

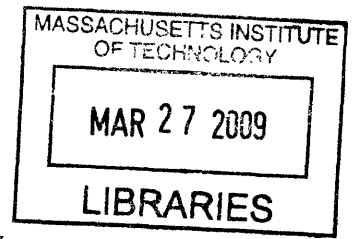
Propheteering: A Cultural History of Prediction in the Gilded Age

by

Jamie L. Pietruska

A.B.

Brown University, 1995



Submitted to the Program in Science, Technology and Society
in Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy in History, Anthropology, and Science, Technology and Society
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Abstract

This study of the changing practices and perceptions of prediction in the late nineteenth century reveals the process by which Americans came to rationalize economic and cultural uncertainty into modern life. Forecasts of all kinds were ubiquitous in the late nineteenth century; as the United States fashioned itself into an urban-industrial power with a national economy and an increasingly corporate and bureaucratic society, prediction became an increasingly significant scientific, economic, and cultural practice. As a postbellum crisis of certainty destabilized ways of thinking about the future—in science, social science, and religion—predictions, whether accurate or not, offered illusions of control over one’s future to citizens of a rapidly modernizing America. I argue that the late-century search for predictability found as much uncertainty as it did certainty, that consumers of predictions were at once desirous and dismissive of forecasts that often took on greater cultural than economic value, and that producers and consumers of prediction together rationalized uncertainty and shaped a new cultural acceptance of the predictable unpredictability of modern life. In the first half of the dissertation I analyze the work of U.S. Department of Agriculture statisticians, private cotton estimators, Weather Bureau forecasters, and local “weather prophets,” all of whom sought to systematically convert their observations into economically valuable predictions. In the second half of the dissertation I focus on the work of utopian novelist Edward Bellamy, fortune-tellers, and spirit mediums, whose prophecies circulated by the thousands through rural and urban America. “Propheteering” offers a new narrative of modernization by examining the tools and cultural practices used by both institutions and individuals to make sense of the late-century scientific and social reimagination of *the future*, however uncertain and fragmentary that future promised to be.

Thesis Supervisor: Merritt Roe Smith

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MIT's Program in History, Anthropology, and STS (which I began when it was known as the Program in the History and Social Study of Science and Technology) has provided me with an enriching intellectual environment for the past six and a half years. I thank Directors Roz Williams and David Mindell for their oversight and for the financial support and research and teaching opportunities that have been made available to me. Many administrators and staff members have helped me avoid bureaucratic pitfalls: from STS, Judy Spitzer, Debbie Meinbresse, Karen Gardner, Kris Kipp, Kate Brearley, Pree Pinkney, Rose Rizzo, and Mira Whiting, and from History, Katherine Swan and Maria DiMauro. And thanks to Judy Spitzer, Debbie Meinbresse, and Kris Kipp for the warmth and sense of humor they have shared in many conversations.

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material and moral support they gladly provided, and I can't adequately summarize the countless efforts they have undertaken to make my life run more smoothly.

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For a long time I carried around a quotation from Toni Morrison's *The Bluest Eye* that said "happiness is anticipation with certainty." I thank Miles Henry for coming into this world and teaching me what those words really mean.

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Introduction

“Propheteering” is a history of the popular and scientific preoccupation with prediction from the mid-nineteenth century to World War I. It begins from the premise that late-nineteenth-century America was plagued by a crisis of certainty. As the United States fashioned itself into an urban-industrial power with a national economy and an increasingly corporate and bureaucratic society, its citizens faced the uncertainty of a persistently volatile economy as well as an epistemological crisis that destabilized traditional conceptions of the future, from science to social science to religion. Uncertainty and indeterminacy were at the core of modern America.

In his best-selling utopian novel *Looking Backward* (1888), Edward Bellamy lamented that Bostonians of the year 1887, with scant protection against the economic volatility of the time, were afflicted by a “specter of Uncertainty.”¹ As new railroad systems and telegraph networks drew American producers and consumers into expanding national and international markets, as well as into new types of financial transactions in commodities and futures trading, exchanging capital in far-flung markets became an increasingly uncertain enterprise. Bellamy’s “specter of Uncertainty” haunted not only the Gilded Age economy but also a culture in which deterministic worldviews gradually began to accommodate the forces of chance and contingency, and Americans struggled to reconcile, for example, the implications of Darwinian theory and Biblical criticism with traditional religious belief and changing postbellum conceptions of death and the afterlife. From the market to religion, Americans confronted a future at once increasingly important and increasingly difficult to foresee. In that context, prediction became an increasingly ubiquitous scientific, economic, and cultural practice, and forecasts, whether

¹ Edward Bellamy, *Looking Backward: 2000-1887* (New York: Penguin Books, 1960 [1888]), 212.

accurate or not, offered illusions of control over one's future to citizens of a rapidly modernizing America.

In "Propheteering" I argue that amid a late-nineteenth-century crisis of certainty, a search for predictability yielded just the opposite: producers and consumers of forecasts rationalized uncertainty and together shaped a cultural acceptance of the predictable unpredictability of modern life. In chapter 1, "Crisis of Certainty," I outline the economic and cultural dimensions of this crisis of certainty and survey the work of various kinds of forecasters that epitomized the late-century penchant for prediction. From the economic prophecies of commodity futures traders, commercial credit reporting agencies, "bucket shop" gamblers, and policy players to the literary prophecies of social commentators, utopian and dystopian novelists, and Columbian Exposition onlookers, a multiplicity of predictions responded to and reshaped a late-century crisis of economic and epistemological certainty. In chapter 2, "Cotton Guessers," I examine the crop forecasting work of the U.S. Department of Agriculture's agricultural statistics program, commercial cotton estimators, and local cotton growers, all of whom sought to predict yields in order to better control prices in national and global markets. I argue that, in the case of the cotton economy, such a proliferation of crop prophecies introduced more market volatility than stability and ultimately shaped a new understanding of crop forecasting as a statistically uncertain endeavor at the turn of the century.

In chapter 3, "Weather Telegraphers," I examine the expansion and professionalization of the government's national weather service from the 1870s to the turn of the century, and in particular the way the federal government, state and local institutions, and local farmers envisioned and implemented different solutions to the problem of disseminating daily weather forecasts and storm warnings to rural Americans outside the reach of the weather service

telegraph network. In this chapter I argue that the U.S. Signal Service's perennial problem of ensuring farmers access to forecasts and storm warnings that would mitigate their economic risk in the face of uncertain and unpredictable weather was solved not by centralized bureaucratic mechanisms but rather technological innovations in local contexts. In chapter 4, "Weather Prophets," I focus on the U.S. Weather Bureau's institutional self-fashioning as a newly established civilian organization within the USDA in the 1890s, during which time it focused increasingly on the public reception of meteorology and sought to counter what it deemed the threat of vernacular long-range weather prophets to the Bureau's scientific reputation. I argue that as it reinvented weather forecasting as a modern scientific practice, the Bureau—through its introduction of long-range weather forecasts in the early twentieth century—actually embraced the very uncertainty it had formerly condemned as the chief liability of weather prophecy.

In the second half of "Propheteering" I turn from the production of forecasts with an economic imperative to the cultural practices of prediction. In chapter 5, "Bellamy's Futures," I focus on Bellamy's thematic preoccupation with foresight in his early literary work from the 1870s and 1880s, writing that explores the possibilities and limitations of the individual predictive imagination. In chapter 6, "Martians and Bostonians," I turn to Bellamy's subsequent thematic concern with collective foreknowledge in the mid- to late 1880s, when he worked out the utopian vision of economic certainty that became the foundation of *Looking Backward*, and a rallying cry of Bellamyite clubs nationwide. In these chapters I illustrate the prophetic roots of Bellamyite politics, and I argue that Bellamy's utopianism originated in his earlier literary experiments, in what Bellamy called the "psychologic studies and speculations" of his early short

fiction, in his keen interest in spiritualism and occult ways of knowing, and in his lifelong fascination with the predictive imagination.²

In chapter 7, “Seers and Spirits,” I turn to urban popular culture and explore the predictive labor of the hundreds of fortune-tellers and spirit mediums who circulated thousands of five-cent predictions throughout the urban scene. In chapter 8, “Fortune-tellers and Courts,” I trace the shifting legal definitions of fortune-telling through a series of anti-divination prosecutions in the late nineteenth and early twentieth centuries. In these chapters I analyze the policing and prosecution of fortune-tellers and spirit mediums and argue that popular and legal discourses reimagined occult prediction as an inherently uncertain but increasingly acceptable facet of modern life. I conclude with a brief discussion of the widespread cultural acceptance of weather, crop, and war risk insurance—and thus an acknowledgement of modern risk and uncertainty—in the World War I era. Ultimately my study of the changing practices and perceptions of prediction in the late nineteenth century reveals the process by which Americans came to rationalize economic and cultural uncertainty into modern life.

The trajectory of “Propheteering” begins in the country and moves to the city. I begin with chapters on crop forecasting and weather forecasting in order to illustrate the antebellum rural demand for agricultural statistics and a national weather service for agriculture and to demonstrate that the systematic “search for order” that Robert Wiebe and subsequent generations of historians have commonly located in the city, in the late-century rise of urban-industrial corporate capitalism, has roots in the countryside, where the search for predictable crop yields and weather forecasts first began.³ In the second half of “Propheteering,” I turn to the city through chapters on the work of Edward Bellamy, whose life in the industrial town of Chicopee,

² Edward Bellamy to Horace Scudder, 25 August 1890, quoted in Sylvia E. Bowman, *The Year 2000: A Critical Biography of Edward Bellamy* (New York: Bookman Associates, 1958), 44.

³ Robert H. Wiebe, *The Search for Order, 1877-1920* (New York: Hill and Wang, 1967).

Massachusetts, afforded him a vantage point from which to survey the forces of industrialization that had transformed Chicopee and the neighboring city of Springfield. Bellamy's *Looking Backward* offered at once a critique of the economic inequities of urban-industrial capitalism and an antidote in the form of a rationalized, nationalized industrial democracy, a utopian vision that had enormous political appeal to agrarian organizations across rural America. The concluding chapters on the late-century vogue of fortune-telling and stage spiritualism focus on a cultural response to Bellamy's "specter of uncertainty," whereby fortune-tellers and spirit mediums offered not only a popular form of escapist entertainment but also a ritual that allowed women and men of all classes to imagine their clearly charted individual futures as they navigated an increasingly crowded and anonymous urban scene. Although the trajectory of "Propheteering" moves from rural to urban, this is not to suggest that traditional forms of rural prophecy yielded to modern scientific forecasting by the end of the century. Rather, I aim to show that the late-century search for predictability depended on, in the cases of crop and weather forecasting, a mutually constitutive rural and urban expertise, and in the cases of literary and occult prophecy, a predictive imagination at once traditional and modern.

In order to trace the social lives of forecasts in the late nineteenth century, I have relied on a variety of sources that illuminate the institutional and public contexts in which predictions were produced and circulated. My chapters on crop forecasting and weather forecasting are based primarily on federal government records and official correspondence from the archival records of the USDA, government publications of the USDA Bureau of Statistics, the Weather Bureau, and the U.S. Army Signal Service, congressional hearings, and contemporary newspapers and periodicals. My chapters on the theme of foresight in the work of Edward Bellamy draw upon Bellamy's published fiction and essays, his unpublished manuscripts and

notebooks at Harvard University's Houghton Library, and archival materials from the Edward Bellamy Homestead in Chicopee, Massachusetts. My chapters on fortune-telling and spiritualism are based on newspaper coverage, contemporary novels and essays, and court proceedings of the late nineteenth and early twentieth centuries.

I have chosen the four core topics of "Propheteering"—crop forecasting, weather forecasting, literary prophecy, and fortune-telling—based on their circulation and reception. The federal government's crop estimates and weather forecasts, Edward Bellamy's best-selling utopian prophecy *Looking Backward*, and fortune-tellers' five-cent predictions all circulated to hundreds of thousands of Americans in the late nineteenth century, and each drew sustained and diverse commentary in print media. The USDA crop estimates and the weather forecasts produced first by the U.S. Army Signal Service and subsequently by the U.S. Weather Bureau did not remain quietly filed away amidst reams of agricultural statistics or climatological data but rather circulated swiftly and widely through telegraph and newspaper offices, federal government bureaucracies, the halls of Congress, private scientific institutions, boards of trade, financial institutions, and corporations. *Looking Backward*, which sold hundreds of thousands of copies and inspired the formation of hundreds of Bellamy clubs immediately after its publication in 1888, circulated through the sitting rooms of upper-class reformers in the northeast, the halls of labor unions, and the rural meetings of the Grange and Farmers' Alliance. And urban fortune-tellers and spirit mediums, from the anonymous to the internationally acclaimed, performed their predictive labors in private parlors and packed theaters, selling glimpses of the future to an upper-, middle-, and working-class consuming public.

Although these forecasts were ubiquitous in late-nineteenth-century America, their presence was hardly innocuous. In reading published and archival sources from this period, I

was struck by the fervor and frequency of debates over who had the authority, the expertise, and ultimately the right to predict the future. Arguments raged in print media, within government bureaucracies, and on the floor of Congress over the accuracy, value, legitimacy, and legality of all manner of forecasts, including crop estimates, weather forecasts, and the advice of fortune-tellers. The late-century explosion of commodity futures trading saw acrimonious competition between formally constituted boards of trade and backroom trading establishments, and the credit reporting industry was beset with lawsuits and proposed regulation in the 1870s that protested unflattering, inaccurate, and ineffectual reports. At the turn of the century, U.S. Weather Bureau personnel debated in a variety of forums the meteorological community's obligation to the public, and agricultural and commercial interests voiced harsh criticisms of the national weather service as well as persistent skepticism regarding the economic value of weather predictions. Public scandal over the leaking of official crop estimates inspired President Theodore Roosevelt to authorize a 1905 investigation of the USDA Bureau of Statistics' crop reporting service, an institution that some farmers had long resented for what they deemed its manipulation of agricultural commodity markets. And urban fortune-tellers and the courts regularly faced off regarding long-standing but selectively enforced anti-divination statutes in the late nineteenth and early twentieth centuries.⁴

In the context of such ubiquitous and contested propheteering, both institutions and individuals sought to refashion themselves as authoritative forecasters, but "Propheteering" is not a simple story of professionalization in which vernacular knowledge and traditional practices

⁴ Ann Fabian, *Card Sharps and Bucket Shops: Gambling in Nineteenth-Century America* (New York: Routledge, 1999 [1990]); James H. Madison, "The Evolution of Commercial Credit Reporting Agencies in Nineteenth-Century America," *Business History Review* 48, no. 2 (1974): 164-86; Scott A. Sandage, *Born Losers: A History of Failure in America* (Cambridge, MA: Harvard University Press, 2005); Donald Whitnah, *A History of the United States Weather Bureau* (Urbana: University of Illinois Press, 1961); Walter H. Ebling, "Why the Government Entered the Field of Crop Reporting and Forecasting," *Journal of Farm Economics* 21, no. 4 (1939): 718-34.

inevitably yielded cultural authority to professional scientific expertise. Rather, scientific and vernacular methods of prediction consistently informed and shaped each other to produce a modern sensibility of prediction that acknowledged the persistence of unpredictability. Similarly, “Propheteering” is not an uncomplicated narrative of scientific progress. The institutional history of prediction in the late nineteenth century is not a story of ever-increasing rationalization and efficiency that invariably yielded increasingly precise and valuable forecasts that mitigated risk in the uncertain currents of late nineteenth and early twentieth century global capitalism. Predictions with an economic imperative—weather, agricultural, and financial forecasts—did not naturally or inevitably become more accurate and relevant for their consumers. And predictions with a cultural imperative—utopian fiction and fortune-telling—were not accepted or assimilated without question into popular culture. Rather, the value and meaning of forecasts in the late nineteenth century were constantly negotiated by forecasters, their consuming public, and the popular press. Propheteers often adapted their forecasting practices to meet the demands of a consuming public at once desirous and dismissive of forecasts that often took on greater cultural than economic value.

Late-nineteenth-century prophets offered the promise of greater control over one’s uncertain future and thus greater freedom from the traditional dictates of divine Providence, but when those promises proved illusory, propheteering became a practice more constraining than liberating. Looking forward was, in the estimation of renowned psychiatrist George Beard, both the cause and the cost of progress in late-nineteenth-century America. In his 1881 treatise on *American Nervousness*, Beard included the “Habit of Forethought” in his catalogue of causes of such a nervous age (along with heightened time-consciousness, the annihilation of time and space by telegraphic communication and railway travel, the burst of scientific and industrial

productivity, and market speculation, among others). Beard's section on the "Habit of Forethought" crystallizes the tension between the promise and peril of prediction in late nineteenth century America:

Much of the exhaustion connected with civilization is the direct product of the forethought and foreworry that makes civilization possible. . . . This forecasting, this forethinking, discounting the future, bearing constantly with us not only the real but imagined or possible sorrows and distresses, and not only of our own lives but those of our families and of our descendants, which is the very essence of civilization as distinguished from barbarism, involves a constant and exhausting expenditure of force. Without this forecasting, this sacrifice of the present to the future, this living for our posterity, there can be no high civilization and no great achievement; but it is, perhaps, the chief element of expense in all the ambitious classes, in all except the more degraded orders of modern society.⁵

As I will illustrate in the next chapter, Beard's nervous Americans lived amid a cultural crisis of certainty within which the practices and perceptions of prediction were dramatically transformed.

⁵ George M. Beard, *American Nervousness, Its Causes and Consequences: A Supplement to Nervous Exhaustion (Neurasthenia)* (New York: Putnam, 1881), 128-29.

Chapter 1: Crisis of Certainty

Propheteering was the real business of the Gilded Age. Contemporary commentators pointed time and again to the predictive sensibility that pervaded late-century life and literature, and regardless of whether they deemed such a penchant for prediction fruitful, futile, or just plain foolish, they agreed that prediction was the hallmark of the age. Poet and literary critic Edward Shanks wrote in a 1922 review of H. G. Wells's *The Outline of History* (1920):

It would be interesting if an investigator would some day trace the rise of that nineteenth century rage for prophesying which culminated in the liberal vaticinations of Mr. Wells. The "discovery of the future" was a good phrase. The nineteenth century discovered it almost as definitely as Columbus discovered America: until then it was thought of roughly as an unchanged continuation of the present.

