Manchu. The Spider's master stroke is his capture and use of a railroad telegraph system. He and his Wire Devils use the railroad and its telegraph to direct and cover their criminal activities. They have subverted the system so cunningly, we are told, that the railroad effectively *is* the criminal syndicate, or at least entirely does its bidding. Much is made of this. "Somewhere, hidden away in his web, at the end of a telegraph wire, was the Master Spider," Packard writes. "Where there was a telegraph sounder, that sounder carried the messages, the plans, the secret orders of the brain behind the organization; and the very audaciousness with which they made themselves free use of the railroad's telegraph system . . . was in itself a guarantee of success."[35] Without actually portraying the normal activities of real railroads as criminal, Packard's novel indulges in the fantasy of a criminal railroad and exploits widespread unease with that industry's reach and power.

Arthur Stringer's novels make equally clear connections between the new networks of commerce and power and an imagined world of high-tech crime. Jim and Frances begin their adventures together by conning the crooked operators of a racetrack gambling ring. In Stringer's descriptions of the criminal racing "circuits"—"the huge and complicated and mysteriously half-hidden gambling machinery close beside each great center of American population"—it is easy to read both attraction and repulsion with the workings of commerce and exchange. "Money flashes and passes back and forth, and portly owners sit back and talk of the royal sport," Stringer writes, while "from some lower channel of the dark machine drift the rail-birds and the tipsters . . . the idlers and the criminals." Those criminals, in turn, "infect the rest of the more honest world with their diseased lust for gain without toil."[36]

In the years of the wire thrillers, real-life reformers attacked racetrack gambling in precisely these terms. And because the telegraph and telephone were widely used to collect bets and wire race results to off-track poolrooms, telegraph and telephone companies were often indicted as allies of the gambling industry. The telephone, reformers argued, made it all too easy for seemingly respectable men and women to gamble without having to visit a racetrack or enter a poolroom. "The Western Union Telegraph Company and the telephone interests of the United States are directly responsible for the very existence of

the great pool-room game and its aftermath of human wreckage," charged an assault on the industry by *Cosmopolitan* magazine in 1907, the year after *The Wire Tappers* appeared and the year that Arthur Stringer published *Phantom Wires*. "They [the owners of telephone and telegraph systems] tacitly have allowed their companies to become bone and sinew in the body of the pool-room crime."[37]

In both the novel and the magazine, this danger of the new technology is understood as spatial. That is, it involves the way the telephone and telegraph span or reorder social and physical space. The gambling circuits, Stringer tells his readers, connect "New York and Washington, Chicago and St. Louis, Memphis and New Orleans." They bring "idlers and criminals" into close contact with "the more honest world." *Cosmopolitan* is even more explicit: "You want to bet but are afraid to be seen entering a pool-room. We [the telephone company] have arranged with the pool-room criminals so that you can gamble away your money, your employer's money, your husband's money . . . and at the same time never go near a pool-room."[38] The telephone and telegraph, it was feared, broke down spatial boundaries upon which morality—and, not incidentally, gender and class order—seemed to depend.

The attack on racetrack gambling, however, is only a prelude to *The Wire Tappers*' main event. Having swindled the swindlers at the racetrack, Jim and Frances go after bigger prey. Jim learns of a millionaire speculator, a "Napoleon of commerce" who has the power, through access to a private telegraph line from Savannah and New Orleans to the Secretary of Agriculture in Washington, to predict and manipulate the worldwide price of cotton. The character of Curry, the "Cotton King," contains all the ominous connections Americans might imagine between technology and power, crime and commerce, the erosion of section, and action at a distance. "This was the man at whose whisper a hundred thousand spindles had ceased to revolve," Stringer writes, "and at whose nod, in cotton towns half a world away, a thousand families either labored or were idle, had food or went hungry." Curry instigates a panic on the stock exchange, leading to the suicide of a ruined merchant, simply to amuse and impress an actress in the gallery. He uses his control of the telegraph to engineer a bubble in the price of cotton, one that will ruin thousands but make him a fortune. It is, the reader sees, essentially the same swindle perpetrated early in the novel by the gangsters at the racetrack, but on a national scale.[39]

It is fitting that *The Wire Tappers* uses cotton, and a telegraph line from South to North, to illustrate the interdependence of sectional commerce. Cotton was the great global industry of the nineteenth century. "Whoever says Industrial Revolution says cotton," wrote Eric Hobsbawm.[40] For nineteenth-century

Americans, whoever said cotton also said slavery, section, and the Civil War. Cotton tied the economy of the industrial North to that of the slaveholding South. This, abolitionists argued, made Northern mill owners, merchants, and ordinary consumers complicit in the peculiar institution years before the Dred Scott decision or the Fugitive Slave Act.[41] Cotton also linked the fortunes of Southerners to the mills of Manchester and Massachusetts, and to a new industrial order that white Southerners at least neither desired nor admired. The cotton trade wove a "worldwide web," in Sven Beckert's words, that paved the way for global capitalism.[42] A generation after the Civil War, American unease about the economic and moral interdependence of sections could still easily fix on cotton as a symbol.