1

This "rage for prophesying" did indeed bring with it the discovery of a new future in the late nineteenth century, a discovery that, as I will argue in "Propheteering," entailed a cultural reimagination of the future as predictably unpredictable—in other words, modern.

The last decade of the nineteenth century was awash in literary futurism, as a review in *The Literary World* in 1890 made clear: "books on the twentieth or twenty-first century are getting to be so numerous that the whole subject will soon be a deadly bore."² This reviewer's prediction proved false: neither futurist writers nor their readers in the 1890s grew tired of projections that stretched well into the next century and often into the next millennium. As Nathaniel Hawthorne's son Julian observed in an 1891 essay titled "The New Columbus," "It is noticeable that, at this moment . . . prophecies are more than frequent, and more comprehensive

¹ Edward Shanks, "The Work of Mr. H. G. Wells," *London Mercury* 5 (March-April 1922): 506-18, in Patrick Parrinder, ed., *H. G. Wells: The Critical Heritage* (New York: Routledge, 1972), 255-57, quotation on 255.

² Quoted in Kenneth M. Roemer, *The Obsolete Necessity: America in Utopian Writings, 1888-1900* (Kent, OH: Kent State University Press, 1976), 7.

than usual in their scope.”³ Geologist and mining engineer Clarence King agreed, citing an unprecedented “volume of uninspired [secular] forecast” in 1892.⁴ And journalist John Hanson Beadle noted in the same year that “[t]his era is singularly prolific of books like *Caesar’s Column* and *Looking Backward*, with minor articles in which the future is portrayed.”⁵

Commentators in the 1890s found a futurism embodied in the nation itself as well as in the individual experience of its citizens. With its western frontier proclaimed closed by the Superintendent of the Census in 1890 and more famously by Frederick Jackson Turner in 1893, the nation’s expansionism manifested itself in international economic markets and an increasingly aggressive foreign policy.⁶ In 1893 government officials and industrialists alike predicted for the coming century dramatically expanded economic and transportation networks that would catapult the United States to its rightful position as overseer of the empire of the Western hemisphere. International merchant W. R. Grace and William Eleroy Curtis, director of what would become the Pan-American Union, both envisioned railway connections from New York or Chicago to Buenos Aires, and Treasury official Asa C. Matthews imagined an American

³ Julian Hawthorne, “The New Columbus,” *Arena*, June 1891, 1, quoted in Karen Sue Kimball, “‘The Curious Vagaries of Visionaries’: A History of the American Future, 1880s-1910s” (PhD diss., Emory University, 1996), 49. Kimball’s unpublished dissertation, a thematic analysis of American literary futurism in the late nineteenth and early twentieth centuries, is concerned primarily with constructions of class, race, and gender in futurist writing, not with the practices and perceptions of forecasting that I examine here. I am indebted to Kimball’s work for several of the primary sources and quotations I use in this chapter to illustrate the late-century fascination with the future.

⁴ Clarence King, “The Education of the Future,” *Forum*, March 1892, 20, quoted in Kimball, “‘The Curious Vagaries of Visionaries,’” 50.

⁵ John Hanson Beadle, “All Prophecy is Futile,” in Dave Walter, ed., *Today Then: America’s Best Minds Look 100 Years into the Future on the Occasion of the 1893 World’s Columbian Exposition* (Helena, MT: American & World Geographic, 1992), 212, quoted in Kimball, “‘The Curious Vagaries of Visionaries,’” 50.

⁶ The frontier had long been associated with ideals of progress and Manifest Destiny throughout much of the nineteenth century, well before Turner’s famous pronouncement. Through popular literary accounts of the railroad as the “progress of the age” to the Currier and Ives lithographs that depicted a civilizing engine of progress reshaping the American West to an extensive literature on the democratic ideal of progress, Americans of the mid-nineteenth century encountered the idea of the future framed by nationalist imperatives of technical innovation and geographic expansion. For some of the contemporary accounts of the ideal of progress, see James Parton et al., *Sketches of Men of Progress* (n.p.: New York and Hartford, 1870-71); Charles Louis Flint, et al., *One Hundred Years Progress of the United States* (Hartford, CT: L. Stebbins, 1873); Theodore D. Woolsey, et al., *The First Century of the Republic: A Review of American Progress* (New York: Harper and Brothers, 1876); n.a., *Industrial America; or Manufacturers and Inventors of the United States: A Biographical and Descriptive Exposition of National Progress* (New York: Atlantic, 1876).

republic spanning both continents that would ““be the most perfect civilization . . . that the world ever knew.””⁷ In an 1889 essay lamenting “The Extinction of Leisure,” social commentator Alfred H. Peters called the United States “an always living-in-the-future nation,” and a Utah journalist observed in an article on fortune-telling that “[a] morbid desire to get a peep into the future has become almost a craze.”⁸ From foreign policy commentators to fortune-tellers, Americans all, as Clarence King declared in 1892, were prophets: “We live in the future tense. Prediction is the hobby of the age.”⁹

Edward Bellamy’s utopian *Looking Backward* and Ignatius Donnelly’s dystopian *Caesar’s Column*, along with the science fiction of Jules Verne and H. G. Wells, are commonly cited by contemporary commentators and historians alike as the epitome of late-century futurism, but their work represents only a small fraction of the prophecy-making that was the business and hobby of the age. Their literary prophecies circulated among their reading publics right alongside the predictive work of far less famous forecasters, all of whom engaged in propheteering on a regular basis. Government forecast officials in the U.S. Weather Bureau made short-term predictions based on basic principles of scientific meteorology; local “weather prophets” made seasonal forecasts based on vernacular knowledge and “weather lore;” U.S. Department of Agriculture crop reporters made estimates of crop condition and yield that became de facto forecasts in the hands of profit-hungry speculators. Credit reporting agencies like R. G. Dun & Company and the Bradstreet Agency issued credit ratings that predicted whether hundreds of thousands of merchants and businesses were likely to repay their debts;

⁷ W. R. Grace, “A Great Era for South America,” Asa C. Matthews, “The United States of the Americas,” William Eleroy Curtis, “United States to Dominate the Hemisphere,” Erastus Wiman, “A New Field Opens—The Canadian North,” Matthew C. D. Borden, “American Cotton Will Control World Markets,” Warner Miller, “The Nicaraguan Canal is Inevitable,” all in Walter, ed., *Today Then*, 29-31, 49-50, 87-88, 116-20, 146-47, 150-51, quotation on 50.

⁸ Alfred H. Peters, “The Extinction of Leisure,” *Forum*, August 1889, 692, quoted in Kimball, “The Curious Vagaries of Visionaries,” 49; “Fortune-telling,” *Deseret (UT) News*, February 12, 1898.

⁹ King, “The Education of the Future,” 20, quoted in Kimball, “The Curious Vagaries of Visionaries,” 12.

traders on the floors of futures exchanges bought and sold predictions of wheat prices, as did rural “bucket shop” gamblers. Fortune-tellers working in major cities and traveling through rural areas peddled their forecasts of romantic and financial fortunes to any individual willing to pay five cents for a glimpse of her future, and trance mediums performing in packed theaters delighted their audiences by summoning foreknowledge from the spirit world. Biblical prophecy writers, revivalists, and evangelists circulated their premillennial predictions of the Second Coming through printed texts, speaking tours, prophecy conferences, and Bible schools—and found, in the late century, a growing audience of believers from all classes.¹⁰ Technological forecasters—inventors, engineers, scientists, and writers among them—made frequent predictions about the feasibility and social effects of particular technological innovations in the 1890s and into the twentieth century.¹¹ And judges, lawyers, and members of the court all engaged in forecasting on a regular basis, according to Oliver Wendell Holmes’s theoretical reformulation in his famous *Path of the Law* of 1897, which classified the law as a “body of . . . systematized prediction,” or in other words, a series of predictions about how jurists and citizens could expect the courts to rule in response to any given action.¹² Even industrial reformers sought to reconfigure the workplace by introducing top-down management methods that monitored and predicted the movement of every work piece on the shop floor as it moved from one stage of production to the next.

The occasion of the World’s Columbian Exposition in Chicago, which opened on May 1, 1893, turned seventy-four more Americans into prophets. The American Press Association, a

¹⁰ Paul S. Boyer, *When Time Shall Be No More: Prophecy Belief in Modern American Culture* (Cambridge, MA: Belknap Press, 1999 [1992]), 80-100.

¹¹ For a quantitative analysis of technological forecasting at the turn of the century, see George Wise, “Technological Prediction, 1890-1940” (PhD diss., Boston University, 1976); George Wise, “The Accuracy of Technological Forecasts, 1890-1940,” *Futures* 8, no. 5 (1976): 411-19.

¹² Oliver Wendell Holmes, Jr., *The Path of the Law*, 10 Harvard L. Rev. 457-78 (1897). I am indebted to Chris Capozzola for directing me to this source.

New York newspaper syndicate that was among the national leaders in an increasingly crowded “ready-print” industry, solicited contributions from prominent Americans for a “Chapter of Forecasts,” a collection of predictions regarding American life one hundred years hence. These prophecies circulated widely between March and May 1893, when they were grouped into weekly segments and published in hundreds of weekly newspapers and in the Sunday edition of major daily newspapers for the eleven weeks leading up to the Exposition’s opening. Many of the seventy-four social commentators, a group that included labor leader Terrence Powderly, industrialist George Westinghouse, Secretary of Agriculture Jeremiah Rusk, liberal theologian Moncure Conway, retail magnate John Wanamaker, reformer Henry George, activist Mary Elizabeth Lease, Populist Ignatius Donnelly, and renowned politician William Jennings Bryan, received a list of thirty-three questions asking them to speculate on the future of corporate wealth and labor relations; possible regulation of the railroads and telegraph; monetary and legal systems; the structure of federal government and political parties; technological innovations and the agricultural economy; the fate of the English language, American architecture, music, drama, and literature; the state of hospitals, prisons, and schools; the social roles of women and Native Americans; and whether Americans of the 1990s would enjoy more happiness, health, and prosperity than their nineteenth-century predecessors.¹³ (Celebrated war correspondent and novelist Richard Harding Davis issued a two-sentence reply in which he refused to answer any of the questions on the grounds that they were “too solemn.”¹⁴)

Journalist and author of the American West John Hanson Beadle closed the APA’s “Chapter of Forecasts” on a skeptical note. Beadle argued that prophecy was a futile enterprise largely because of the unpredictability of technological innovation and scientific discovery. In

¹³ Walter, ed., “Introduction,” in *Today Then*, 13-21.

¹⁴ Richard Harding Davis, “Please Excuse Me . . .” in Walter, ed., *Today Then*, 101.

Beadle's logic, the linear march of scientific and technological progress paved an unpredictable route to modernity since no one could accurately predict the economic and social implications of major discoveries and inventions: "The prophet is compelled to judge from the forces in operation in his time, and the wisest man cannot possibly foresee the results of the next invention." Beadle pointed to the folly of forecasters who predicted that Christianity would meet its end in the twentieth century, or that, according to trends in the tenth census of 1880, the black population would soon exceed the white in eight southern states. "Of all these forecasts," he declared, "one thing may be said with tolerable certainty: not one of them will be verified in its essential details."¹⁵ The future, Beadle believed, was predictably unpredictable.

Beadle's logic of certain uncertainty captured the fundamental tension of the late nineteenth century age of prediction, the tension between the twin forces of determinism and indeterminacy. William James, the nineteenth-century thinker most concerned with the complexities of chance, crystallized this tension in "The Dilemma of Determinism," an address he delivered at the Harvard Divinity School in 1884. Subsequently published in the *Unitarian Review* that same year and in *The Will to Believe* in 1896, this essay was essentially James's paean to chance, an impassioned reformulation of chance as a wondrous and invigorating pluralism of possibilities, "the vital air which lets the world live, the salt which keeps it sweet."¹⁶ Not a "metaphysical pestilence," as conventional morality would have it, James's chance was a value-neutral "gift," a gift that might be good, might be bad, and might not even be received at all.¹⁷ For James, the most daunting epistemological problem of the late nineteenth century was how to reconcile a traditionally deterministic worldview with an increasingly uncertain world.

¹⁵ John Hanson Beadle, "All Prophecy is Futile," in Walter, ed., *Today Then*, 212-13, quotation on 213.

¹⁶ William James, "The Dilemma of Determinism," in *The Will to Believe and Other Essays in Popular Philosophy, and Human Immortality* (New York: Dover Publications, 1956), 179.

¹⁷ James, "The Dilemma of Determinism," 159.

And, as James argued in 1884, such a worldview would have to change to fit a new world of chance.

Recent cultural and literary histories of chance have rightfully situated “The Dilemma of Determinism” at the center of the late-nineteenth-century reappraisal of uncertainty, but they have not explicitly addressed an important theme in James’s argument: predictability.¹⁸ In setting out definitions of determinism and indeterminism at the start of his address, James points to predictability as the animating force behind each stance:

if we are determinists, we talk about the infallibility with which we can predict one another’s conduct; while if we are indeterminists, we lay great stress on the fact that it is just because we cannot foretell one another’s conduct, either in war or statecraft or in any of the great and small intrigues and businesses of men, that life is so intensely anxious and hazardous a game.¹⁹

But, James continued, putting too much stock in predictability or bemoaning the lack thereof was positively wrongheaded. The empirical and ostensibly objective nature of forecasts, which he called “the wretched insufficiency of this so-called objective testimony,” was not the right way to think about thinking. Predictability for James was irrelevant, since human thought and action hinged not on verifiable externalities but rather on what he called “postulates of rationality,” interior individual belief systems that afforded a more flexible mode of apprehending the world. But, as James acknowledged in his address, predictability was hardly irrelevant for most Americans. He went on to point to the widespread but unfounded fear of unpredictability, noting that

many persons talk as if the minutest dose of disconnectedness of one part with another, the smallest modicum of independence, the faintest tremor of ambiguity about the future,

¹⁸ For recent discussions of “The Dilemma of Determinism” as a fundamental work in the cultural and literary redefinition of chance in the late nineteenth century, see T. J. Jackson Lears, *Something for Nothing: Luck in America* (New York: Viking, 2003), 221-23; Jason Puskar, “Underwriting the Accident: Narratives of American Chance, 1871-1935” (PhD diss., Harvard University, 2004), 8-9.

¹⁹ James, “The Dilemma of Determinism,” 152.

for example, would ruin everything, and turn this goodly universe into a sort of insane sand-heap or nulliverse, no universe at all.²⁰

The popular fear of the “insane sand-heap,” as James termed this cultural anxiety over unpredictability, was indeed emblematic of the late-century cultural crisis of certainty that, as I will illustrate in subsequent chapters, transformed the imagination and the forecasting of the future.

The postbellum transformation of the United States into an urban-industrial power brought with it structures of economic and cultural certainty. Transportation and communication networks laid the groundwork for a national economy as four more transcontinental railroad lines and their branches, along with telegraph lines, spanned the country in the 1870s and 1880s, providing both the material and the management to fuel a new industrial economy.²¹ Within the railroad, textile, metal, and machinery industries, the horizontal and vertical integration of companies brought not only astonishing rates of economic growth but also an increasingly concentrated and consolidated corporate structure based in urban financial centers that relied heavily on economic prediction in the form of stock markets, futures trading, and business forecasting. As Jackson Lears notes, “[t]he creation of monopolistic corporations was the single most successful effort to minimize risk and ensure predictable profitability,” and capitalists in general, as David Noble puts it, must “routinely anticipate the future in order to survive.”²²

The rise of system in management, best epitomized by the development of scientific management in the work of Frederick Winslow Taylor in the 1880s and 1890s, was animated by

²⁰ James, “The Dilemma of Determinism,” 154-55.

²¹ Alfred D. Chandler, *The Visible Hand: The Managerial Revolution in American Business* (Cambridge, MA: Belknap Press, 1977).

²² Lears, *Something for Nothing*, 188-89; David Noble, *America by Design: Science, Technology, and the Rise of Corporate Capitalism* (New York: Oxford University Press, 1977), quoted in Alan Trachtenberg, *The Incorporation of America: Culture and Society in the Gilded Age* (New York: Hill and Wang, 1994 [1982]), 64.

the desire to eliminate the uncertainty of the shop-floor production flow controlled by the workers and replace it with a management system that ensured predictable rates of production and profit.²³ And the late-century construction of large-scale technological systems—particularly in transportation, communication, and electrification—created more predictable (although certainly not always reliable) flows of people, products, knowledge, and power through the American landscape. The telegraph network that bound the nation together with over 54,000 miles of Western Union wire in 1870 afforded Americans living in one part of the country an unprecedented degree of certainty regarding news and markets of a distant locale; indeed, as one observer noted in 1870, the telegraph had “made all the leading papers so nearly alike that one does not differ in that respect materially from the others.”²⁴ In addition to passengers and freight, railroads carried with them an increasing time-consciousness that, along with the standardization of time zones in 1883, helped fashion a late-century culture of regularity, predictability, and certainty.

But, as I will illustrate in what follows, these structures of economic and cultural certainty were embedded within a late-nineteenth-century age of uncertainty. The volatility of postbellum national and global markets subjected producers and consumers alike to persistent economic uncertainties, and, as Mark Twain, Charles Dudley Warner, and Henry George all made clear, the Gilded Age yielded progress and profits for a few and poverty for many. George’s 1870 *Progress and Poverty*—which found its way into the hands of two million readers by the turn of the century—asserted that if eighteenth-century “visions of the future” had

²³ On Taylorism and the rise of scientific management, see Hugh G. J. Aitken, *Taylorism at Watertown Arsenal: Scientific Management in Action, 1908-1915* (Cambridge, MA: Harvard University Press, 1960); Robert Kanigel, *The One Best Way: Frederick Winslow Taylor and the Enigma of Efficiency* (New York: Viking, 1997); Samuel Haber, *Efficiency and Uplift: Scientific Management in the Progressive Era, 1890-1920* (Chicago: University of Chicago Press, 1964).

²⁴ “Western Union Telegraph,” *New York Times*, October 13, 1870; quoted in Trachtenberg, *The Incorporation of America*, 124.

foreseen the astonishing material progress of the nineteenth century—the advent of the steamship, railroad, mechanized reapers and threshers, immense (and immensely productive) factories that housed powerful steam hammers and precision machine tools—they surely would have predicted a moral “golden age” for all, not an age in which an “immense wedge” divided the prosperous from the poor.²⁵ In what William Dean Howells famously termed the “economic chance world” in 1890, 11 million of the nation’s 12 million families earned less than \$1,200 annually (with the average income of \$380 falling below the poverty line), while the combined income of the nation’s poorest 50 percent did not even equal the income of the wealthiest 1 percent.²⁶ Only the Gilded Age tycoons at the extreme upper end of the economic spectrum—everyone else fell on the wrong side of George’s “immense wedge”—were insulated from the fluctuations of the market.

National and international markets of the late nineteenth century were afflicted by extreme economic instability as a result of industrial overproduction and downspiraling commodity prices. In the wake of the Panic of 1873, the future of businesses was fundamentally uncertain, as six thousand businesses failed in 1874 and up to nine hundred shut down each month in 1878, leading some commentators of the time to estimate a 95 percent rate of business failure in the 1870s and 1880s.²⁷ Uncertainty afflicted the entire American economy, as evidenced by unpredictable demand for commodities, keen competition among producers that

²⁵ Trachtenberg, *The Incorporation of America*, 44; Henry George, *Progress and Poverty: An Inquiry into the Cause of Industrial Depressions, and of Increase of Want with Increase of Wealth—The Remedy* (New York: D. Appleton, 1880 [1879]), 7, 8, 11.

²⁶ William Dean Howells, *A Hazard of New Fortunes* (New York: Penguin Books, 2001 [1890]), 396; Trachtenberg, *The Incorporation of America*, 99.

²⁷ Trachtenberg, *The Incorporation of America*, 39, 80. Popular anxiety over small business failure persisted throughout the nineteenth century, as evidenced by the staying power of the commonly cited (but never substantiated) 97 percent failure rate statistic that echoed in speeches, novels, congressional reports, private diaries, and texts from Thoreau’s 1854 *Walden* to Russell Conwell’s “Acres of Diamonds,” a speech he gave over six thousand times between 1870 and his death in 1925. On the circulation of this dire statistic, see Sandage, *Born Losers*, 7-8.

rendered their individual fates even more uncertain, unforeseeable surpluses and resulting price deflation on the international market, for farmers, uncertain access to agricultural credit, and for industrial workers, unforeseen wage cuts and erratic periods of employment.²⁸

Such uncertain futures for capitalists and workers alike resulted in the unprecedented labor-capital conflict that posed an immediate and serious threat to any kind of socioeconomic stability. As a journalist described labor's uprising in 1877, "'Sudden as a thunderbolt, the crisis came upon the country. It seemed as if the whole social and political structure was on the very brink of ruin.'"²⁹ This precariousness of the labor-capital relationship persisted throughout the late nineteenth century: nearly 7 million workers participated in nearly 37,000 strikes between 1881 and 1905, with almost 700,000 striking in 1886, when the push for eight-hour day legislation was at its strongest. The Great Strike of 1877; Chicago's Haymarket riot on May 3, 1866; and the Pullman Strike of 1894 were but three of the most violent manifestations of the uncertainty of what late-century commentators termed "the labor question."³⁰

America's industrial workers—who accounted for one-third of the nation's population by 1900, and one-third of whom were immigrants—experienced economic uncertainty on an individual as well as a collective basis. Many laborers lived crowded into squalid tenement houses like the ones immortalized by photographer and social reformer Jacob Riis in his 1890 *How the Other Half Lives*, places where the health and welfare of the American working class were always uncertain.³¹ Economic data from the end of the 1880s reveals the uncertain financial future of the working class: 40 percent of industrial workers fell below the poverty line of \$500 in annual earnings, unskilled laborers averaged a daily wage of \$1.50, and

²⁸ Ibid., 39.

²⁹ Quoted in Ibid., 70-71.

³⁰ Trachtenberg, *The Incorporation of America*, 80, 89.

³¹ Ibid., 87-88.

unemployment rates soared to heights of 16 percent during downturns in the mid-1870s and mid-1880s.³² Basil March, William Dean Howells's protagonist and social conscience in the 1890 novel *A Hazard of New Fortunes*, pointed to such financial uncertainty in his indictment of the "economic chance world":

It ought to be law as inflexible in human affairs as the order of day and night in the physical world, that if a man will work he shall both rest and eat, and shall not be harassed with any question as to how his repose and provision shall come. . . . But in our state of things no one is secure of this. No one is sure of finding work; no one is sure of not losing it. I may have my work taken away from me at any moment by the caprice, the mood, the indigestion, of a man who has not the qualification for knowing whether I do it well or ill.³³

Economic uncertainty followed the American industrial laborer from his tenement to the shop floor. Those workers lucky enough to find and keep their jobs faced on a daily basis the dangerous uncertainty of increasingly frequent—but unpredictable—industrial accidents. As Jackson Lears notes, "the rise of industrial capitalism sharpened the sense of unpredictability in the human imagination of disaster."³⁴ While the individual laborer in a textile factory, steel plant, or roundhouse no doubt was the most keenly aware of the unpredictability of industrial accidents, the American legal system and insurance industry also contended with—in aggregate—the very same uncertainty. Ever more common industrial accidents, steamboat explosions, and railroad collisions confounded attempts to assign legal culpability. As literary historian Nan Goodman has illustrated, the embeddedness of such accidents in large-scale technological systems rendered their causation legally uncertain, and thus, late-nineteenth-century legal frameworks were revised to account for a new kind of negligence.³⁵ The social

³² *Ibid.*, 90-91.

³³ Howells, *A Hazard of New Fortunes*, 396.

³⁴ Lears, *Something for Nothing*, 193.

³⁵ Nan Goodman, *Shifting the Blame: Literature, Law, and the Theory of Accidents in Nineteenth-Century America* (New York: Routledge, 1999), chap. 4.

costs of industrial accidents in this era were equally uncertain, and the late nineteenth century witnessed an expansion of the insurance industry and the spread of life insurance firms to deal with new forms and frequencies of industrial risk.³⁶ And, as literary historian Jason Puskar has recently argued, the postbellum insurance industry did not merely react to the catalogue of hazards that characterized urban industrial life, but rather actively contributed to a late-century cultural reimagination of accident, risk, and uncertainty by publishing trade periodicals that included literary depictions of the unpredictable but ubiquitous accidents against which the reasonable American should be insured.³⁷

Unequal distribution of wealth, volatile markets, labor unrest, and industrial accidents clearly illustrate the perils of economic uncertainty in the Gilded Age, but the “economic chance world” also promised prosperity to those with the capital and nerve to engage in financial speculation. And Americans, as English barrister Andrew Steinmetz observed in his 1870 treatise on gambling, were an “intensely speculative” lot.³⁸ Within this economy that so richly rewarded speculative risk, as Robert Wiebe observes, “[b]y reputation, the men of the late nineteenth century who understood the currents about them, and the future as well, were the successful businessmen. Friends called them the prophets of progress, foes the evil wizards of manipulation.”³⁹ Wiebe’s businessmen were not the only prophets of profit; financial prediction was both an individual and a collective endeavor, as evidenced by the increasing popularity of

³⁶ Lears, *Something for Nothing*, 200-201.

³⁷ Jason Puskar, “William Dean Howells and the Insurance of the Real,” *American Literary History* 18, no. 1 (2006): 29-58.

³⁸ Andrew Steinmetz, *The Gaming Table: Its Votaries and Victims, In All Times and Countries, especially in England and in France* (London: Tinsely Brothers, 1870), 221, quoted in Clemens J. France, “The Gambling Impulse,” *American Journal of Psychology* 13, no. 3 (1902): 370.

³⁹ Wiebe, *Search for Order*, 17-18.

gambling and lotteries in the late nineteenth century, as well as the concomitant explosion of futures trading and the credit rating industry.⁴⁰

Although legislation prohibited gambling (other than horse-racing) in most states by the turn of the century and reformers shut down lotteries in the Northeast, a thriving gambling culture persisted in the world of policy play, or “numbers,” which amounted to small side bets placed on formal or informal lotteries. In the 1890s, New York’s “policy kings” controlled a highly systematized enterprise that involved local parlors and their policy “writers,” bribed police protection, encrypted telegraphic communication of lottery results in distant cities, and, most importantly, the crowds of policy players that included the working and poorer classes, men and women, black and white citizens.⁴¹ The other end of the economic spectrum placed bets not in policy parlors but on the floors of commodity exchanges: the Gilded Age was the heyday of professional futures trading, an industry that took off and became increasingly systematized in the 1870s and 1880s, until it dominated the exchanges by the 1890s. (In 1888, more imagined wheat than real wheat was traded on U.S. exchanges nationwide.) Bucket shops—between eight hundred and a thousand small-town brokerage offices scattered across the country—incorporated rural Americans into this speculative economy and essentially “brought futures to the masses.”⁴²

Speculating on wholesalers’ futures was just as profitable as speculating on wheat futures in the late nineteenth century. Assessing creditworthiness became increasingly difficult in a national market: informal local networks of credit risk assessment proved to be insufficient protection given the nation’s geographical span, increasingly mobile population, and expanding

⁴⁰ Lears, *Something for Nothing*, 148, 173.

⁴¹ Fabian, *Card Sharps and Bucket Shops*, 112, 136-42.

⁴² Ibid., 156-57, 191; David Hochfelder, “‘Where the Common People Could Speculate’: The Ticker, Bucket Shops, and the Origins of Popular Participation in Financial Markets, 1880-1920,” *Journal of American History* 93, no. 2 (2006): 335-58; quotation in Jonathan Ira Levy, “Contemplating Delivery: Futures Trading and the Problem of Commodity Exchange in the United States, 1875-1905,” *American Historical Review* 111, no. 2 (2006): 316.

volume of trade, and thus the credit rating industry expanded dramatically in the late nineteenth century. Credit reporting was a high-volume industry of the Gilded Age: R. G. Dun & Company boasted 7,000 subscribers in 1870 and approximately 40,000 in the 1880s, and it reported on over 20,000 businesses in 1859, over 430,000 in 1870, 764,000 in 1880, over 1.1 million in 1890, and over 1.2 million in 1900.⁴³ Dun and the rival Bradstreet Agency were hardly the only agencies in operation in the last quarter of the century: so many competitors popped up that, according to a Dun insider, credit reporting agencies were ““getting as thick as blackberries.””⁴⁴

The unprecedented demand for credit rating agencies in the late nineteenth century revealed an uncertainty that was at once economic and social. In the early nineteenth century, credit information was gleaned from informal local networks of acquaintances, other merchants’ impressions, letters of recommendation, associations of merchants, and mutual protection societies—in short, the testimony of local authorities regarding the history of a merchant’s financial performance in primarily local transactions.⁴⁵ But as railroad and telegraph technologies linked first regional and then national markets in the mid to late nineteenth century, and small towns became linked into far-reaching regional economies, communication networks, and urban bureaucracies, creditors and all Americans had to negotiate newly uncertain social relations in a world no longer made up of Wiebe’s “island communities.” Economic and social connections to far-off places were neither simple nor straightforward; the transcontinental railroads, according to Wiebe, “gave the sudden impression of an integrated country,” but such rapid integration brought not only unprecedented access to distant places and people but also

⁴³ Rowena Olegario, “Credit Reporting Agencies: A Historical Perspective,” in *Credit Rating Systems and the International Economy*, ed. Margaret J. Miller (Cambridge, MA: MIT Press, 2003), 122-23.

⁴⁴ John H. Smith to R. G. Dun & Co., [1877?], Dun Scrapbook, p. 88, Dun & Bradstreet Collection, quoted in Madison, “The Evolution of Commercial Credit Reporting Agencies in Nineteenth-Century America,” 182.

⁴⁵ Sandage, *Born Losers*, 100-101.

unprecedented social anxieties over how to relate to the remote.⁴⁶ And the telegraph and telephone, not only the railroad, contributed to an image of a nation suddenly—and by some accounts violently—yoked together by an expansive network of wires, wires that were commonly imagined as menacing octopus tentacles and spider webs.⁴⁷ Wiebe best describes the social uncertainties of this “distended” society: “As men ranged farther and farther from their communities, they tried desperately to understand the larger world in terms of their small, familiar environment. They tried, in other words, to impose the known upon the unknown, to master an impersonal world through the customs of a personal society.”⁴⁸

Wiebe’s small-town dwellers were not the only ones to face the prospect of “impos[ing] the known upon the unknown.” The late nineteenth century witnessed an epistemological crisis of certainty in which traditional ways of knowing no longer fit the “chance world” they were supposed to explain. The decline of religious orthodoxy in the face of an increasingly liberal theology and the influence of Darwinian theory on social thought are two of the most far-reaching epistemological shifts that destabilized established modes of thought. The late-nineteenth-century “erosion of determinism” identified by philosopher of science Ian Hacking meant the decline, by the turn of the twentieth century, of the traditional model of causation in which the past determined the future.⁴⁹ In simplest terms, the world in 1900 was no longer an epistemologically predictable place. A positivistic universe gradually yielded to a probabilistic universe, and, as Hacking puts it, “[a] space was cleared for chance.”⁵⁰ Such a space was cleared

⁴⁶ Wiebe, *Search for Order*, 11.

⁴⁷ Robert MacDougall, “The Wire Devils: Pulp Thrillers, the Telephone, and Action at a Distance in the Wiring of a Nation,” *American Quarterly* 58, no. 3 (2006): 715-41.

⁴⁸ Wiebe, *Search for Order*, 12.

⁴⁹ Ian Hacking, “Nineteenth-Century Cracks in the Concept of Determinism,” *Journal of the History of Ideas* 44, no. 3 (1983): 455-75.

⁵⁰ Ian Hacking, *The Taming of Chance* (Cambridge: Cambridge University Press, 1990), 1.

by, among others, probability theorists, social scientists, and pragmatist philosophers, all of whom responded to and embraced new formulations of uncertainty in their work.⁵¹

The economic, social, and epistemological uncertainties I have described thus far found expression in various late-century cultural formations, formations that reflected but also shaped an increasing popular acceptance of chance.⁵² To take one example, the rise of academic folklore studies and increased journalistic coverage of folk beliefs in the 1880s and 1890s can be explained, as it is by Jackson Lears, as a preservationist impulse to collect and classify relics of premodern belief systems.⁵³ But the unintended consequence of such scholarly and popular scrutiny of rituals, charms, portents and the like was that these predictive mechanisms—tools for reckoning with chance—became increasingly assimilated into mass culture. Similarly, works of American literary realism and naturalism in the late nineteenth century circulated among their reading publics a new poetics of unpredictability by commonly depicting characters reckoning—often unsuccessfully—with the forces of chance they could neither predict nor control.

Such a poetics of unpredictability is evident in the literary design, devices, and denouements of works by William Dean Howells, Frank Norris, and Theodore Dreiser, arguably the three most famous literary experimenters with chance at the turn of the century. The aim of Dreiser's *Sister Carrie* (1900), as he told the *St. Louis Post-Dispatch* in 1902, was “to show two

⁵¹ Stephen M. Stigler, *The History of Statistics: The Measurement of Uncertainty before 1900* (Cambridge, MA: Belknap Press, 1986); Theodore Porter, *The Rise of Statistical Thinking, 1820-1900* (Princeton: Princeton University Press, 1986); Lorenz Krüger, Lorraine J. Daston, and Michael Heidelberger, eds., *The Probabilistic Revolution*, vol. 1 (Cambridge, MA: MIT Press, 1987); Thomas 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); Dorothy Ross, *The Origins of American Social Science* (New York: Cambridge University Press, 1991); James Livingston, *Pragmatism and the Political Economy of Cultural Revolution, 1850-1940* (Chapel Hill: University of North Carolina Press, 1994); Louis Menand, *The Metaphysical Club* (New York: Farrar, Strauss, and Giroux, 2001).

⁵² On the late-century culture of chance in the United States, see Lears, *Something for Nothing*, 2003; Puskar, “Underwriting the Accident,” 2004.

⁵³ Lears, *Something for Nothing*, 201-2.

little human beings, or more, playing in and out among the giant legs of circumstance.”⁵⁴ As characters in realist and naturalist novels thread their way through an unpredictable universe, they swerve one way or the other in response to a catalogue of accidental and unforeseen happenings: collisions and derailments involving trains, carriages, and other conveyances; chance meetings between characters; physical dangers such as fires, falls, and riots; and financial windfall, whether stolen from a safe unintentionally left open in *Sister Carrie* or won from a lottery in Norris’s *McTeague* (1899).⁵⁵ The chains of chance occurrences characteristic of literary naturalism frequently culminate in spectacularly unfortunate (and unforeseen) endings, such as Norris’s murderous McTeague’s being stranded in Death Valley, handcuffed to the corpse of his friend, or the equally ironic burial of a greedy capitalist in wheat at the end of Norris’s *The Octopus* (1901). The final scene of Howells’s 1893 *The World of Chance*, a realist novel about the publication of a psychological romance, crystallizes the cultural crisis of certainty in the train-ride reverie of protagonist Percy Bysshe Shelley Ray, a briefly successful sentimental author who

began to wonder if life had not all been a chance with him. Nothing, not even the success of his book . . . was the result of reasoned cause. That success had happened; it had not followed; and he didn’t deserve any praise for what had merely happened. If this apparent fatality were confined to the economic world alone, he would have been willing to censure civilization, and take his chance dumbly, blindly, with the rest. He had not found it so. On the contrary, he had found the same caprice . . . in the world . . . of thinking, the world of feeling. Who knew why or how this or that thought came, this or that feeling?⁵⁶

⁵⁴ “Author of *Sister Carrie*,” *St. Louis Post-Dispatch*, January 26, 1902, p. 4, in Theodore Drieser, *Sister Carrie*, ed. Donald Pizer (New York: W. W. Norton, 1970), 456.