The issue of race, so crucial and inescapable to America in these years, is conspicuous in the wire thrillers only by its absence. The heroes, villains, and supporting characters of these novels are uniformly white. The wire thrillers have this in common with almost all literature surrounding telegraphy and telephony in this era. Fiction, trade journals, and advertising echo with the silence of whiteness as an unmarked category.[43] The issue of section, however, is everywhere in the wire thrillers. Characters are routinely typed by where they come from; the stories are populated with greedy Yankee capitalists, violent Irish thugs, and delicate Southern belles. More important, the thrillers resonate with anxiety about sectional integration and national commerce.

Section and race in Gilded Age America were of course inextricably intertwined. While the railroad, telegraph, and telephone enabled the incorporation of the South into a unified national economy, segments of white America worked to convince themselves that the nation's culture was or could be similarly united. As the Civil War passed from immediate memory, white Americans in many regions of the country enacted sentimental rituals of sectional "reunion" and "reconciliation"—the terms implying a prior unity that may never have existed. John Hope Franklin, David Blight, and others have shown us that the price of that "re"-unification was a general repudiation of Reconstruction, and national acquiescence to racial segregation and ideas of white supremacy.[44]

It need not trivialize that price to observe that national unification had other costs. Unification, in the sense and service of commercial integration, meant the interconnection of sections and the inescapable unity of the national market. The anxieties of the wire thrillers, like the era's recurring nightmares of octopus and spider, testify to genuine unease about this profound reordering of national space. No specific locations were cast as sinister in *The Wire Tappers* or its fellows. The Cotton King's secret telegraph line from Savannah to Washington to Chicago could be seen as equally ominous by readers in the

South or North or West. Instead, action at a distance is presented as dangerous in and of itself. On nearly every page of the wire thrillers, fascination with new technology confronts a critique, not of technology per se, but of the economic interdependence created by technological networks of wire and rail:

> This Machiavellian operator's private wires were humming with messages, deputies through-out the country were standing at his beck and call, . . .Chicago and St. Louis and Memphis and New Orleans were being thrown into a fever of excitement and foreboding, fortunes were being wrested away in Liverpool, the Lancaster mills were shutting down, and still cotton was going up, point by point.[45]

There is admiration here for the technologies of action at a distance and for those who make them do their bidding. There is a more powerful sense, how-ever, that this sort of commerce must be deeply corrosive. The cotton market is only the racetrack poolroom writ large. "What was criminality from one aspect was legitimate endeavor from another," Stringer writes. "All life . . . was growing more feverish, more competitive, more neuropathic, more potentially and dynamically criminal." With the annihilation of space, the wire thrillers predicted, must come the erosion of morality and the invasion of once virtuous small communities by the imperatives of a national market:

> Timid clerks and messenger boys and widows, even, were pouring their pennies and dollars into the narrowing trench which separated them from twenty cent cotton and fortune. . . . Even warier spirits, suburban toilers, sober-minded mechanics, humble store-traders, who had long regarded [the stock exchange] as a very Golgotha of extortion and disaster, had been tainted with the mysterious psychologic infection, which had raced from city to town and from town to hamlet.[46]

From city to town and from town to hamlet—this is the vision of action at a distance that haunted Gilded Age Americans. The wires are only the means of infection. The deeper fear is a collapse of section and of space, and the corrosive impact of the national corporate economy on the autonomy and morality of America's hometowns.

The networks depicted in the wire thrillers were, therefore, doubly imagined. The novels offered vivid representations of new technologies whose scale and scope could not easily be apprehended in other ways. At the same time, the wire thrillers employed the new networks of telephone and telegraph as meta-phors for commercial integration and economic change. Ultimately, these pulp thrillers drew their power less from a critique of technology itself than from frightening visions of the annihilation of space and section, and the assimilation of American communities into one ruthless economy or machine.

AT&T and the Octopus

Nightmare images of space-destroying octopi and monstrous corporate trusts were never confined to fiction, pulp or otherwise. They were ubiquitous in the political discourse of the late nineteenth century. Any large corporation might be caricatured as a monster in this era, but the industries most commonly depicted as octopi and spiders were those in the business of action at a distance—the railroads, telegraph, and telephone (fig. 2). (The only other contender for this honor was Standard Oil, another nation-spanning corporation that played a role in the technological reordering of national space.)

The Western Union Telegraph Company and the great railroad interests of the late nineteenth century often seemed determined to live down to their reputations. There was little in the pages of *The Octopus* or the wire thrillers that could not be matched or topped by the actions of real railroads in the ruthless and loosely regulated competition of the day. Western Union, which secured a national monopoly over the long-distance telegraph in the aftermath of the Civil War, was also famously indifferent to its own public image and to questions of the public good. The American Telephone and Telegraph Company, however, which became the parent company of the Bell telephone interests in 1900, took a different tack.