⁵⁵ Puskar, “Underwriting the Accident,” 66-67; Lears, *Something for Nothing*, 186. Puskar, challenging long-standing criticism of Howellsian accident as clumsy plot contrivance, offers a convincing reappraisal of Howells’s purposeful aesthetic of chance.

⁵⁶ William Dean Howells, *The World of Chance* (New York: Harper & Brothers, 1893), 374.

As Ray's musings continue, his explanatory model for his own experience lurches from "It was merely a chance" to "It was Providence" to, in the final sentence, "It was nothing," an ending that one literary critic has deemed "an appropriately pessimistic shrug of the shoulders."⁵⁷ But more than a shrug of the shoulders—whether uncertain or resigned—Howells's ending to *The World of Chance* represents both an embrace of and a struggle with the crisis of unpredictability in late-nineteenth-century America.

As Jackson Lears notes in his recent history of luck in America, in the late nineteenth century, "[c]hance was becoming a legitimate category of scientific thought; certainty was becoming problematic."⁵⁸ But certainty was more than a scientific problem; it was a cultural crisis. Throughout the late twentieth century, historians of the late nineteenth century have commonly conceptualized a modernizing America in crisis. Robert Wiebe's 1967 *The Search for Order, 1877-1920*, which initiated and has influenced nearly all organizational synthesis scholarship, begins with a "crisis in the communities," namely a decline in the political power and moral authority of the community. Wiebe characterizes this crisis, which began suddenly in the mid-1880s and peaked in 1896, as communities' unfulfilled wishes for "self-determination," social cohesion, and social purity in the face of the dramatic changes wrought by industrialization, urbanization, and immigration. Specific threats contributing to this general crisis, in Wiebe's estimation, included the fear of corporate dominance and the concomitant decline of the local entrepreneur; the alienation of the worker; a more intricate and impersonal world of business transactions; Reconstruction's legacy of a rapidly changing power structure

⁵⁷ Howells, *The World of Chance*, 374-75; Scott A. Dennis, "The World of Chance: Howells' Hawthornian Self-Parody," *American Literature* 52, no. 2 (1980): 291.

⁵⁸ Lears, *Something for Nothing*, 212.

involving small farmers and blacks in the South; and nativist anxieties over protecting an ostensible social purity from booming immigrant populations in the urban North.⁵⁹

In *The Emergence of Professional Social Science: The American Social Science Association and the Nineteenth-Century Crisis of Authority* (1977), Thomas Haskell follows Wiebe in his economic explanations for the unprecedented social interdependence of mid- to late-century life, namely the growth of the market, the emergence of the U.S. as an industrial power, the transportation and communication revolutions, and the division and specialization of labor.⁶⁰ In Haskell's formulation, the most important consequence of social interdependence was that causation of human action could no longer be accounted for by traditional explanatory models based on the empirical observation of local or individual forces. Action at a distance, in other words, obscured the causes of action close by. The intellectual elites who ordinarily explained human conduct lost their authority in the context of remote causation, Haskell contends, and thus refashioned themselves as experts within a new intellectual structure: institutional social science.⁶¹

A crisis of authority also animates *No Place of Grace: Antimodernism and the Transformation of American Culture, 1880-1920* (1981), in which Jackson Lears examines the private dimensions of a "crisis of cultural authority" that produced a late-century therapeutic antimodernism. Lears characterizes this crisis not only in the familiar public terms of labor-capital conflict, racial and ethnic politics, and the loss of faith in a liberal individualism increasingly perceived as corrupt, but also in the private terms of the decline of the family as the locus of morality, the spiritual barrenness of deterministic positivist science, and an increasingly liberal and enervated Protestantism that promised little more than spiritual and moral

⁵⁹ Wiebe, *Search for Order*, chap. 3.

⁶⁰ Haskell, *The Emergence of Professional Social Science*, 30.

⁶¹ *Ibid.*, chaps. 1 and 2.

ambiguity.⁶² More recently, literary historian Nan Goodman, in *Shifting the Blame: Literature, Law, and the Theory of Accidents in Nineteenth-Century America* (1998), has identified a late-nineteenth-century “crisis of causation” in which legal responsibility for industrial accidents was obscured by the scale and complexity of technological systems as well as the familiar annihilation of space and time by networks of power and communication.⁶³ Goodman acknowledges the broader epistemological implications of this legal crisis of causation in her assertion that “the late nineteenth century was typified by the proliferation of an epistemological uncertainty—an epistemology that often failed not only to identify a given individual as blameworthy but to associate a given individual with a given act.”⁶⁴

I argue that the crisis of certainty is a central aspect of all these late-century crises—of communities, authority, and causation. In Wiebe’s “crisis in the communities,” the community is weakened by the prospect of having to reckon daily with unpredictable and invisible economic and social forces acting on it from a distance. Haskell acknowledges that his “crisis of authority” hinges on predictability: social scientists’ powers of explanation and prediction were extremely important to an interdependent society, and social science’s predictive capacities ultimately conferred authority on the emerging profession. Lears’s “crisis of cultural authority” and his oft-cited “weightlessness” suggest a discomfort among intellectual elites unable to foresee a fulfilling future for themselves in an increasingly unpredictable modern industrial world. And Goodman’s “crisis of causation” has at its core the problem of predictability, as she acknowledges in her discussion of mid- to late-century legal theorizations and critiques of

⁶² T. J. Jackson Lears, *No Place of Grace: Antimodernism and the Transformation of American Culture, 1880-1920* (Chicago: University of Chicago Press, 1994 [1981]), 5-6, 20-21, 56-57.

⁶³ Goodman, *Shifting the Blame*, 67-68.

⁶⁴ *Ibid.*, 66.

proximate cause, in which the unpredictability of causation inspired a more pragmatic and socially contingent formulation of the law at the turn of the twentieth century.

Although “Propheteering” is the first cultural history of forecasting in late nineteenth century America, the theme of predictability is implicit in many standard narratives of modernization. The organizational synthesis school, business histories, and histories of technology have often foregrounded economic and technological structures of certainty in the late nineteenth century through their emphasis on order, stability, system, and rationality—in short, an increasingly controllable, manageable, and thus predictable modern world.⁶⁵ More recently, histories of science, cultural histories, and literary histories have foregrounded epistemological structures of uncertainty in their emphasis on chance, contingency, and instability—in short, a modern world that, in the late nineteenth century, became predictably unpredictable.⁶⁶ This study seeks to bridge these two historiographical traditions by offering a new narrative of modernization, a narrative that incorporates both the organizational stability of prediction-making institutions and the epistemological instability associated with popular discourse on *the future*.

Prediction was nothing new in the late nineteenth century. Looking far back into the past reveals that looking into the future has always been a basic human activity.⁶⁷ Traditions of

⁶⁵ Wiebe, *Search for Order*; Chandler, *Visible Hand*; Louis Galambos, “The Emerging Organizational Synthesis in Modern American History,” *Business History Review* 44, no. 3 (1970): 279-90; Louis Galambos, “Technology, Political Economy, and Professionalization: Central Themes of the Organizational Synthesis,” *Business History Review* 57 (Winter 1983): 471-93; Thomas P. Hughes, *Networks of Power: Electrification in Western Society, 1880-1930* (Baltimore: Johns Hopkins University Press, 1983); JoAnne Yates, *Control Through Communication: The Rise of System in American Management* (Baltimore: Johns Hopkins University Press, 1989).

⁶⁶ Porter, *The Rise of Statistical Thinking, 1820-1900*; Stigler, *The History of Statistics: The Measurement of Uncertainty Before 1900*; Gerd Gigerenzer, et al., *The Empire of Chance: How Probability Changed Science and Everyday Life* (New York: Cambridge University Press, 1989); Hacking, *The Taming of Chance*; Alain Desrosières, *The Politics of Large Numbers: A History of Statistical Reasoning* (Cambridge, MA: Harvard University Press, 1998); Goodman, *Shifting the Blame*; Menand, *The Metaphysical Club*; Lears, *Something for Nothing*; Puskar, “Underwriting the Accident.”

⁶⁷ Recent trade books in the fields of affective psychology and behavioral economics have focused on the timeless and innate human propensity for prediction and have argued that human decision-making processes are constrained

prediction extend from antiquity through the nineteenth century through religious prophecy, augury, astrology, folk wisdoms, farmers' almanacs, and the like. Current research on affective forecasting by psychologist Daniel Gilbert notes that humans are the only animals with the capacity to imagine the future, and more importantly, argues that our inability to accurately predict our emotional responses to desired future gains (e.g., a big promotion, a new love interest, a luxury car) is responsible for our unhappiness. In short, we are usually wrong when we think we know what will make us happy, Gilbert contends, but we are by nature a future-oriented species.⁶⁸ So humans have always been forecasters, and by Gilbert's account, we have been consistently inaccurate when it comes to predicting the sources of our own fulfillment.

But I argue that this ostensibly timeless human propensity for prophecy was dramatically redefined in the aftermath of the Civil War.⁶⁹ As railroad and telegraph technologies linked first regional and then national markets in the mid to late nineteenth century, prediction took on more than local significance. As local "island communities" became linked into far-reaching communication networks, regional economies, and urban bureaucracies, forecasting became an increasingly high-stakes endeavor amid the economic crisis of certainty, and as predictions circulated like commodities throughout a national economy, they took on cultural as well as economic value amid the epistemological crisis of certainty. Broadly speaking, forecasting found unprecedented import in the late nineteenth century in part because Americans saw the

by our relentless but predictably unreliable attempts to imagine our future selves. See Daniel Gilbert, *Stumbling on Happiness* (New York: Alfred A. Knopf, 2006); Dan Ariely, *Predictably Irrational: The Hidden Forces That Shape Our Decisions* (New York: HarperCollins, 2008); Leonard Mlodinow, *The Drunkard's Walk: How Randomness Rules Our Lives* (New York: Pantheon Books, 2008).

⁶⁸ Gilbert, *Stumbling on Happiness*, 3-25.

⁶⁹ Recent popular books by a business consultant, a physicist, and a mathematician, respectively, have focused on broad trends in the history of prediction, but their work is framed by presentist concerns and does not, in my mind, adequately situate conceptions and cultural practices of prediction in their historical contexts. See William A. Sherden, *The Fortune Sellers: The Big Business of Buying and Selling Predictions* (New York: John Wiley, 1998); Paul Halperin, *The Pursuit of Destiny: A History of Prediction* (Cambridge, MA: Perseus, 2000); David Orrell, *The Future of Everything: The Science of Prediction* (New York: Thunder's Mouth Press, 2007).

future come rushing toward the present at unprecedented speed.⁷⁰ Henry Adams addressed the nineteenth century's accelerating rate of technical innovation and scientific discovery in "A Law of Acceleration" in his autobiography. In 1900, Adams observed,

science now lay in a plane where scarcely one or two hundred minds in the world could follow its mathematical processes; but bombs educate vigorously, and even wireless telegraphy or airships might require the reconstruction of society. If any analogy whatever existed between the human mind, on one side, and the laws of motion, on the other, the mind had already entered a field of attraction so violent that it must immediately pass beyond, into new equilibrium If science were to go on doubling or quadrupling its complexities every ten years, even mathematics would soon succumb. An average mind had succumbed already in 1850; it could no longer understand the problem in 1900.⁷¹

Here Adams captures the intensity of the rate of change in a modern world typified by the famous Dynamo, and his modern moment is indeed at the turn of the twentieth century. But it is important to note Adams's observation that the nineteenth-century world had already stopped making sense to most by 1850.

Like Adams, I am convinced that the discontinuity and epistemological tumult commonly associated with the dawn of the twentieth century had its origins closer to mid-century. Wiebe's *The Search for Order*, begins by describing the changed character of early-twentieth-century life as one that "sought continuity and predictability in a world of endless change."⁷² But as I will demonstrate in subsequent chapters, this search for predictability that Wiebe locates in the early twentieth century had much earlier roots in institutions of antebellum America. In *Something for Nothing*, Jackson Lears observes that "[b]y the turn of the century, neither the cosmos nor the

⁷⁰ Two histories of literary futurism in particular identify a cultural reimagination of *the future* in the late nineteenth century. See I. F. Clarke, *The Pattern of Expectation, 1644-2001* (New York: Basic Books, 1979); Kimball, "The Curious Vagaries of Visionaries": A History of the American Future, 1880s-1910s." I share their conviction that utopian and futurist writing of the time dramatically reshaped popular conceptions of the future, but I consider literary prophecies and representations of the future together with scientific and economic forecasting practices as part of a broader culture of propheteering in the late nineteenth century.

⁷¹ Henry Adams, *The Education of Henry Adams, an Autobiography* (Boston: Houghton Mifflin, 1918 [1907]), 496. I am indebted to Leo Marx for this point.

⁷² Wiebe, *Search for Order*, xiv.

individual seemed as unified or predictable as earlier generations had thought,” but I will illustrate in “Propheteering” that such a faith in predictability began to unravel much earlier in the popular imagination, in the 1870s and 1880s.⁷³

Finally, a word on terminology. Generally speaking, late-nineteenth-century writers used the words *prediction*, *prophecy*, and *forecasting* interchangeably, and for the sake of variety, I have followed suit, except when my historical actors make purposeful semantic distinctions among the terms. The words *prophecy* and *forecast*—and more importantly, their twentieth-century connotations of religion and science, respectively—were not so starkly opposed in the late nineteenth century. The language used to describe prediction is most significant in the context of weather forecasting and fortune-telling, as we will see in chapters four and eight especially. Defining the terms of prophecy was also vitally important to Walt Whitman, who, in an 1872 poem initially composed for Dartmouth’s commencement and later revised as part of the 1881 *Leaves of Grass*, wondered “How can I pierce the impenetrable blank of the future?” (“Thou Mother with Thy Equal Brood,” line 71) In a poem celebrating the birth of a modern democratic America—“a freer, vast, electric world . . . / (The true New World, the world of orbic science, morals, literatures to come,) / Thou wonder world yet undefined, unform’d, neither do I define thee,” (lines 68-70)—Whitman acknowledged the undefineable and incomprehensible nature of the future. Rather than attempt to know the future with any degree of certainty, Whitman opted instead for prophesying in the present:

I watch thee advancing, absorbing the present, transcending the past,
I see thy light lighting, and thy shadow shadowing, as if the entire globe,
But I do not undertake to define thee, hardly to comprehend thee,
I but thee name, thee prophesy, as now, (lines 73-76)

⁷³ Lears, *Something for Nothing*, 211.

For Whitman, as well as the late-nineteenth-century multitudes, prophesying was essential to the making of a modern America.

Chapter 2: Cotton Guessers

One year after the publication of Edward Bellamy's *Looking Backward* in 1888, the U.S. Department of Agriculture's Chief Statistician Jacob R. Dodge wrote that "the vital need of today is a clear and searching glance into the future, a forecast of crop results which shall fairly indicate them in advance."¹ But the lack of agricultural foreknowledge Dodge lamented in 1889 was not for lack of effort. From the 1840s through the early twentieth century, a steadily increasing number of institutions and individuals—among them agricultural journals, federal government statisticians, private commercial forecasters, commodity exchanges, credit reporting agencies, railroad companies, millers and spinners, and farmers' associations—used field agents and crop reporters to assess crop prospects for the upcoming harvest. Farmers, merchants, manufacturers, businessmen, and speculators, among others, then used these published crop forecasts in pursuit of profit.²

In the late nineteenth century, this array of crop estimates, along with a wealth of financial information, circulated ever more rapidly through national and international markets as the quadruplex telegraph and stock ticker enabled instantaneous transmission of market news and prices.³ And the structure of national and international agricultural commodity markets rendered local knowledge of crop conditions of minimal value, since the price a farmer could expect to get for his crop in a local market was primarily determined not by the condition of his neighbor's

¹ U.S. Secretary of Agriculture, *Report, 1889* (Washington, DC: Government Printing Office, 1889), 201, quoted in Emerson M. Brooks, *The Founding of the Crop Reporting Service: A Review of the Struggle to Establish an Agricultural Estimating Service in the U.S. Department of Agriculture, 1863-1903* (Washington, DC: USDA Statistical Reporting Service, 1962), 48.

² USDA, "Practical Results of the Work of the Department of Agriculture: Address Delivered at the Annual Convention of the State Grange of the Patrons of Husbandry at Brandywine Springs, Del.," Report No. 71 (Washington, DC: Government Printing Office, 1901), draft in Crop Report and Historical Materials, 1914-1918, Box 1, Records of the National Agricultural Statistics Service, RG 355, National Archives II.

³ Hochfelder, "Where the Common People Could Speculate," 336-38.

crop but by the aggregated condition of the entire crop throughout the state, the nation, and abroad.⁴ Thus Dodge's call for a "clear and searching glance into the future" hinged on a statistical and bureaucratic mechanism—agricultural statistics—that enabled the valuation of an individual farmer's crop relative to the crops of farmers a state, a region, or half a world away.⁵

Crop reporting proponents in the agricultural press and within the USDA consistently argued throughout the nineteenth century that crop estimates would stabilize agricultural markets by insulating farmers from the power of shrewd speculators and thereby ensuring them fairer prices for their goods. But as I will illustrate in this chapter, crop estimates ultimately rendered the volatile cotton market of the 1890s more unstable than stable during a period in which the USDA's Division of Statistics, a private cotton forecaster named Henry M. Neill, and an association of Georgia cotton growers all produced and circulated predictive agricultural statistics expressly designed to influence cotton prices. I argue that, in the case of cotton, such a proliferation of crop prophecies produced more statistical and economic uncertainty than

⁴ The Chief of the Bureau of Crop Estimates acknowledged this to be true in 1915, but the same general principle applied throughout the late nineteenth century as American farmers increasingly produced goods for sale on national and international markets. Leon M. Estabrook, *Government Crop Reports: Their Value, Scope, and Preparation* (Washington, DC: Government Printing Office, 1915), 9.

⁵ The history of crop forecasting in the United States has drawn little recent scholarly attention. Numerous internal histories of agricultural statistics published by the USDA have narrated the expansion and professionalization of the federal government's crop reporting program as a steady march toward ever more accurate and economically valuable crop estimates. These institutional histories, along with early-twentieth-century commentary on crop reporting and two recent scholarly analyses, have pointed to a 1905 "cotton leak" scandal that uncovered fraud within the USDA's crop estimating program as the origin of modern agricultural statistics, an unfortunate but necessary moment of bureaucratic reform that rendered government crop forecasting a far more certain enterprise. In this chapter I focus instead on the late-century flurry of competing and often contradictory crop estimates issued by the USDA's Division of Statistics, private commercial forecasters, and farmers' associations, and I examine the contested and often contentious practice of constructing crop forecasts in the late nineteenth and early twentieth centuries. For internal histories of crop reporting, see USDA, *The Crop and Livestock Reporting Service of the United States, Misc. Pub. No. 171* (Washington, DC: USDA, 1933); Brooks, *The Founding of the Crop Reporting Service*; USDA Statistical Reporting Service, *The Story of U.S. Agricultural Estimates, Misc. Pub. No. 1088* (Washington, D.C.: USDA, 1969); Frederic A. Vogel, "The Evolution and Development of Agricultural Statistics at the United States Department of Agriculture," *Journal of Official Statistics* 11, no. 2 (1995): 161-80. For recent scholarly analyses of crop reporting, see Robert E. Snyder, "Federal Crop Forecasts and the Cotton Market, 1866-1929," *Journal of Southwest Georgia History* 7 (1989-1992): 40-58; Emmanuel Didier, "Do Statistics 'Perform' the Economy?" in Donald MacKenzie, Fabian Muniesa, and Lucia Siu, eds., *Do Economists Make Markets? On the Performativity of Economics* (Princeton: Princeton University Press, 2007), 276-310.

certainty at the turn of the century. The failure of these three different efforts at statistical control of the cotton market ultimately led the federal government and the public to reimagine agricultural statistics in more probabilistic terms, thereby rationalizing uncertainty into modern agricultural commodity markets.

Histories of commodity trading commonly identify the source of such market volatility as the savvy but unscrupulous speculator, the market-manipulating middleman who profited at the expense of powerless rural producers.⁶ But these accounts overlook the work of the crop forecaster, a statistical middleman who influenced and at times produced the market information speculators used to profit on agricultural commodity trading. Speculators wielded not objective economic data but rather dynamic and at times intentionally manipulated agricultural statistics that were produced by a combination of federal government statisticians, commercial interests, and farmers themselves.

In what follows I trace the origins of crop reporting in the United States, beginning with experimental crop surveys by state agricultural societies, the U.S. Patent Office, and the *American Agriculturist* magazine from the 1840s to the early 1860s. In the wake of the Panic of 1837, Americans suffered higher prices for agricultural commodities and crop failures in 1837 and 1838, and the volume of agricultural imports increased. Farmers in the east were increasingly linked, via a transportation network of roads, canals, and steamships, to their competitors in the burgeoning agricultural markets of the west, particularly in the Ohio Valley and the upper Mississippi Valley. Farmers operating in this economic climate began to articulate

⁶ William Cronon, *Nature's Metropolis: Chicago and the Great West* (New York: W. W. Norton, 1991); Fabian, *Card Sharps and Bucket Shops*; Hochfelder, "Where the Common People Could Speculate."

their demands for quantifiable assessments of increasingly distant markets—in short, agricultural statistics.⁷

Well before farmers, merchants, and manufacturers became interconnected in such a network of crops, cash, and credit, state agricultural societies—motivated by ideals of scientific agriculture and the rhetoric of improvement—began their own systematic assessments of local agriculture. In the first years of the nineteenth century, the Massachusetts Society for Promoting Agriculture circulated a fifty-item questionnaire that posed qualitative questions on farming practices as well as quantitative questions regarding yield per acre, livestock population, prices, seed use per acre, and days of labor required to harvest particular crops like corn, and the Society published the replies in 1807. Ten years later, Virginia’s Albermarle Agricultural Society was established by a group (Thomas Jefferson among them) that named as one of its primary aims agricultural inquiry, including the collection of data on timelines for farm operations, farm labor, and number of farm animals used. Subsequent state-sponsored agricultural surveys, in New York in 1825 and in Massachusetts from 1837 to 1841, extended the efforts of the earlier surveys by state agricultural societies.⁸

In December 1838, President Van Buren urged Congress to expand the scope of the 1840 census beyond population data, and the following year, questions pertaining to agriculture appeared in the census. Questions on livestock and production of major crops yielded state-by-state estimates of “wheat, barley, oats, rye, buckwheat, Indian corn, potatoes, cotton, tobacco,

⁷ Ebling, “Why the Government Entered the Field of Crop Reporting and Forecasting,” 718-20. Ebling points to the 1839 publication of a volume on statistics by Scotsman Archibald Russell as the epitome of this demand for agricultural statistics. See Archibald Russell, *Principles of Statistical Inquiry as Illustrated in Proposals for Urging an Examination into the Resources of the United States with the Census to be Taken in 1840* (New York: D. Appleton, 1939).

⁸ USDA Statistical Reporting Service, *The Story of U.S. Agricultural Estimates*, 2-6.

sugar, and rice” and ultimately produced the first official crop report published by the federal government in 1841.⁹

As the U.S. Census extended its reach from farmhouses to fields, the U.S. Patent Office began a foray into agricultural statistics under the aegis of Henry L. Ellsworth, the Commissioner of Patents from 1836 to 1845. Ellsworth reported to Congress in 1837 that agriculture, unlike commerce and industry, had gotten short shrift from the Patent Office.¹⁰ His proposed solution (for which he requested and received a Congressional appropriation of \$1,000) was a program to distribute seeds and collect crop data. For Ellsworth, the virtue of quantifying agricultural production was that it would insulate producers and consumers alike against economic uncertainty: ““Other enlightened nations have ranked such information amongst the most important in providing for the public wants, guarding against speculation and as a means of estimating the probable state of exchange so far as it is effected upon a surplus or scarcity of the crop.””¹¹ In 1841 Ellsworth published the fruits of his labor: tables of estimated production (for twenty-six states, three territories, and the District of Columbia) of wheat, oats, rye, buckwheat, Indian corn, potatoes, hay, flax and hemp, tobacco, cotton, rice, silk cocoons, sugar, and wine. Ellsworth hoped that his annual tabulation of crop and livestock estimates by state and territory would ““guard against monopoly or an exorbitant price,”” but his annual crop estimating project proved to be short-lived, ending in 1848, three years after he resigned as Commissioner of Patents.¹²

After Ellsworth left the Patent Office in 1845, his successors did not continue making his annual estimates of crop and livestock production between the decennial census, although the

⁹ USDA, *The Crop and Livestock Reporting Service of the United States*, 3; Ebling, “Why the Government Entered the Field of Crop Reporting and Forecasting,” 720-22, quotation on 722.

¹⁰ USDA, *The Story of U.S. Agricultural Estimates*, 8.

¹¹ Quoted in Ebling, “Why the Government Entered the Field of Crop Reporting and Forecasting,” 721.

¹² USDA, *The Story of U.S. Agricultural Estimates*, 8-12, quotation on 22.

Patent Office continued to collect agricultural statistics on various items, including market prices.¹³ In the 1840s and 1850s state agricultural societies called for the gathering and reporting of crop data that would furnish farmers with a competitive advantage in the market. James T. Earle, President of the Maryland Agricultural Society, was not satisfied with the Patent Office's collection of statistics, and he urged state agricultural societies to form a network for the collection and reporting of agricultural statistics (and Earle envisioned that the press would report the findings as well).¹⁴ Unlike Ellsworth, Earle believed that a local organization of farmers, and not the federal government, should be the clearinghouse for agricultural statistics.

Furthermore, the economic logic animating Earle's vision of a network of crop reporters departed in a subtle but important way from Ellsworth's logic. Ellsworth, the Commissioner of Patents who spoke of the need for agricultural statistics in terms of scarcity and surplus, pointed optimistically to greater public economic good and increased overall stability of agricultural markets. Not surprisingly, Earle, the president of the Maryland Agricultural Society, articulated a more explicitly producerist set of concerns in an 1855 circular to other state agricultural societies in which he set out his rationale and plan for the collection, aggregation, and publication of crop data. "For the promotion of the farming interests of the country," Earle wrote, "we are anxious to procure the earliest possible information on the crops, that the same may be laid before the farmer to guide him in the selection of the best time to dispose of the fruits of his labors." Earle also noted that farmers needed to be insulated "from the artful

¹³ Ebling, "Why the Government Entered the Field of Crop Reporting and Forecasting," 723; USDA, *The Story of U.S. Agricultural Estimates*, 12.

¹⁴ Ebling, "Why the Government Entered the Field of Crop Reporting and Forecasting," 723; USDA, *The Crop and Livestock Reporting Service of the United States*, 3-4.

practices of speculators and others.”¹⁵ And not only speculators but also erroneous crop predictions had a deleterious effect on the market, as one journalist noted in 1857:

The season is one of universal abundance, and, in most sections of the country, superabundance, in the greatest of all material blessings, good crops. . . . The croakers of the Spring and early Summer months have been completely silenced. They never had the slightest rational ground to prejudge the grain crop, as they did with such unqualified and mischievous emphasis. Least of all had they reason to suppose or proclaim the opinion that the Great West would not be able to harvest more than sufficient for its own support. In this they only proved themselves greater pests to the community than the backward Spring and unseasonable rains were to the agriculturalist.¹⁶

Earle initiated the process of data gathering in his own state by sending a questionnaire to individual farmers in Maryland and county agricultural societies that included questions on “the state of the crops, whether above or below average, and the causes that had beneficially or prejudicially affected the crops.”¹⁷ Earle intended to synthesize the data into a report on Maryland’s wheat, grass, and oat crops by the first of September and the corn crop by early November.¹⁸ Earle’s project, in the words of a twentieth-century USDA statistician, “was a failure almost as soon as begun,” but he did succeed in generating sufficient interest in and momentum for a crop reporting system.¹⁹ And it is important to note that these attempts at the systematic collection of agricultural statistics by Earle and his predecessors were complemented by the occasional glimpse of crop prospects in various locales provided by newspaper

¹⁵ James T. Earle, circular, 16 July 1855, Crop Report And Historical Materials, 1914-1918, Box 1, RG 355, National Archives II.

¹⁶ “Good Crops and Sound Credit,” *New York Daily Times*, August 13, 1857.

¹⁷ USDA, *The Crop and Livestock Reporting Service of the United States*, 4.

¹⁸ Earle, 16 July 1855, circular, Crop Report And Historical Materials, 1914-1918, Box 1, RG 355, National Archives II.

¹⁹ “This Bureau was established in consequence...” undated manuscript, Crop Report And Historical Materials, 1914-1918, Box 1, RG 355, National Archives II; USDA, *The Crop and Livestock Reporting Service of the United States*, 4.

correspondents who might report on what they had seen and heard of the year's upcoming harvest.²⁰

The next attempt at the systematic collection of agricultural statistics began in 1862, when *American Agriculturalist* editor Orange Judd (who had years earlier mocked Henry Ellsworth's Patent Office statistical project as a "seed store in Washington") formally requested that his subscribers submit crop reports each month from May through September.²¹ Judd then published the data on crop acreage and estimated yield each month, from May to September 1862, with the intent that farmers would be better able to gauge overall production and the relative competitiveness of the market.²² Judd's experiment in collecting and publishing agricultural statistics, albeit short-lived, was especially significant in that his aggregation of his readers' monthly estimates throughout the summer of 1862 amounted to the first published forecasts of the coming harvest.²³

Judd, convinced that farmers were excluded from the circulation of vital supply and demand information, expanded Earle's producerist argument to include the middleman as a victim of the pervasive and seemingly inescapable uncertainty characteristic of the agricultural economy:

Shrewd speculators, who have on hand a large stock of old grain, often circulated newspaper reports to the effect that owing to bad weather, insects, small breadth, etc., there will not be half a crop gathered. On the other hand, as the harvest begins, another class intending to become grain buyers, are interested in magnifying the yield for the purpose of depressing prices. Thus, not only the producers but many dealers themselves, are in a state of doubt and uncertainty. . . . In short, there is such an entire absence of

²⁰ "Prospects of the Crops in Illinois," *New York Daily Times*, July 7, 1855.

²¹ Quoted in USDA, *The Story of U.S. Agricultural Estimates*, 12. In the mid-1850s Judd first collected (in small number) his readers' observations of crop conditions prospects and then published their descriptive accounts by locality. USDA, *The Story of U.S. Agricultural Estimates*, 14.

²² USDA, "The Crop and Livestock Reporting Service of the United States," 3; Ebling, "Why the Government Entered the Field of Crop Reporting and Forecasting," 724; USDA, *The Story of U.S. Agricultural Estimates*, 14.

²³ Vogel, "The Evolution and Development of Agricultural Statistics at the United States Department of Agriculture," 163. Vogel points to Orange Judd's crop estimates in the *American Agriculturalist* as the direct inspiration for the USDA's crop reporting work, which began in July 1863.

reliable statistics that all are in a state of doubt and uncertainty, and none more so that non-commercial producers. This state of things we propose to try to remedy, to a small degree at least, if we can secure the aid and co-operation of our readers.²⁴

Judd's articulation of the crisis of certainty in agricultural markets did not fall on deaf ears: by June of 1862 nearly one thousand subscribers from twenty-one states had responded to his appeals for volunteer crop reporters, who mailed in their completed questionnaires and were then reimbursed for the postage through a subscription discount. Over 1,500 reporters submitted data the following month, but Judd, who had always believed that the collection of agricultural statistics should be administered by the federal government, ended his project in September 1862 and effectively yielded to the USDA, which had been established in May of that year.²⁵

The outbreak of the American Civil War had enormous implications for crop estimating for the rest of the century because it dramatically transformed the domestic and global cotton economy, ultimately bringing into existence what historian Sven Beckert has characterized as “a global empire of cotton.”²⁶ By the eve of the Civil War, cotton textile production dominated global manufacturing, and American slave labor produced the overwhelming majority of cotton used by textile manufacturers in Britain and throughout Europe. But a combination of Confederate export bans and Union blockades during the war years shut off the flow of cotton from the South to Europe, causing the so-called “cotton famine” that plagued Lancashire and other European textile production centers with mill shutdowns, soaring unemployment, and food riots. In the aftermath of the cotton famine, according to Beckert, a global network of cotton production and trade sprung up, linking cotton growers and merchants from India, Egypt, and

²⁴ *American Agriculturalist*, March 1862, p. 72, quoted in Ebling, “Why the Government Entered the Field of Crop Reporting and Forecasting,” 725.

²⁵ Ebling, “Why the Government Entered the Field of Crop Reporting and Forecasting,” 725-26; Brooks, *The Founding of the Crop Reporting Service*, 6.

²⁶ Sven Beckert, “Emancipation and Empire: Reconstructing the Worldwide Web of Cotton Production in the Age of the American Civil War,” *American Historical Review* 109, no. 5 (2004): 1405.

Brazil into the new structures of global capitalism. In the years during and immediately after the Civil War, as cotton merchants and textile mill owners the world over sought, in Beckert's words, "a secure and predictable supply of cotton," the USDA's crop estimating program sought to render the supply of American cotton ever more predictable.²⁷

At the same time that the domestic cotton economy was being permanently reshaped by the Civil War, the USDA launched its crop reporting project. In what follows I discuss the growth of the USDA's crop reporting service from 1862 to the 1890s, outlining the bureaucratic mechanisms by which crop acreage and yield (and subsequently more data) were assessed, reported, tabulated, and distributed as monthly crop reports. The first head of the USDA, Commissioner Isaac Newton of Pennsylvania (who had formerly overseen the Patent Office's agricultural projects), immediately set out a list of priorities for the newly founded department, chief among them "[c]ollecting, arranging, publishing, and disseminating, for the benefit of the nation, statistical and other useful information in regard to agriculture in its widest acception."²⁸ But Newton acknowledged early on that the slow pace of statistical collection and compilation was insufficient for the cycles of agriculture, industry, and market.²⁹ The data from the decennial census, which was two years old by the time it was published, furnished estimated crop yield, but only after agricultural commodities had been valued at market. Historical crop data provided a rather uncertain view of the present, in Newton's estimation:

The census has never returned the yield per acre, nor the number of acres under cultivation. Whether the comparative number of acres was increasing and the yield per acre decreasing, or the contrary, thus showing whether our agricultural production, represented by immense crops, was at the expense of the soil, or whether an improved

²⁷ Ibid., 1408-14, quotation on 1418.

²⁸ United States Commissioner of Agriculture, *Report, 1862* (Washington, DC: USDA, 1863), 20, quoted in USDA, *The Story of U.S. Agricultural Estimates*, 20.

²⁹ USDA, *Monthly Report of the Condition of the Crops* (July 10, 1863, reprint, Washington, DC: National Agricultural Statistics Service, 1988), 1.

system of farming was gradually restoring the exhausted soils of past years, were questions of the highest magnitude but of which no one could speak with any certainty.³⁰

And this lack of certainty, Newton maintained, could easily translate into economic crisis when speculators wreaked their havoc: “Ignorance of the state of our crops invariably leads to speculation, in which oftentimes, the farmer does not obtain just prices, and by which the consumer is not benefited.”³¹

Beginning in 1862, the USDA mailed monthly circulars to farmers that asked for their assessments of current crop conditions and estimated yields. Commissioner of Agriculture Newton and his assistant statistician, Jacob R. Dodge, calculated some rudimentary agricultural statistics by itemizing crop totals by state and then dividing by average yields per acre in order to arrive at total acreage.³² In the spring of 1863 the Division of Statistics was formed within the USDA and began issuing reports on the tenth of each month that provided monthly assessments of crop conditions.³³ The Division of Statistics purposely kept its questionnaire very simple, avoiding “perplexing interrogatories” in favor of two straightforward questions: “the amount sown in 1863 compared with that in 1862, and the appearance of the crops in May and June. The answers are given in figures, by adopting 10 as the representative of an average of the amount of acres sown; making each number below or above it represent one-tenth of a decrease or increase.” The Division of Statistics mailed the circulars on the tenth of each month and asked farmers to mail back their completed questionnaires (at no cost to them) by the end of the month.