In the 1880s and 1890s, the Bell telephone companies showed little more interest or aptitude for public relations than their counterparts at Western Union. After 1900, however, and particularly after a change of management in 1907, AT&T became increasingly sensitive to its rather spotty public image. After 1907, the company launched an ambitious public relations offensive. This influential campaign, which continued for many years, did much more than simply polish the telephone company's public face. It took on the idea of the octopus and the fears on display in the wire thrillers, and seems to have quite successfully countered or displaced them. It did so by promoting and redeeming the idea of action at a distance.

Like the wire thrillers, AT&T advertisements in the 1900s and 1910s were efforts to depict what could not be seen—the size and complexity of the new national communications networks. "The Bell System!" enthused Bell promoter Herbert Casson. "Already this Bell System has grown to be so vast, so nearly akin to a national nerve system, that there is nothing else to which we can compare it."[47] Also like the wire thrillers, AT&T advertisements used representations of the telephone network to represent the economy and the nation. The wire represented and embodied a new national network of commerce and information, and it stood for the profound transformation and integration America
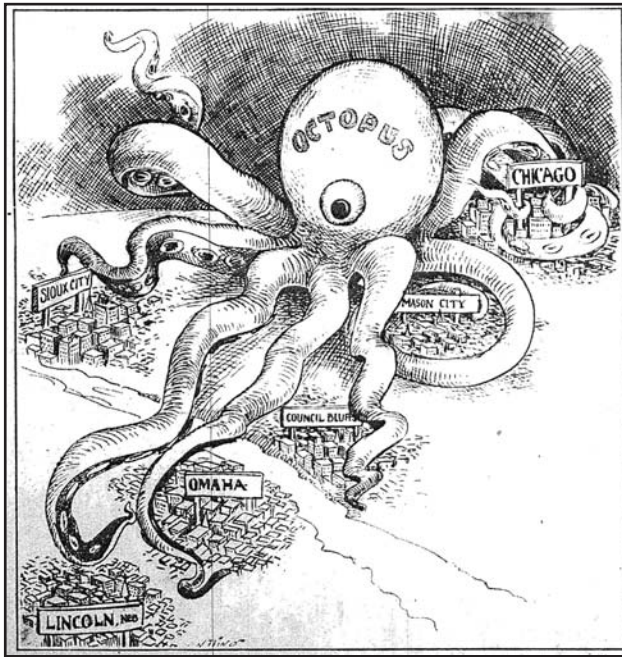
Figure 2.
The Bell System's midwestern competitors portrayed their rival as an octopus stretching its tentacles across the plains. Reproduced from *Telephony*, April 1907, 235.

and its economy had undergone. Unlike the wire thrillers, however, AT&T declared that this transformation was nothing to fear.

AT&T's seminal advertising campaign began in 1907, at a time when the company faced fierce competition from thousands of smaller telephone operations known as the independents, and its leaders harbored serious fears of antitrust action or hostile legislation from the government. At the center of the AT&T campaign was a long series of magazine ads created by the advertising agency N. W. Ayer and Son. But the telephone company also planted press releases with friendly editors, subsidized flattering books about the company, and published a flood of "educational" pamphlets, booklets, and films. Roland Marchand called this campaign "the first, most persistent, and most celebrated of the large-scale institutional advertising campaigns of the early twentieth century." It is not too much to say that AT&T blazed the trail that corporate public relations would follow for years to come.[48]

Given public hostility to corporate spiders and octopi, one might have expected AT&T to deemphasize the size and unity of its system. Given also the widespread anxiety about action at a distance, one might expect a retreat

from arguments about the way the wire was shrinking and unifying the nation. Yet the telephone company did neither. It offered instead a positive defense—indeed, a celebration—of economic integration and corporate reach. Because it accepted the metaphor that powered the wire thrillers, AT&T had to do more than sell telephone service. It had to sell action at a distance and the new economic unity of the nation.

AT&T publicity described the workings of the telephone and the new national economy in word-pictures that read like the novels of Frank Packard or Arthur Stringer minus the menace or unease. "American business men have been made neighbors through contacts over the wires of a nation-wide telephone system," proclaimed a typical advertisement. "Drawn together by bonds of communication . . . America's industries operate not as individual and isolated enterprises, but as closely coordinated parts of a gigantic mechanism that ministers to the nation's needs."[49] The wire thrillers drew metaphorical connections between new technological and commercial networks; telephone company publicity asserted that the two sorts of networks were one and the same. AT&T executives argued for the essential unity of the telephone network and the corporate network that owned it. "It is not the telephone apparatus, central office equipment, or wires that independently afford or can afford any service," Theodore Vail wrote in 1917. "It is the machine as a whole; all the telephones, all the equipment, all the central offices are vital and necessary parts of that machine. That machine is the Bell System."[50] They went on to equate their national network with the national economy, calling the telephone a "national nervous system," and the "life-blood of commerce." "Intercommunication" is "the basis of all civilization," Vail declared in a 1913 speech, and "prosperity is in direct relation to its completeness and perfection."[51]

Like the wire thrillers, AT&T's portrayal of technology was strictly deterministic. The new communication technologies, from the company's point of view, demanded commercial and political integration. There was no way to resist those technologies and no point in debating the kinds of social and political accommodations they required. "The telephone on the desk must be in contact with . . . every other telephone throughout the continent," said Bell executive James Caldwell in 1911. "This can only be done through one unbroken homogenous system . . . and practically and psychologically that one universal system can only be the American Telephone and Telegraph Company."[52]

AT&T publicity never sought to deny or downplay the scope and power of the new communication networks. Instead, it sought to redeem that power by offering it to users and subscribers. "Your line is connected with the great Bell

highways, reaching every state in the union," one advertisement read. "You have the use of switchboards costing upwards of $100,000,000 . . . [and] the benefits of countless inventions." Ads with slogans such as "The Telephone Doors of the Nation," or "You Hold the Key," represented the network as empowering to its users, not powerful in itself. "Every Bell Telephone is the Center of the System," declared a common company slogan.[53] Every man could be a Jim Durkin and every woman a Frances Candler, seizing the technology of action at a distance to "capture and tame and control" the power of the wire. In the publicity for AT&T's national network, as in the wire thrillers, awestruck descriptions of nation-spanning machinery were juxtaposed with seemingly contradictory celebrations of individual empowerment. The wire network was indeed immense, implacable, a leviathan—but men, and perhaps a few women, were bigger still.

As answers to the image of a monstrous corporate octopus, AT&T advertisements presented illustrations of giant telephone operators reaching across the nation, and a series of giant businessmen, looming over a continent the telephone made small (fig. 3). Such images encouraged readers and viewers, in particular the American businessmen whom AT&T deemed the principal market for long-distance service, to imagine themselves as that colossal telephone user. Telephone customers need not see themselves as the prey of the octopus, these illustrations implied. They should see themselves as the octopus, or at least as the square-jawed heroes of the wire thrillers, taking hold of the wire and annihilating space. Readers of the wire thrillers were invited to imagine themselves as men of action at a distance, ready to seize the wire and bend it to their will. Readers of AT&T publicity were encouraged to do the same.

System Over Section

AT&T's boosters and promoters confronted the anxieties the wire thrillers betrayed, addressing many of the subjects the pulps' authors and readers seemed to fear. Novels like Stringer's *Wire Tappers* demonstrated deep unease about the wisdom and the morality of investing and speculating, particularly by those outside the traditional circles of the stock market—"suburban toilers," in Stringer's words, "sober-minded mechanics . . . timid clerks and messenger boys and widows, even," all prone to technological infection by the "diseased lust for gain without toil."[54] AT&T responded to such suspicion by positioning itself as a solid, stable, sensible investment. Decades of advertising depicted AT&T stock as the preferred choice for the very sorts of "suburban toilers," "timid clerks," and "widows, even" that Stringer had described. Thanks to these

Figure 3.
AT&T answered the image of the octopus with visions of giant businessmen empowered by the long distance phone, ca. 1920. Courtesy AT&T Archives and History Center, San Antonio.

images—and to the regular dividends the monopoly paid out—AT&T stock was by the 1930s owned by a greater number of shareholders than that of any other major American corporation.[55]

Novels such as Packard's *Wire Devils* played on popular fears of corporate power, with depictions of "Master Spiders" and "Napoleons of commerce" using the telephone and telegraph to spin webs of influence and greed. AT&T publicity countered such images with the idea that the telephone actually made large companies more egalitarian and democratic. "The telephone arrived in time to prevent big corporations from being unwieldy and aristocratic," company boosters maintained. Because anyone could call anyone else, it was said, the telephone broke down old organizational hierarchies and made rigid chains-of-command obsolete.[56] A pamphlet commemorating the first transcontinental telephone call in 1915 described the transformation of the American economy as a happy *fait accompli*: "The nation became an organized body as it increased its use of the telephone, and there was no loss of the spirit of self-help and democracy that was its birthright."[57]

A remarkable book by Michael Pupin called *Romance of the Machine* took this rhetoric to a millennial extreme. AT&T celebrated Pupin, a physicist

and engineer, as one of the fathers of its national network—he had helped to develop the loading coils that made truly long distance telephony possible. In *Romance of the Machine*, Pupin returned the favor, portraying the telephone as an instrument of technocratic utopia. "I wish to describe the romance of the telephone," Pupin wrote. He praised AT&T as "the largest and most perfectly co-ordinated industrial organization in the world." The telephone monopoly ought to be a model, he said, not only for other industries, but for the United States government and the world. AT&T was pioneering a new kind of "economic democracy." The telephone "consolidated" the nation without controlling it, and "harmonized interests" without reducing freedom. "Who can contemplate . . . the industrial democracy inaugurated by our telephone industry," Pupin asked, "without being assured that it is a joyful message of an approaching civilization which will be more just and generous to the worker than any which the world has ever seen?"[58]

Finally, and most strikingly, AT&T worked to counter fears of sectional difference with a rhetoric of national union through technology and commerce. "When the telephone was invented," AT&T proclaimed in 1915, "the United States consisted of 37 commonwealths loosely held together, each filled with energy and enterprise, but lacking in organization and efficiency of action." The arrival of the telephone changed all that. "Loose ends were gathered up. . . . [S]ocial and business methods were put on a broader and more efficient basis, and the passing of sectionalism and race feud began."[59] The telephone had conquered not just "sectionalism" but "race feud"—a bold assertion in 1915. AT&T's long-distance network "put a seal on the fact that there is no longer East and West, North and South," declared another advertisement from that year the first coast-to-coast telephone circuit was completed.[60] This was language well calculated to appeal to the white, upper-class, business-minded Americans whom AT&T saw as its most important consumers in the years of sectional "reunion" and reconciliation.