³⁰ U.S. Commissioner of Agriculture, *Report, 1862* (Washington, DC: USDA, 1863), 575, quoted in Brooks, *The Founding of the Crop Reporting Service*, 13; USDA, *The Story of U.S. Agricultural Estimates*, 21.

³¹ USDA, *Monthly Report of the Condition of the Crops* (July 10, 1863, reprint, Washington, DC: National Agricultural Statistics Service, 1988), 2.

³² USDA, *The Story of U.S. Agricultural Estimates*, 21-22.

³³ The Division of Statistics (est. 1863) became the Bureau of Statistics in 1903, which was reorganized into the Bureau of Crop Estimates in 1914, then combined with the Bureau of Markets and the Office of Farm Management in 1922 to form the Bureau of Agricultural Economics.

The Division of Statistics then tabulated the data and mailed out the report on the tenth of the following month, along with the next circular.³⁴

The first crop report issued by the USDA, titled *Monthly Report of the Condition of the Crops*, appeared on July 10, 1863 and covered both May and June of that year. The report consisted of an introductory statement from Commissioner of Agriculture Isaac Newton followed by an outline of the purpose, scope, and method of the federal government's crop reporting project. The statistical data was presented in two tables, preceded by a one-paragraph summary overview for each crop that provided a qualitative assessment of acreage and condition, including any noteworthy adverse effects of temperature, drought, and insects. The tables indicated, for each state and each crop, two figures: the acreage in 1863 as compared to the acreage of 1862, and a quantitative assessment of the crop's current condition. Both figures used ten as a baseline, with each number above or below ten representing an increase or decrease of one-tenth. For example, Iowa's reported corn acreage figure for 1863 was 12, indicating a 20 percent increase over the previous year's acreage. The state-level figures were calculated into a national average printed at the bottom of each crop column. The monthly crop report also included a table of weather data that reported the weather's effect on crops by county, counting how many counties had favorable weather to crops, dry but not harmful weather, dry and harmful weather, and wet and harmful weather. The weather table also included monthly rainfall averages based on reports from the Smithsonian's network of volunteer weather observers.³⁵ Subsequent monthly reports also featured articles on various agricultural topics, from grape mildew to foreign grain markets to conversion of foreign metrics.³⁶

³⁴ USDA, *The Story of U.S. Agricultural Estimates*, 22-23, quotation on 23.

³⁵ USDA, *Monthly Report of the Condition of the Crops* (July 10, 1863, reprint, Washington, DC: National Agricultural Statistics Service, 1988), 1-2, 7-9.

³⁶ USDA, *The Story of U.S. Agricultural Estimates*, 24.

The USDA's first foray into monthly crop reporting in 1863 was generally well-received by the *American Agriculturalist* and other farming journals, but, as the inaugural crop report acknowledged, the collection and compilation of statistical responses to just two basic questions was marked by a fair amount of uncertainty. As the first monthly crop report stated, "[t]he correspondents were unknown; who were reliable, from the interest they would take in the proposed plan, could be ascertained by trial only; who would procure the information, necessary to approximate to correctness, was uncertain."³⁷ The development of the USDA's agricultural statistics program and the expansion of its crop reporting network from the mid-1860s through the 1880s was designed, not surprisingly, to standardize such uncertainties out of the crop reporting process and thereby improve the accuracy and relevance of its crop and livestock estimates, as we shall see in what follows.

Almost immediately after its founding in 1863, the Division of Statistics began to cast a wider statistical net over the countryside. In 1866, when Jacob Richards Dodge became the Chief Statistician, the USDA began the publication of regular livestock reports as well as reports on the "condition, acreage, yield per acre, and production of principal crops."³⁸ That year also marked the Division's first inquiry into farm labor wages, which resulted in a January 1867 report that detailed average monthly wages for farm workers by region (North, West, and South).³⁹

From the mid-1860s to the early 1880s, the USDA gradually expanded its staff of crop reporters and created an organizational hierarchy aimed at ensuring efficiencies of data collection, reporting, and tabulation. In April 1864, the Division of Statistics decided to replace

³⁷ USDA, *Monthly Report of the Condition of the Crops* (July 10, 1863, reprint, Washington, DC: National Agricultural Statistics Service, 1988), 2-3.

³⁸ USDA, *The Story of U.S. Agricultural Estimates*, 26.

³⁹ *Ibid.*, 29

what was, in the words of one USDA historian, “an indiscriminate and indefinite number” of crop reporters with one dedicated county correspondent who would then choose up to five assistants who would report to him directly. The county correspondent disseminated circulars to his assistants and then synthesized their responses into a single county-level report to be sent to Washington.⁴⁰ This volunteer network of county-level reporters continued its work until the early 1880s, when it was augmented by a corps of state statistical agents who were paid employees of the Division of Statistics.⁴¹ By 1892, the Division of Statistics, with an annual appropriation of \$136,000, collected and published crop statistics on a grand scale: approximately 15,000 regular crop reporters and 125,000 farmers submitted crop schedules that were then aggregated and published as the monthly crop report, nearly 150,000 copies of which were mailed to the contributing farmers and crop reporters, as well as to the press.⁴²

As it was expanding the reach of its national crop reporting network, the Division of Statistics also began looking abroad, both to foreign markets and to European agricultural statistics programs. In the early 1870s, under Commissioner of Agriculture Frederick Watts, who was keenly interested in improving agricultural statistics, Chief Statistician Jacob R. Dodge went to Europe in 1872 “[t]o perfect exchanges, to establish relations of statistical reciprocity, investigate statistical methods, and thus increase and perfect the resources of the statistical division.” Dodge visited agricultural statistics offices in London, Paris, Berlin, Vienna to survey their operations.⁴³

⁴⁰ USDA, *The Story of U.S. Agricultural Estimates*, 25; USDA, *The Crop and Livestock Reporting Service of the United States*, 4.

⁴¹ USDA, *The Crop and Livestock Reporting Service of the United States*, 4; USDA, *The Story of U.S. Agricultural Estimates*, 35.

⁴² USDA, *The Story of U.S. Agricultural Estimates*, 38.

⁴³ *Ibid.*, 32.

The global depression of 1873 sent cotton prices into freefall, and the price of grain relative to cotton fluctuated wildly, “introducing a new degree of uncertainty into rural producers’ precarious lives,” as Sven Beckert puts it.⁴⁴ With global agricultural commodities in steep decline, Chief Statistician Dodge issued an appeal for greater accuracy in agricultural statistics. In 1874, two years after his visit to European agricultural statistics offices, Dodge told an Atlanta meeting of the National Agricultural Congress that

There is great activity of statistical inquiry at the present time, and but little patience of investigation; there is frequency and flippancy in statement, but less of accuracy and thoroughness. There is a feverish desire to accomplish the census of a continent in one day, and proclaim its results the next. Few take time to weigh facts, sift error from truth, and reach broad and philosophical conclusions. What is wanted in statistics is more of thought and less of flurry, more industry and less precipitancy, sounder judgment and less zeal without knowledge.⁴⁵

In the early 1880s the USDA created an agency in Europe (in the Consul General’s office in London) that would gather useful agricultural statistics and publish them in the USDA’s European Crop Report.⁴⁶ In June 1888, a Congressional act mandated that all U.S. Consular offices furnish to the State Department monthly reports of local crop conditions, which were then published in the Division of Statistics’ monthly report as “Notes on Foreign Agriculture.”⁴⁷

By the turn of the twentieth century, the USDA’s network of crop reporters included 41 state statistical agents and their 7,500 assistants, 2,400 county correspondents and their 6,800 assistants, and 40,000 township or district correspondents.⁴⁸ By 1913 the crop reporting network counted 130,000 people in what the *New York Times* hailed as a “big army of correspondents

⁴⁴ Beckert, “Emancipation and Empire,” 1434.

⁴⁵ USDA, *The Story of U.S. Agricultural Estimates*, 33.

⁴⁶ *Ibid.*, 35.

⁴⁷ *Ibid.*

⁴⁸ USDA, *The Story of U.S. Agricultural Estimates*, 42; USDA, *Yearbook of the United States Department of Agriculture, 1897* (Washington, DC: Government Printing Office, 1898), 269.

engaged in the collection of facts that are of vital importance to the business welfare of the nation.” (see Figure 1).⁴⁹

Table showing the scope of the work involved in the preparation of the several crop reports.

[Key: (A) Acreage; (%a) acreage in per cent of last year; (b) number of breeding sows compared with last year; (c) condition; (d) losses from disease; (e) losses from exposure; (F) final estimates (acreage, production, value); (f) per cent of crops shipped out of county where grown; (h) number stock hogs compared with year ago; (l) cut for silos; (m) per cent of crop of merchantable quality; (n) number; (P) production; (%p) per cent of full crop produced; (q) quality; (r) acreage remaining after abandonment; (s) supplies on farms; (v) values; prices of products marked (v+) in January are asked each month; (w) weight per bushel—or fleece; (Y) yield per acre—or colony.]

Crop	Jan.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Cereals:											
Barley.....	v+	sf			Ac	c	sc	c	Fq	w	Y
Buckwheat.....	v+					Ac	c	c		Pq	F
Corn.....	v+	sfm			Ac	Ac	c	c	c	sPq	Y
Oats.....	v+	sf			Ac	c	sc	c	Fq	w	Y
Rice.....						Ac	c	c	c		cF
Rye.....	v+		c	ro	c	c	APq				AcF
Wheat (all).....	v+	sf				s	c				F
Wheat (spring).....					Ac	c	c		Fq	w	F
Wheat (winter).....			c	ro	c	c	Pq			w	AcF
Forage (grasses):											
Alfalfa hay.....	v+				c	c	c	%p			
Alfalfa seed.....	v+								Y%p		
Blue grass, seed.....					c	c	c	%p			
Canadian peas.....					c	c	c	c	%p		
Clover hay.....	v+				%ac	c	Y%pq				
Clover seed.....	v+							%ac	c	Y%p	
Cowpeas.....				c	c	c	c			c	%p
Hay (all).....	v+					Ac	Fq				
Hay (tame).....				s	c	c	A	Pq			Y
Hay (wild).....	v+						A	Pq			
Kafir corn.....						c	c	c	%p	Y%p	
Meadows.....				c							
Millet.....						c	c	c	%p		
Pastures.....		c	c	c	c	c	c	c	c		
Timothy hay.....	v+							%p			

Figure 1: “Table showing the scope of the work involved in the preparation of the several crop reports.”

The key above the table shows the array of agricultural statistics that the USDA’s Bureau of Statistics could collect for any given crop, and the table shows the combination of statistics gathered for particular crops each month in 1915. Leon M. Estabrook, *Government Crop Reports: Their Value, Scope, and Preparation* (Washington, D.C.: Government Printing Office, 1915), 11.

Indeed, the *Times* did not overstate either the size of the crop reporting bureaucracy or its widespread impact. Although the earliest demand for agricultural statistics in the 1840s and 1850s came from agriculturalists and hinged on the producerist argument that farmers needed protection from financial loss at the hands of ruthless speculators, crop estimates throughout the nineteenth and early twentieth centuries had a much broader purpose and value.

⁴⁹ “Government’s Crop Report the Work of 130,000 People,” *New York Times*, June 1, 1913.

Crop estimates were used in myriad ways throughout the late nineteenth century by those who were neither producers nor consumers of agricultural commodities. Manufacturing firms, agricultural tool makers, and hardware companies all used crop reports to strategically market their products to those farmers who enjoyed bountiful crops and plentiful cash. Indeed, as the Chief of the Bureau of Statistics noted, knowledge of “the probable purchasing power of the farmers” was extremely valuable to retailers, jobbers, and manufacturers in general.⁵⁰ Railroad companies relied on crop estimates to determine how many cars would be required to ship grain, for example, to market. As the Chief of the Bureau of Statistics recalled in 1915, if inaccurate estimates of crop yield resulted in too few railroad shipping cars, grain prices commonly declined right at the railroad station, or the grain would not be sold altogether.⁵¹ And banks commonly used crop reports to assess the potential demand for farm credit in an upcoming season.⁵²

By the end of the nineteenth century, the federal government’s ever-expanding crop reporting network reached far into the countryside, where it extracted estimates of not only acreage and yield, but a host of other figures, then transmitted the raw data to the “centre of calculation” in Washington, DC, where clerks and crop statisticians busily tabulated, aggregated, averaged, weighted, and verified the figures into county, state, and national totals (see Figure 2).⁵³ Despite (and because of) the bureaucratic standardization and efficiency of its reporting network, the USDA’s agricultural statisticians faced significant challenges in converting the raw

⁵⁰ Estabrook, *Government Crop Reports*, 9-10, quotation on 10.

⁵¹ Estabrook, *Government Crop Reports*, 10.

⁵² USDA, *The Crop and Livestock Reporting Service of the United States*, 2.

⁵³ Bruno Latour, *Science in Action: How to Follow Scientists and Engineers Through Society* (Cambridge, MA: Harvard University Press, 1987). Emmanuel Didier also invokes the Latourian concept of the “centre of calculation” in his account of the USDA’s interwar agricultural statistics program. See Didier, “Do Statistics ‘Perform’ the Economy?” 279.

data reported by thousands of individual farmers, crop correspondents, and field agents into economically useful (and usable) crop information.

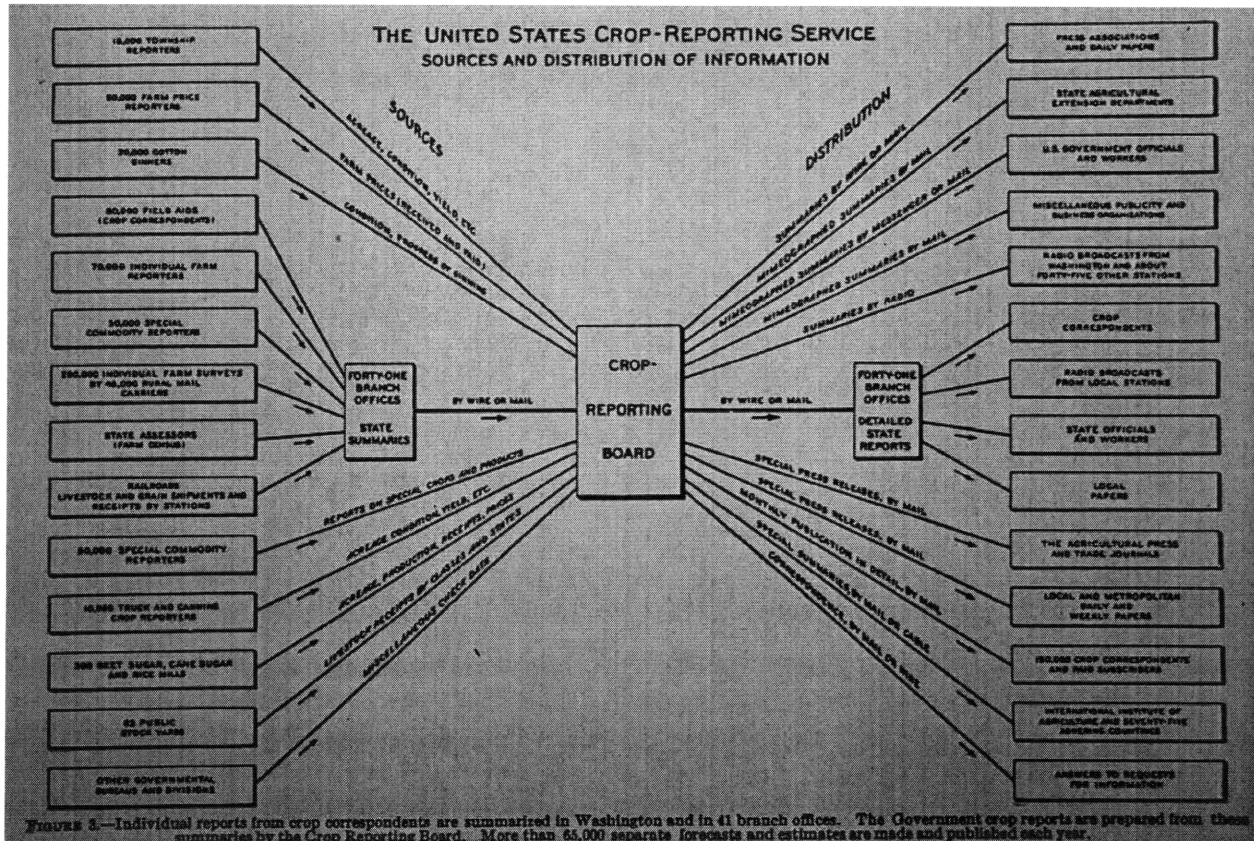


Figure 2: “The United States Crop-Reporting Service Sources and Distribution of Information.”

This 1933 diagram depicts the flow of statistical data into the USDA crop-reporting board and the subsequent distribution of crop reports. USDA, *The Crop and Livestock Reporting Service of the United States, Miscellaneous Publication No. 171* (Washington, DC: USDA, 1933), 12.

The most basic difficulty the USDA encountered was resistance from farmers who, fearing higher tax assessments, commonly underreported their acreage to Census Bureau representatives as well as to the state agricultural statisticians that were first appointed in 1882 by the Division of Statistics.⁵⁴ In an attempt to combat such underreporting and its statistical implications, the state statistical agents compiled a list of “representative” farmers in each state

⁵⁴ USDA, *The Story of U.S. Agricultural Estimates*, 36.

who, in the USDA's estimation, were the most compliant and honest reporters of their own acreage and yield.⁵⁵ In November 1889, Division of Statistics Chief Statistician Jacob R. Dodge wrote, "The farmer has everything to gain and nothing to lose by publicity of the results of his labors. He cannot keep these results a secret if he would, and it would be extremely injurious to his interest if he should."⁵⁶ Following Dodge's logic, the USDA employed a rather overt mechanism of social control when it began publishing the monthly "Crop Reporter," a publication designed expressly for government crop correspondents, but only those who reliably provided crop figures would receive a copy.⁵⁷

An equally persistent problem the USDA faced from the mid-nineteenth-century well into the twentieth century was public criticism of the relevance and accuracy of its published crop estimates. In addition to skeptics in the agricultural press, one of the most vociferous critics of the Division of Statistics was the National Board of Trade, which declared in January 1887 that the USDA's monthly crop estimates proved more useful to foreign buyers and "served no useful purpose" to commercial and agricultural interests at home.⁵⁸ The two primary sources of inaccuracy in the USDA's crop estimates were not uncooperative farmers or dishonest statisticians but rather the statistical mechanisms themselves that the Division of Statistics employed in calculating crop estimates.