AT&T was not simply selling telephone service in the 1910s and 1920s. Ultimately, it was selling nothing less than national commercial integration. It was promoting the whole corporate transformation the American economy had undergone. "The waste and folly of competition [have] everywhere driven men to the policy of cooperation," wrote AT&T promoter Herbert Casson in his 1910 *History of the Telephone*. "Mills [are now] linked to mills and factories to factories, in a vast mutualism of industry such as no other age, perhaps, has ever known."[61] This was an audacious and successful campaign that helped to change Americans' understanding of their own economy and their nation.

There were limits to the company's boldness, however, and in the 1910s there were still lines that AT&T publicity was loathe to cross. One way in which the telephone company's representations of its long-distance network were strikingly different from the images of the wire thrillers was in the geographic orientation of that network. In the thrillers, many significant technological connections run from north to south. *The Wire Devils*' Hawk and Master Spider chase each other up and down the eastern seaboard, and the central image of *The Wire Tappers* is the Cotton King's secret telegraph line from Chicago to Washington to Savannah and New Orleans. These were powerful and not unthreatening representations of economic union and integration.

AT&T's representations of sectional interconnection, by contrast, almost invariably ran from east to west. The company vigorously publicized the first telephone call from New York to Chicago in 1892. Connections from New York to Denver were celebrated in 1912. The greatest fanfare, including dozens of commemorative publications, hundreds of demonstrations around the country, and even a lavish song-and-dance number in Florenz Ziegfield's Ziegfield Follies, was reserved for the completion of the transcontinental telephone circuit from New York to San Francisco in 1915.[62] The first telephone calls from New York to Atlanta, by contrast, or from Chicago to New Orleans, are not recorded in AT&T publicity. Though the company constructed long-distance circuits in every direction, they did not trumpet their north-south connections as they did their east-west lines. Those wires, perhaps, were still too live to touch. It was safer for AT&T to illustrate national unity as a matter of east-west communication. This could be done without raising the ghosts of sectional conflict or pressing modern questions around politics and race.

A magazine advertisement from 1913 illustrates the delicacy of AT&T's position. Under the headline "The Merger of East and West," the ad depicts two smiling men speaking on the telephone from either side of the United States (fig. 4). The text of the ad paraphrases Rudyard Kipling's "The Ballad of East and West," a story about an Indian bandit who befriends an English colonel's son. "These men were of different races and represented widely different ideas of life," the ad says. Yet "each found in the other elements of character which made them friends."[63] If that text stood alone, it might be read as remarkably progressive, offering a call for friendship and interconnection across not only sectional but racial lines. But the illustration tells another story. The two men speaking on the telephone are not of different races. Nor do they seem to come from different walks of life. Both appear to be white, business-class Americans. The easterner has a moustache and the westerner wears a hat, but otherwise, they are twins.

The telephone, the ad goes on to say, had "broken down the barriers of distance" and "made [Americans] a homogenous people." This is what AT&T offered, in words and images. This is what was to banish the octopus and take the menace out of action at a distance. Technology and commerce were altering space, connecting Americans to continent-spanning networks of information and exchange. Still, AT&T promised its customers, the telephone would not threaten lines of race and class and outlook—the people on the other end of the line would be people who looked and acted just like them. AT&T's advertising of the national telephone network combined the rhetoric of national integration with subtle assurances that everyone to be so connected was essentially the same. The company's delicate use of these anxieties suggests that it understood the mixture of attraction and repulsion that powered the wire thrillers. Americans were indeed curious and concerned about the new technologies of communication, but what truly attracted them, and repelled them, was each other.

Figure 4.
AT&T worked to counter fears of sectional difference with images of national union through technology, 1913. Courtesy AT&T Archives and History Center, San Antonio.

Conclusion

We routinely credit the railroad, telegraph, and telephone with "shrinking," "unifying," or "consolidating" the United States, but few historians have engaged directly with the wrenching reordering of space and identity this implied.[64] While modern scholars are highly alert to issues surrounding the construction of space on the personal or domestic scale, it requires some imagination to re-create the intensity of Gilded Age anxiety around the alteration of region or section. "It seems impossible," Edward Everett Hale wrote in 1903, to make modern readers understand "how far apart the States were from each other, and how little people knew each other" before the railroad, telegraph, and telephone.[65] This is only more true today. Section, region, and community were profound components of individual identity in nineteenth-century America. They were intertwined, of course, with hierarchies of race and gender, but that made them no less meaningful or evident on their own.

Historians understand that technologies of transportation and communication were essential to constructing America as a modern nation state, but we have tended to describe the "wiring of the nation" in purely functional terms. The new national networks of telephone and telegraph were critical as both tools and metaphors. They not only facilitated a more integrated national economy; they taught Americans how to imagine themselves within that economy, and

gave them vivid metaphors with which to do so. "The telephone changes the structure of the brain," proclaimed Gerald Stanley Lee, a pastor turned evangelist for the wire. "Men live in wider distances, and think in larger figures, and become eligible for nobler and wider motives."[66]

The wire thrillers' combination of awe and even subjugation toward technological change with a paradoxical faith in individual agency would become the default rhetoric for talking about communication technology in the twentieth and twenty-first centuries. This was the language of the 1920s radio boom, shared by the wireless hobbyists and their ostensible corporate nemeses at RCA. This was the language of personal computing in the 1970s and 1980s and the language of internet hype in the 1990s. When Microsoft faced antitrust prosecution in the 1990s, the arguments it made and the slogans it offered could have been cribbed from AT&T in the 1910s. Theodore Vail's company said, "The telephone doors of the nation are open to you." Bill Gates's company asked, "Where do you want to go today?"[67]

High-tech adventure novels reminiscent of the wire thrillers are widely read in our own time. Twenty-first-century Americans are no less excited or uneasy than their predecessors about new communication networks and rapid technological change. Yet it is hard to imagine the wire thrillers' criticism of action at a distance, or their profound ambivalence about the legitimacy of large corporations, in the works of Tom Clancy, Michael Crichton, or Dan Brown. Electronic media are the cultural air we breathe; multinational corporations are the dominant features of our economic landscape. In embracing a transcontinental communication system, Americans came to embrace their nation's new political economy.

The first nation-spanning corporations—the great railway conglomerates, Western Union, AT&T, and others—remade the nation in their image, employing the new technologies of transportation and communication to integrate and transform the American economy. The history of the railroad may tell us how a new economic order was born in North America, but the history of the telephone best explains how that order gained wide popular support. AT&T's publicity for the long-distance telephone helped legitimize a new nation-spanning economy dominated by conglomerations of corporate power that earlier generations would have found monstrous. Gilded Age Americans feared the growth of corporate size and reach would fundamentally alter the social and material constitution of their nation. Their fears are foreign to us today, not because they did not come true, but because they did.

Notes

1. See, for example, "Action at a Distance," *Cassier's*, August 1912, 164–66; "Action at a Distance," *Scientific American*, January 17, 1914, 39. The term comes from the physical sciences, where the source of one object's ability to affect distant objects, as in gravitation, was a mystery going back to Isaac Newton's day. Mary B. Hesse, *Forces and Fields: The Concept of Action at a Distance in the History of Physics* (Westport, Conn.: Greenwood Press, 1970).

2. The literature on these topics is enormous. On the railroads and their impact, begin with Alfred D. Chandler, *The Visible Hand: The Managerial Revolution in American Business* (Cambridge, Mass.: Harvard University Press, 1977). But see also Gerald Berk, *Alternative Tracks: The Constitution of American Industrial Order, 1865–1917* (Baltimore: Johns Hopkins University Press, 1994); William G. Roy, *Socializing Capital: The Rise of the Large Industrial Corporation in America* (Princeton, N.J.: Princeton University Press, 1997). On the telegraph, see Robert L. Thompson, *Wiring a Continent: The History of the Telegraph Industry in the United States, 1832–1866* (Princeton, N.J.: Princeton University Press, 1947); Richard B. DuBoff, "The Telegraph and the Structure of Markets in the United States, 1845–1890," *Research in Economic History* 8 (1983). On the telephone, see John Brooks, *Telephone: The First Hundred Years* (New York: Harper and Row, 1976); Claude S. Fischer, *America Calling: A Social History of the Telephone to 1940* (Berkeley: University of California Press, 1992); and Richard R. John's forthcoming monograph on the history of telecommunications in America.

3. See, for example, Carolyn Marvin, *When Old Technologies Were New: Thinking about Electric Communication in the Late Nineteenth Century* (New York: Oxford University Press, 1988); David Nye, *Electrifying America: Social Meanings of a New Technology* (Cambridge, Mass.: MIT Press, 1990); Linda Simon, *Dark Light: Electricity and Anxiety from the Telegraph to the X-Ray* (Orlando, Fla.: Harcourt, 2004).

4. Grace Elizabeth Hale, *Making Whiteness: The Culture of Segregation in the South, 1890–1940* (New York: Pantheon Books, 1998), 43–51, 121–98.

5. Marvin, *When Old Technologies Were New*, 67–108; Michèle Martin, *Hello, Central? Gender, Technology, and Culture in the Formation of Telephone Systems* (Montreal: McGill-Queen's University Press, 1991), 140–67.