The first source of inaccuracy arose from the fact that the Division of Statistics based its yearly acreage estimates on decennial Census data. In practice, the Census acreage estimates served as the baseline for crop reporters' subsequent yearly estimates, which they expressed as a percentage of the Census acreage estimate. In each successive year (until the next decennial

⁵⁵ Ibid., 34-35.

⁵⁶ Ibid., 37.

⁵⁷ Ibid., 42.

⁵⁸ Ibid., 38.

Census), crop reporters would estimate acreage as a percentage of their previous year's estimate. Thus, inaccuracies in crop estimates for a single year would result in what the Bureau of Statistics classified in 1915 as "a cumulative error" which, over ten years, yielded crop estimates markedly different from Census data. The Chief of the Bureau of Statistics provided an illustrative example in 1915: if a Census report of 10 million acres of a particular crop planted then served as a baseline for subsequent crop estimates, and crop reporters underestimated acreage by 2 percent each year, in 10 years the Census figures and the Bureau of Statistics figures would differ by nearly 2 million acres. And then the yield per acre and total yield estimates would be similarly skewed.⁵⁹

A second source of statistical inaccuracy emerged from the crop condition estimates, which asked farmers to assess the current condition of a particular crop not in relation to the previous year's yield, but rather in relation to a timeless "normal" condition (which meant, according to the USDA, a 100 percent crop yield—neither bumper crop nor crop failure—without any significant adverse effects from weather, disease, or insects) To make crop condition estimates, farmers would rate their current crop in relation to a base ten that represented a "normal" crop. Leon Estabrook, Chief of the Bureau of Statistics in 1915, acknowledged the "apparent vagueness" of the "normal" category as well as the varying local contexts in which "normal" was to be understood. As Estabrook told the *New York Times* in 1913, the Bureau encountered considerable public confusion over the definition of "normal," which many people mistakenly interpreted as "average." The two were not to be equated, Estabrook declared, adding that "[t]he average is almost always below the normal." As Estabrook instructed crop correspondents,

⁵⁹ Estabrook, *Government Crop Reports*, 18.

“[t]he normal . . . comes between the average and the possible maximum, being greater than the former and less than the latter. The normal may be described as a condition of perfect healthfulness, unimpaired by drought, hail, insects or other injurious agency, and with such growth and development as may reasonably be looked for under these favorable conditions.”⁶⁰

Despite perennial confusion over the “normal” category, the USDA had maintained this method of assessing crop condition throughout the 19th century and into the 20th century because it believed that farmers were fundamentally disinclined to make quantitative assessments of the condition of their crops. As Estabrook explained, the “normal” category was more effective because it was “psychological,” adding that “little observation and experience is required to demonstrate that the average farmer thinks of his crop as ‘crops’ and not in mathematical terms of percentages or averages . . .”⁶¹

Although the reach of the federal government’s crop reporting network was unrivaled, the USDA was hardly the only institution converting agricultural statistics into crop reports that functioned as de facto forecasts. In the early 1870s, the New Orleans Cotton Exchange’s original superintendent, Henry G. Hester, created a local agricultural statistics network that provided the data for his monthly cotton crop reports, which won him wide acclaim by the 1880s.⁶² The U.S. Army Signal Service began publishing a daily cotton region bulletin in the early 1880s that was based on telegraphed reports of temperature and rainfall from over one hundred and fifty stations in the cotton South.⁶³ And the American Cotton Growers’ Protective Association issued its own cotton crop forecasts in the 1890s, as I will discuss later in this chapter.⁶⁴

⁶⁰ “Government’s Crop Report the Work of 130,000 People,” *New York Times*, June 1, 1913.

⁶¹ Estabrook, *Government Crop Reports*, 20.

⁶² L. Tuffly Ellis, “The New Orleans Cotton Exchange: The Formative Years, 1871-1880,” *Journal of Southern History* 39, no. 4 (1973): 548-50.

⁶³ *Atlanta Constitution*, July 29, 1895, p. 5

⁶⁴ “Cotton Crop Forecast,” *Washington Post*, September 9, 1895.

Cotton quickly became the undisputed king of the postbellum Southern economy, as tenant farmers and sharecroppers became increasingly linked to global markets and increasingly constrained by local credit systems.⁶⁵ Despite perennial cries of cotton “overproduction” and repeated calls for diversification, white tenant farmers (more so than freed slaves) continued to cultivate a cash crop that was particularly susceptible to environmental damage from unpredictable weather, insects, and crop diseases.⁶⁶ By and large the price of cotton was determined on the New York and Liverpool cotton exchanges, not in the small local markets that dotted the south, where prices were roughly consistent.⁶⁷ The New York Cotton Exchange and the New Orleans Cotton Exchange, both founded in 1871, were linked to each other by telegraph and by transcontinental cable to the Liverpool Cotton Exchange.⁶⁸ In October of 1897 the *New York Sun* declared that “[b]y far the most interesting and important problem of our present commercial situation is the sum of money which is likely to be realized this year from the sale of what is usually our most valuable article of export, cotton.”⁶⁹ Cotton was widely considered to be the most volatile of the speculative crops; indeed, as a Birmingham newspaper noted in 1899, cotton yield was notoriously difficult to estimate since it “is subject to vicissitudes up to the hour of picking.”⁷⁰ When the USDA’s crop-reporting board ultimately made its first explicit forays into crop forecasting in 1912, cotton was the last commodity it wanted to touch. “[T]ry it out on grain before you touch cotton; because cotton is dynamite,” warned Secretary of Agriculture

⁶⁵ On the postbellum southern cotton economy, see Gavin Wright, *The Political Economy of the Cotton South: Households, Markets, and Wealth in the Nineteenth Century* (New York: W. W. Norton, 1978); Gavin Wright, *Old South, New South: Revolutions in the Southern Economy Since the Civil War* (New York: Basic Books, 1986); Steven Hahn, *The Roots of Southern Populism* (New York: Oxford University Press, 1983); Gilbert C. Fite, *Cotton Fields No More: Southern Agriculture, 1865-1980* (Lexington: University Press of Kentucky, 1984); Pete Daniel, *Breaking the Land: The Transformation of Tobacco, Corn, and Rice Cultures Since 1880* (Urbana and Chicago: University of Illinois Press, 1985); Beckert, “Emancipation and Empire.”

⁶⁶ Beckert, “Emancipation and Empire,” 1427.

⁶⁷ Fite, *Cotton Fields No More*, 49.

⁶⁸ Kenneth J. Lipartito, “The New York Cotton Exchange and the Development of the Cotton Futures Market,” *Business History Review* 57, no. 1 (Spring, 1983): 52; Ellis, “The New Orleans Cotton Exchange,” 547.

⁶⁹ “Cotton Should Go Higher,” *Columbia (SC) State*, October 22, 1897.

⁷⁰ “Mr. Henry Neill’s Downfall,” *Birmingham (AL) Age Herald*, March 12, 1899.

James T. Wilson, and so the crop-reporting board tested its predictive powers on easier ground, making forecasts for crops including wheat, oats, corn, tobacco, and rice from 1912 to 1915, when it issued its first official cotton forecast.⁷¹

Farmers in the postbellum South, many locked into cycles of tenancy and debt, faced an array of uncertain economic and environmental factors that prevented them from controlling their production and profit. In the 1870s and 1880s the Grange and the Farmers' Alliance pointed angrily to the merchants, industrialists, railroad companies, and corporate financial institutions who, from afar, exerted control over farmers' access to credit, interest and taxes, and railroad shipping rates. Along with these economic uncertainties came the uncertain effects of unpredictable rainfall, killing frosts, crop disease, and insects, especially the boll weevil, whose well-documented march across the Rio Grande in 1894 resulted in decades of devastation of the cotton crop, as well as federal government intervention in the form of USDA demonstration programs and the Agricultural Extension Service.⁷²

Several commercial organizations circulated crop reports in the late nineteenth century in an attempt to compensate for what were sometimes publicly perceived as inaccurate government reports. Credit reporting agency R. G. Dun & Co. had its own system for soliciting crop forecasts, as did its rival the Bradstreet Agency. Bradstreet, which did not have the federal government's hierarchy of crop reporters, mailed its circulars directly to cotton growers, textile factories, and buyers and asked them to estimate the size of the year's cotton crop. Other prominent cotton forecasters, many based in New York—Atwood Violett & Co.; Latham,

⁷¹ Nat C. Murray, "A Close-up View of the Development of Agricultural Statistics from 1900 to 1920," *Journal of Farm Economics* 21, no. 4 (1939): 715-16; Snyder, "Federal Crop Forecasts and the Cotton Market, 1866-1929," 52.

⁷² Fite, *Cotton Fields No More*, 48-49; Daniel, *Breaking the Land*, 6.

Alexander & Co.; Hubbard, Price & Co.; Riordan & Co.—used circulars as well.⁷³ Bradstreet's system of soliciting cotton forecasts was no more or less accurate than that of other commercial forecasters or the Division of Statistics, according to prominent planter Colonel R. F. Maddox, who said of Bradstreet's circular method,

“Oh, I guess it is as reliable as any. It consists of asking the opinions of as many men as possible. Sometimes, however, a planter is prejudiced or illy supplied with information himself, and the inaccuracy of his report, colors all the others in arriving at a general average. But it is worthy of notice that other authorities do not agree with them, but fix the crop at a much higher figure. Take the government estimate, for instance. I don't say that even this is reliable, but it certainly ought to be the nearest to it. The whole thing shows how opinions may differ.”⁷⁴

Well-known cotton forecaster S. M. Inman of Atlanta expressed a similar skepticism when he declared of the field of crop estimators in general, “I do not think that any of them are to be regarded as oracles.” Circulars sent out by Bradstreet and the federal government resulted in what Inman deemed “only a consensus of guesses. . . . Sometimes they hit it and sometimes they miss it. That's about the way it goes.”⁷⁵

An internal history of the federal government's crop reporting program termed the period from 1894 to 1905 “a decade of confusion” because political appointments in the Division of Statistics compromised the quality of its statistical work, which resulted in criticism from the National Board of Trade as well as wavering public confidence in the Division's work after two well-publicized crop reporting controversies.⁷⁶ As I will demonstrate in what follows, this period was a “decade of confusion” not only within the federal government's agricultural statistics program but also in the cotton market itself.

⁷³ “Crops in Western New-York,” *New York Times*, July 13, 1891; “Don't Believe It,” *New York Times*, December 23, 1893.

⁷⁴ “Don't Believe It,” *New York Times*, December 23, 1893.

⁷⁵ *Ibid.*

⁷⁶ USDA, *The Story of U.S. Agricultural Estimates*, 39.

By 1890, this array of crop forecasts—themselves based on crop reporters’ empirical observations of acreage and condition in fields across the country—had greater relevance to abstract commodity exchange than to actual delivery of physical goods as a result of the rise of commodity futures trading, which dramatically reshaped financial markets in the last quarter of the nineteenth century.⁷⁷ The futures market in Chicago steadily gained momentum between 1865 and 1875, at which time two billion dollars in grain futures was traded, compared to two hundred million dollars in actual grain. By 1885, Chicago’s ratio of grain futures traded to actual grain traded was an estimated fifteen to one or twenty to one.⁷⁸ And by 1900, New York and Chicago’s commodity exchanges traded a volume of agricultural futures seven times higher than the volume of the actual harvest.⁷⁹ As historian Jonathan Ira Levy has recently illustrated, such a wrenching shift in the nature of commodity trading posed an epistemological “crisis” for late-nineteenth-century boards of trade, commodity exchanges, rural “bucket-shops” and their patrons, and the legal system, all of which struggled to make sense of a modern capitalist economy in which the physical transaction of capital for goods had been largely supplanted by an increasingly abstract cascade of transactions based not on current prices of physical commodities but rather on the present projection of future price differentials.⁸⁰ While the Chicago Board of Trade waged an ultimately successful “war on the bucket-shops,” anti-futures sentiment infused the rhetoric of agrarian radicals who railed against the rampant speculation in

⁷⁷ The agricultural futures market originated in the Chicago Board of Trade, which was established in 1848 as the world’s first futures exchange. Some futures trading in Chicago was noted as early as 1853, but futures trading did not become institutionalized into the Chicago Board of Trade until after the Civil War, which brought a dramatically increased demand for oats and pork for the Union Army and thus a higher volume of futures trading, which in turn created a demand for standardized futures contracts and formal trading regulations. Cronon, *Nature’s Metropolis*, 124.

⁷⁸ Cronon, *Nature’s Metropolis*, 126.

⁷⁹ Steve Fraser, *Every Man a Speculator: A History of Wall Street in American Life* (New York: HarperCollins, 2005), 196, 252.

⁸⁰ Levy, “Contemplating Delivery: Futures Trading and the Problem of Commodity Exchange in the United States, 1875-1905,” 307-10, quotation on 310.

the so-called “wind wheat” that had become irrevocably divorced from the fields in which it was actually grown.⁸¹

Standing amidst this late-century whirlwind of commodity speculation and government and private crop forecasts was Henry M. Neill, an Irish immigrant who came to New York at the age of eighteen and, in 1857, along with his brother William, founded the firm of Neill Brothers, with offices in New Orleans, London, and Liverpool. Neill, who had worked as a cotton trader, was one of the founders of the New York Cotton Exchange, and his firm was one of its earliest members. Neill was also a member of the Cotton Exchange in New Orleans, where he exerted considerable influence on the cotton economy by virtue of his crop forecasts. Newspapers hailed Neill as “the greatest cotton crop estimate expert in the world,” “the leading statistician of the south,” “the accepted authority on cotton,” and—somewhat less effusively—“the cotton guesser.” Neill counted at least one thousand subscribers—almost all of them in England—to his cotton letters, which he sent out four times each year.⁸² And the substance of Neill’s eagerly awaited cotton forecasts reached a far wider readership through newspaper coverage that often published long excerpts from Neill’s letters.

In the 1890s Neill’s cotton forecasts circulated throughout a domestic economy in which the gold standard held prices down and throughout a global agricultural commodity market that was, generally speaking, weighed down by surplus. Farmers stood little chance to profit in national or international markets, and they watched cotton and wheat prices continue their sharp slide, the former from 23 cents a pound in 1870 to 7 cents a pound in 1894, and the latter from

⁸¹ On commodity speculation and the futures market, see Cronon, *Nature’s Metropolis*; Levy, “Contemplating Delivery: Futures Trading and the Problem of Commodity Exchange in the United States, 1875-1905”; Hochfelder, “Where the Common People Could Speculate”; Fabian, *Card Sharps and Bucket Shops*; Fraser, *Every Man a Speculator*.

⁸² “Henry M. Neill Killed,” *New York Times*, September 13, 1906; “Cotton Crop Estimate This Year,” *New York Times*, November 4, 1892; “The Feeling About Neill is Mixed,” *Atlanta Constitution*, November 14, 1899; “Henry Neill’s Power Broker,” *Atlanta Constitution*, March 8, 1903.

\$1.37 a bushel in 1870 to 50 cents over the same period.⁸³ Postbellum cotton prices were consistently low, hitting ten cents a pound only twice in the last quarter of the century (in 1879 and 1881). In the 1880s, cotton had sold for around eight cents a pound, but the 1890s were particularly tough for cotton growers, who faced cotton prices as low as five cents a pound.⁸⁴ The two worst years, 1894 and 1897, saw cotton prices hit record lows, leaving growers with less than five cents per pound after shipping costs, the lowest prices of the last forty-five years.⁸⁵ “What are the causes of this depression in the price of cotton?” asked the *New Orleans Daily Picayune* in October 1897. “It is . . . not lack of demand, actual or prospective, which has caused the depression. The real trouble has been the estimate of Mr. Henry Neill forecasting the yield at 10,300,000 bales, and even more under favorable circumstances.”⁸⁶

Before the Panic of 1893 and the ensuing depression, Neill’s estimates of cotton yields for the year ahead ranged both low and high, in each case pushing cotton prices higher and lower, respectively. In 1891, for example, Neill’s pessimistic forecasts for the American cotton crop reportedly drove up cotton futures markets, and in fall of the following year, the price of cotton swung with Neill’s changing estimates at the end of the harvesting season. In late October 1892 Neill published an estimate of eight million bales that contradicted other recent estimates of six and seven million bales, which caused cotton prices to drop a bit. In November 1892 Neill released a low estimate of 7.1 million bales and warned that the crop would fall below 7 million if Texas produced less than 2 million bales. Even before Neill officially released his estimate, rumors of his low forecast drove the cotton market up twenty-five points.⁸⁷ And in the

⁸³ Fraser, *Every Man a Speculator*, 200.

⁸⁴ Gilbert C. Fite, “Southern Agriculture since the Civil War: An Overview,” *Agricultural History* 53, no. 1 (1979): 7; Fite, *Cotton Fields No More*, 48.

⁸⁵ “The Situation in Cotton,” *New Orleans Daily Picayune*, October 25, 1897.