6. For discussion of the phrase see Leo Marx, *The Machine in the Garden: Technology and the Pastoral Idea in America* (New York: Oxford University Press, 1964), 194–96.

7. Thomas L. Haskell, *The Emergence of Professional Social Science: The American Social Science Association and the Nineteenth-Century Crisis of Authority* (Chicago: University of Illinois Press, 1977), 15, 40; Robert H. Wiebe, *The Search for Order, 1877–1920* (New York: Hill and Wang, 1967); Richard R. John, "Recasting the Information Infrastructure for the Industrial Age," in *A Nation Transformed by Information: How Information Has Shaped the United States from Colonial Times to the Present*, ed. Alfred D. Chandler and James W. Cortada (New York: Oxford University Press, 2000).

8. On the social construction of distance and scale, see Henri Lefebvre, *The Production of Space*, trans. Donald Nicholson-Smith (Cambridge, Mass.: Blackwell, 1991); Sallie A. Marston, "The Social Construction of Scale," *Progress in Human Geography* 24.2 (June 2000): 219–43.

9. American studies and the history of technology share some common classics in this vein, beginning with Marx's *Machine in the Garden*. On parallel developments in American studies and the history of technology, and Marx's place in both fields, see Jeffrey L. Meikle, "Reassessing Technology and Culture," *American Quarterly* 38.1 (Spring 1986): 120–26; Jeffrey L. Meikle, "Classics Revisited: Leo Marx's *The Machine in the Garden*," *Technology and Culture* 44.1 (January 2003): 147–59.

10. *The Story of a Great Achievement: Telephone Communication from Coast to Coast* (New York: American Telephone and Telegraph Company, 1915), 10.

11. Herbert N. Casson, *The History of the Telephone* (Chicago: A. C. McClurg & Co., 1910), 141–42.

12. Simon, *Dark Light*, 3.

13. State of New York, *Report of the Joint Committee of the Senate and Assembly Appointed to Investigate Telephone and Telegraph Companies* (Albany, N.Y.: 1910), 398; AT&T advertisement quoted in Fischer, *America Calling*, 62. Emphasis in original.

14. Claude S. Fischer, "'Touch Someone': The Telephone Industry Discovers Sociability," *Technology and Culture* 29.1 (January 1988): 32–61; Fischer, *America Calling*; Marvin, *When Old Technologies Were New*; Martin, *Hello, Central?*

15. "Telephones for the Millions," *McClure's*, November 1914, 45–55; James M. Herring and Gerald C. Gross, *Telecommunications: Economics and Regulation* (New York: McGraw-Hill, 1936), 213.

16. Benedict Anderson, *Imagined Communities: Reflections on the Origin and Spread of Nationalism*, rev. ed. (New York: Verso, 1991), 3–7.

17. Useful studies of machine metaphors in the late nineteenth and early twentieth centuries include Cecelia Tichi, *Shifting Gears: Technology, Literature, and Culture in Modernist America* (Chapel Hill: University of North Carolina Press, 1987); Mark Seltzer, *Bodies and Machines* (New York: Routledge, 1992); Jon Agar, *The Government Machine: A Revolutionary History of the Computer* (Cambridge, Mass.: MIT Press, 2003); Joel Dinerstein, *Swinging the Machine: Modernity, Technology, and African-American Culture Between the World Wars* (Amherst: University of Massachusetts Press, 2003).

18. Andrew Lang, "Telephones and Letter-Writing," *Critic*, June 1906, 507–8.

19. The novels discussed in detail here are Frank L. Packard, *The Wire Devils* (London: Hodder and Stoughton, 1918); Arthur Stringer, *The Wire Tappers* (Boston: Little, Brown, 1906); Arthur Stringer, *Phantom Wires* (Boston: Little, Brown, 1907). Dozens of others follow nearly identical lines.

20. Stringer, *The Wire Tappers*, 263.

21. On reading popular fiction, see Janice Radway, *Reading the Romance: Women, Patriarchy, and Popular Literature* (Chapel Hill, N.C.: University of North Carolina Press, 1984).

22. Stringer, *Phantom Wires*, 291.

23. Stringer, *The Wire Tappers*, 112.

24. "The Telephone Girl Again," *Electrical Review*, August 10, 1889.

25. Mark Twain, *A Connecticut Yankee in King Arthur's Court*, Norton Critical ed. (New York: W. W. Norton, 1982).

26. Examples include "Flirting over a 'Phone," *New York World*, December 27, 1884; "Pete's Pipe Lines," *Telephone Magazine*, December 1902, 274–76; "Cupid Cripples Muncie 'Central,'" *Telephony*, August 1904, 123; "To Marry Telephone Girl," *New York Times*, April 5, 1905, 1; Sylvester Baxter, "The Telephone Girl," *Outlook*, May 26, 1906, 231–39; Wilbur Hall, "A Little Service, Please," *Saturday Evening Post*, April 10, 1920, 18, 155–58.

27. Jeffrey Sconce, *Haunted Media: Electronic Presence from Telegraphy to Television* (Durham, N.C.: Duke University Press, 2000), 21–58.

28. Stringer, *The Wire Tappers*, 141.

29. Stringer, *Phantom Wires*, 242.

30. Ibid., 247.

31. Frank Norris, *The Octopus: A Story of California* (Cambridge, Mass.: Riverside Press, 1958), 72.

32. This observation is made by Richard White in his forthcoming book on North American railroads.

33. Norris, *The Octopus*, 395–96. These passages are also cited by Stephen Kern.

34. Haskell, *The Emergence of Professional Social Science*, 15–40; Stephen Kern, *A Cultural History of Causality: Science, Murder Novels, and Systems of Thought* (Princeton, N.J.: Princeton University Press, 2004), 208–10.

35. Packard, *The Wire Devils*, 122–23.

36. Stringer, *The Wire Tappers*, 43.

37. Josiah Flynt, "The Telegraph and Telephone Companies as Allies of the Criminal Pool-Rooms," *Cosmopolitan*, May 1907, 50–57.

38. Flynt, "The Telegraph and Telephone Companies," 52.

39. Stringer, *The Wire Tappers*, 168, 249.

40. E. J. Hobsbawm, *Industry and Empire: An Economic History of Britain since 1750* (London: Weidenfeld and Nicholson, 1968), 56.

41. Lawrence B. Glickman, "Buy for the Sake of the Slave: Abolitionism and the Origins of American Consumer Activism," *American Quarterly* 56.4 (December 2004): 889–912.

42. Sven Beckert, "Emancipation and Empire: Reconstructing the Worldwide Web of Cotton Production in the Age of the American Civil War," *American Historical Review* 109.5 (December 2004): 1405–38.

43. On whiteness as silence, see Hale, *Making Whiteness*, xi–xii. On race and the telephone, see Venus Green, *Race on the Line: Gender, Labor, and Technology in the Bell System, 1880–1980* (Durham, N.C.: Duke University Press, 2001).

44. John Hope Franklin, *Reconstruction: After the Civil War* (Chicago: University of Chicago Press, 1961); David W. Blight, *Beyond the Battlefield: Race, Memory, and the American Civil War* (Amherst: University of Massachusetts Press, 2002); Hale, *Making Whiteness*.

45. Stringer, *The Wire Tappers*, 237.
46. Ibid., 217, 238.
47. Casson, *The History of the Telephone*, 195.
48. Roland Marchand, *Creating the Corporate Soul: The Rise of Public Relations and Corporate Imagery in American Big Business* (Berkeley: University of California Press, 1998), 48–87.
49. *Telephone Almanac* (New York: American Telephone and Telegraph Company, 1928), n.p.
50. Theodore N. Vail, *Views on Public Questions: A Collection of Papers and Addresses* (New York: privately published, 1917), 344.
51. Vail, *Views on Public Questions*, 16, 99; Casson, *The History of the Telephone*, 233.
52. James E. Caldwell to Cumberland Telephone and Telegraph Company Stockholders, December 27, 1911, Historical Collections, Harvard Business School.
53. AT&T advertisement, *Life*, December 17, 1914, 1137; Herbert N. Casson, "The Future of the Telephone," *World's Work*, May 1910, 12903–18.
54. Stringer, *The Wire Tappers*, 43, 237.
55. Marchand, *Creating the Corporate Soul*, 75–77.
56. Casson, *The History of the Telephone*, 206.
57. "Coordinating the Nation," *Telephone Review* (Supplement), January 1915, 24.
58. Michael Pupin, *Romance of the Machine* (New York: Charles Scribner, 1930), 77–81.
59. "Coordinating the Nation," 24.
60. *The Story of a Great Achievement*, 14–15.
61. Casson, *The History of the Telephone*, 181.
62. *The Story of a Great Achievement*; John Mills et al., "A Quarter-Century of Transcontinental Telephone Service," *Bell Telephone Quarterly*, January 1940, 2–82. On the Ziegfeld Follies, see Dinerstein, *Swinging the Machine*, 185–87.
63. AT&T advertisement, *Telephone Review*, August 1913, inside front cover.
64. One exception is Sarah H. Gordon, *Passage to Union: How the Railroads Transformed American Life, 1829–1929* (Chicago: Ivan R. Dee, 1996).
65. Edward Everett Hale, *Memories of a Hundred Years*, vol. 1 (New York: Macmillan, 1903), 230.
66. Gerald Stanley Lee, *Crowds: A Moving-Picture of Democracy* (Garden City, N.Y.: Doubleday, Page, 1913), 19, 65.
67. For analysis of this rhetoric involving several generations of communication technology, see Susan J. Douglas, *Inventing American Broadcasting: 1899–1922* (Baltimore: Johns Hopkins University Press, 1987); Robert W. McChesney, *Telecommunications, Mass Media, and Democracy: The Battle for the Control of U.S. Broadcasting, 1928–1935* (New York: Oxford University Press, 1993); Paulina Borsook, *Cyberselfish: A Critical Romp through the Libertarian Culture of High Tech* (New York: Public Affairs, 2000).