⁸⁶ *Ibid.*

⁸⁷ “The Cotton Markets,” *Atlanta Constitution*, May 27, 1891; “Cotton May Now Be Cheaper,” *New York Times*, October 30, 1892; “Cotton Crop Estimate This Year,” *New York Times*, November 4, 1892.

minds of Neill's critics, Neill's cotton predictions exerted a disproportionate influence on the cotton market throughout the 1890s:

Whenever he issued a bulletin the effect was startling. One blast from his horn has been known to knock the price of cotton down 50 points, which meant an apparent reduction of nearly \$20,000,000 in the value of the crop. The spinners had the most absolute faith in his predictions, and his influence so dominated the market that, regardless of what conditions might seem to indicate, the price of the south's great staple was practically dominated by this one man's opinion.⁸⁸

At the end of the decade a Birmingham newspaper expressed similar sentiments, pronouncing Neill "the dictator of the country's chief export crop."⁸⁹

In a recent essay on the theoretical "performativity" of the USDA's agricultural statistics in the 1920s and 1930s, Emmanuel Didier challenges the applicability of theories of performativity to economic statistics, arguing instead that agricultural statistics "express" the condition and prospect of crops. Didier rejects the category of statistical performativity because it imputes implausible agency to numbers and leads us to incorrectly conceptualize historical change as "a pure creation."⁹⁰ In making his case for the more flexible theory of "expression," Didier critiques the notion of performativity for its implication that agricultural statistics would wholly create the conditions of the agricultural economy, rather like "the waving of some magic wand."⁹¹ But, as the story of Henry M. Neill reveals, his late-nineteenth-century contemporaries understood the business of cotton forecasting in precisely those terms: Neill was widely regarded as a wizard of the cotton exchange, an immensely powerful figure whose cotton letters—themselves presented in the language of economic rationality—had seemingly magical effects.

Neill, commonly referred to in print media, both approvingly and pejoratively, as a "prophet," was depicted by his detractors at the *Atlanta Constitution* as something of a sorcerer

⁸⁸ "Henry Neill's Power Broker," *Atlanta Constitution*, March 8, 1903.

⁸⁹ "Mr. Henry Neill's Downfall," *Birmingham (AL) Age Herald*, March 12, 1899.

⁹⁰ Didier, "Do Statistics 'Perform' the Economy?" 299.

⁹¹ *Ibid.*, 304-305, quotation on 305.

“whose word was magic.” After Neill’s career ended in public humiliation at the turn of the twentieth century, the *Constitution* exclaimed that “[t]here was a time when the name of Neill was something to conjure with, and when the farmers of the land stood in awe of him. . . . When Neill waved his hand prices subsided with an expiring sigh, and the lights went out.”⁹² And Neill’s contemporaries were well aware of the performativity of markets more generally, as evidenced by a Hubbard, Price & Co. circular of 1891 that noted Neill’s recent pessimistic comments on a cotton crop in need of rain and then observed that “[t]he future course of prices remains dependent upon the currency which bad crop accounts attain.”⁹³

Domestic cotton crops boomed in the mid-1890s, with extremely large harvests in the years 1894-95, 1897-98, 1898-99, all years in which Henry Neill had predicted higher than average yield.⁹⁴ And, as a Birmingham newspaper noted at the decade’s end, “Two or three lucky crop-guesses makes a prophet.”⁹⁵ The cotton harvest of 1896 yielded about 1,000,000 bales over the general estimates and 300,000 to 400,000 bales less than Neill’s estimate, which was thought “absurdly large” at the time.⁹⁶ In the spring of 1897, the London branch of Neill Bros. published a circular in a Manchester trade publication that admitted that Neill’s inflated estimate of the 1896 crop had saved ““millions”” for European cotton buyers, a comment that drew a sharp critique from the *Atlanta Constitution*, whose editors were far more concerned with the losses suffered by cotton growers in the American south. Neill retorted, ““Who can charge me with willfully falsifying if I come within 250,000 of the crop nearly a year in advance?””⁹⁷

⁹² “Will Keep the Graves Green,” *Atlanta Constitution*, February 14, 1900.

⁹³ “The Cotton Markets,” *Atlanta Constitution*, May 27, 1891.

⁹⁴ “Largest Cotton Crop Known,” *New York Times*, August 15, 1899.

⁹⁵ “Mr. Henry Neill, Cotton Expert,” *Birmingham (AL) Age Herald*, November 11, 1899.

⁹⁶ “Rome’s Cotton Receipts,” *Atlanta Constitution*, April 6, 1897; “Enormous Cotton Crop of 1898,” *Chicago Daily Tribune*, September 10, 1898.

⁹⁷ “Mr. Neill’s Crop Estimate,” *Atlanta Constitution*, April 1, 1897.

Not surprisingly, investors and textile mill owners across the Atlantic cheered Neill's perennially optimistic and uncannily accurate crop predictions of the mid-1890s. In March 1894, a letter to the editor of the *Manchester Courier* offered this profession of faith in the New Orleans cotton prophet: ""Do you believe in Henry Neill?" a man asked me the other day. "He is not only the best crop authority," I replied, "but there is absolutely no other. Lancashire is indebted—has been again and again highly indebted—to Mr. Neill."""⁹⁸ But not everyone believed in Henry Neill, particularly those cotton growers and commercial trading firms in the United States who grew increasingly skeptical of Neill's forecasting and his methods over the course of the decade.⁹⁹

In January 1895 over one hundred and fifty delegates walked through four inches of snow to attend the Southern Cotton Growers' convention in Jackson, Mississippi, where they resolved to officially establish as a permanent organization the Cotton Growers' Protective Association, with Hector D. Lane, Alabama's Commissioner of Agriculture, as president. The Association focused immediately on exploring the feasibility of acreage reduction to secure a higher price for cotton, as well as on articulating its staunch opposition to futures trading and its support of the ultimately doomed Hatch Bill, which sought to tax futures trading right out of existence.¹⁰⁰

After the Neill Bros. circular of July 1895 ranged upwards of eight million bales and turned the market downwards, a skeptical Hector D. Lane, president of the Cotton Growers' Protective Association, issued a far less optimistic estimate (6.5 to 7 million bales) of the upcoming cotton harvest. Lane cited a variety of harmful factors, including drought, rust, worms, heavy rain, and shedding, that contributed to what he deemed a below average crop,

⁹⁸ "Atwood Violet & Co's. Cotton Letter," *Atlanta Constitution*, March 8, 1894.

⁹⁹ "Cotton Again Black-Eyed," *Dallas Morning News*, August 18, 1898; *Columbus (GA) Daily Enquirer*, December 15, 1899.

¹⁰⁰ "King Cotton's Future," *Washington Post*, January 10, 1895.

before pointedly declaring, “I don’t pose as a statistician, and no one but a reckless guesser can make any accurate forecast of the size of the crop before frost.”¹⁰¹

In January 1896 Lane had much harsher words for commercial cotton forecasters when he addressed the six hundred delegates to the American Cotton Growers’ Protective Association meeting in Memphis. Railing against the five-cent cotton economy that was responsible for “a vortex of poverty and destitution,” Lane diagnosed the problem: market forces of supply and demand were overpowered by “the commercial fakir and flim-flam artist . . . who, by false prophecy, cunning manipulation and wilfull misrepresentation, robs us of our sustenance, pauperizes our posterity, leaving us nothing but poverty in our homes and hatred in our hearts.”¹⁰² Lane called upon his cheering audience to engage in a concerted effort at acreage reduction and thereby render “cotton ‘bears’” like Henry Neill unable to drive prices down with forecasts of surplus.¹⁰³ But Lane’s call for acreage reduction was not enough to vanquish the bear-market cotton forecasters, and cotton market watchers continued to decry Henry Neill’s power over prices.

In April 1897 the *Atlanta Constitution* complained that the timing of Neill’s cotton estimates—after the crop had been planted—rendered cotton growers unable to alter their acreage and thereby unable to profit from Neill’s forecast.¹⁰⁴ In September of the same year, Neill predicted the biggest cotton crop ever: over 4 million bales from Texas and Indian Territory, and between 11.5 and 12 million total bales from the entire South.¹⁰⁵ In October 1897 a South Carolina newspaper blamed anticipation of an extremely large cotton crop for driving

¹⁰¹ “Cotton Crop Forecast,” *Washington Post*, September 9, 1895.

¹⁰² American Cotton Growers’ Protective Association, *Proceedings of the American Cotton Growers’ Protective Association* (Memphis: Tracy, 1896), 2, 4.

¹⁰³ *Ibid.*, 4.

¹⁰⁴ “Mr. Neill’s Crop Estimate,” *Atlanta Constitution*, April 1, 1897.

¹⁰⁵ “Enormous Cotton Crop of 1898,” *Chicago Daily Tribune*, September 10, 1898.

cotton prices down, and Henry Neill in particular for creating that expectation: “The estimate of its quantity now having the greatest influence upon the trade is that of Mr. Henry Neill.”¹⁰⁶ Two months later, Neill published a forecast in Liverpool of 10.5 million bales, which drove prices down there and in New York. The *Atlanta Constitution* cited high-profile skeptics within the cotton industry and issued its own, more modest, predictions, despite professing that it “prefer[red] to comment on facts rather than make predictions.”¹⁰⁷

The final two cotton seasons of the nineteenth century marked the dramatic conclusion of Henry M. Neill’s reign, the end of what the *Atlanta Constitution* lamented as “the domination of the English autocrat of New Orleans over the cotton market.”¹⁰⁸ In 1898, more acres of cotton were planted (nearly 25 million) than ever before, nearly 650,000 more acres than the previous year.¹⁰⁹ Neill’s circular of August 3, 1898 “assured” a crop of at least 10.5 million bales and strongly suggested the possibility of between 1 and 1.5 million more. Neill’s November estimate indicated between 11,750,000 bales and 12,000,000, then climbed to 12,150,000 (assuming a mild winter), and peaked at 12,250,000 bales.¹¹⁰ As Neill’s estimates of cotton yield climbed ever higher, cotton prices plummeted, sinking to all-time lows in December and forcing planters to part with the bulk of their crop for an average price below five cents a pound.¹¹¹ Southern growers, who had no leverage in such a market, were forced to accept such low prices, and futures contracts for spring delivery of cotton flew off the market.

¹⁰⁶ “Cotton Should Go Higher,” *Columbia (SC) State*, October 22, 1897.

¹⁰⁷ “The Price of Cotton,” *Atlanta Constitution*, November 12, 1897.

¹⁰⁸ “The Feeling About Neill is Mixed,” *Atlanta Constitution*, November 14, 1899.

¹⁰⁹ James L. Watkins, *The Cotton Crop of 1898-99*, U.S. Department of Agriculture Bulletin No. 17 (Washington, DC: Government Printing Office, 1900), 25, 32.

¹¹⁰ In March of 1899 Neill wrote a rebuttal to the *New York Sun*’s scathing review of his performance during the 1898-1899 cotton season, insisting that he did not issue an early twelve-million bale prediction in August but rather in November, when he adjusted his estimates upwards before the arrival of the vicious winter. The *Sun* conceded Neill’s correction to the timeline but maintained the general tenor of its critique. “Cotton Crop of 1898-’99,” *Columbus (GA) Enquirer-Sun*, March 22, 1899.

¹¹¹ “Mr. Henry Neill’s Downfall,” *Birmingham (AL) Age Herald*, March 12, 1899.

Neill's English buyers could name their price in 1898, until an unbelievably harsh winter set in, "probably the worst the south has ever known," according to the *Atlanta Constitution*.¹¹² Indeed, the U.S. Weather Bureau estimated that Georgia and Florida lost an estimated \$1.5 million in the hurricane of October 2, 1898; an onslaught of severe winter storms ripped through the Great Lakes region and New England in November and December; and a series of cold waves crossed the country in early February 1899, bringing the lowest temperatures on record in the north Pacific coast states, Central, Western, and Northwestern states. The South also suffered record temperature lows, with the temperature dropping to zero on Alabama's Gulf coast on February 13, 1899. Although the Weather Bureau issued cold wave warnings that saved a reported hundreds of thousands of dollars of crops, livestock, and other goods, crop damage throughout the South ran into the millions of dollars. The cotton crop sustained heavy losses.¹¹³

But the destruction wrought by the winter weather did not mask the underlying explanation for the dramatic decline in receipts throughout the entire cotton South: the prophecies of Henry M. Neill. In March of 1899 the *New York Sun* declared that

"the truth can no longer be concealed that the diminished movement of cotton is due to exhaustion, and that the cotton crop of 1898-99 has been grossly overestimated; that the prophecy of Mr. Neill of a 12,000,000 bale crop, which was the ground for this expectation, was simply a reckless guess; and that the fright caused by this great exaggeration led the American cotton planter to sell his cotton for millions of dollars less than it was worth."¹¹⁴

Indeed, when the railroad and shipping receipts were totaled, the cotton crop for 1898-99 was still enormous: a record 11,189,205 bales. It surpassed the previous year's crop by 291,348

¹¹² Ibid.; "Mr. Neill and the Cotton Crop," *Atlanta Constitution*, March 11, 1899.

¹¹³ U.S. Weather Bureau, *Report of the Chief of the Weather Bureau, 1898-99* (Washington, DC: Government Printing Office, 1900), 3-7; "Mr. Neill and the Cotton Crop," *Atlanta Constitution*, March 11, 1899.

¹¹⁴ "Mr. Neill and the Cotton Crop," *Atlanta Constitution*, March 11, 1899. Not surprisingly, newspaper estimates differed dramatically regarding exactly how much Neill's bear-market prophecies cost Southern growers who rushed their crop to market at depressed prices in the fall of 1898. One assessment noted that Neill cost Southern growers fifty million dollars, not hundreds of millions. "Mr. Henry Neill's Downfall," *Birmingham (AL) Age Herald*, March 12, 1899.

bales, but its market value was \$14,024,371 less. Cotton growers in 1897-98 got 5.71 cents per pound for the cotton, but only 5.27 cents the following year.¹¹⁵

Cotton growers were not the only ones who suffered the forecasts of Henry Neill, as the *Atlanta Constitution* pointed out, citing the financial loss sustained by fertilizer companies, sellers of livestock, farm implement manufacturers, southern businessmen in general, and speculators on the Liverpool Cotton Exchange who lost heavily on their New York futures contracts for spring delivery.¹¹⁶ Neill's estimate, which turned out to be roughly 1.5 million bales too high, threw his prophetic proficiency into question. "The cotton pope has been shoved off his throne," a Birmingham newspaper declared.¹¹⁷

But Neill had not been shoved off his throne completely. Despite impassioned assertions in the popular press that "one failure exposes the prophet" and that "Neillism had been disproved" in the 1898-1899 cotton season, Neill's cotton prophecies continued to exert a strong influence on the cotton market on both sides of the Atlantic the following year.¹¹⁸ The cotton crop of 1899-1900 marked the first time that the United States pulled ahead of Britain in the consumption of raw cotton (by half a million bales), as a result of the surge in domestic demand for cotton textiles for department store and mail-order sales. But, as a member of the Bureau of Statistics noted in retrospect, "the most extraordinary feature of the year was the wide range of prices from the beginning to the close of the season." Spot cotton's opening prices in September 1898 hovered around six cents per pound and around nine and a half cents per pound by the end

¹¹⁵ James L. Watkins, *The Cotton Crop of 1899-1900, U.S. Department of Agriculture Bulletin No. 19* (Washington, DC: Government Printing Office, 1901), 41; Watkins, *The Cotton Crop of 1898-99*, 25.

¹¹⁶ "Mr. Neill and the Cotton Crop," *Atlanta Constitution*, March 11, 1899; "Mr. Henry Neill's Downfall," *Birmingham (AL) Age Herald*, March 12, 1899.

¹¹⁷ "Mr. Henry Neill's Downfall," *Birmingham Age Herald*, March 12, 1899.

¹¹⁸ "Mr. Neill and the Cotton Crop," *Atlanta Constitution*, March 11, 1899; *Ibid.*

of August 1900.¹¹⁹ Such variability in the cotton market was due in no small part to the dueling crop estimates of the USDA's Division of Statistics and Henry Neill.

To open the season, government crop estimators predicted between 9 and 9.5 million bales for the year. Henry Neill, by then known to be a predictable bear, disagreed. In August of 1899, Neill issued a circular predicting the unprecedented number of twelve million bales, citing optimal temperature and rainfall and prophesying that no uncertainties of early frost or inclement weather could cause significant loss: “The rapidity with which the crop has advanced, over the whole country, and the enormous fruitage, will soon make it independent of future weather, and make a great crop certain, no matter how early a frost should come.”¹²⁰ In mid-August the President of the New York Cotton Exchange discounted Neill's early estimate as 1.5 million bales too high, and he rejected Neill's confident dismissal of climactic variability, protesting, “I don't see how Mr. Neill or any other man can pretend to say this early in the year what the crop will be. . . . The possibilities of the crop, when all conditions are favorable, are almost infinite, but account must be taken of possible droughts, scorching temperature and other things likely to hurt the crop.”¹²¹ But according to some cotton market commentators, such unpredictable natural forces were far less injurious than the soaring cotton estimates of Henry Neill. As an Alabama newspaper fumed in early September of 1899, “Henry Neill has damaged the cotton farmers more than all the boll worms, rust, floods and drouths. By the time Neill dies with old age the cotton men will learn that he was always influenced by private gain. Neill is a

¹¹⁹ Watkins, *The Cotton Crop of 1899-1900*, 5.

¹²⁰ “Largest Cotton Crop Known,” *New York Times*, August 15, 1899. The essential argument of Neill's August 12, 1899 circular was that the previous year's cotton crop (1898-99) would have approached 11,750,000 or 12,000,000 bales were it not for the most destructive winter weather on record. Neill pronounced the current year's crop equal to or better than the previous year's in terms of likely yield per acre. The logic of his circular hinged on the “vast possibility” of the previous year's crop, a possibility impossible to quantify or verify. “Another Neill Estimate,” *Dallas Morning News*, October 12, 1899.

¹²¹ “Neill Overshoots Himself,” *Atlanta Constitution*, August 18, 1899.

professional bear.”¹²² And the *Atlanta Constitution* offered a more gruesome animal metaphor, warning that “the people of the south can only have the consolation of knowing that they are but lambs in the slaughter pit...”¹²³

On September 1, 1899, the federal government reported that the condition of the cotton crop on that date was the second-worst ever. Henry Neill insisted, two days later, that his twelve million bale prediction was correct, asserting that the previous year’s weather and thus yield was comparable. Unwilling to back down from his estimate, Neill, in a September 29 cable to the London office of Neill Bros., blamed New York brokerage houses for issuing lower crop reports that compelled Southern growers to withhold cotton from the market. Neill maintained that the weather remained ideal, picking extensive, and the cotton grade high.¹²⁴

Neill’s persistently high estimates cost those growers who, fearing that an oversupply would depress prices later in the season, rushed their cotton to market. On October 9, 1899, the *Raleigh News and Observer* laid out the economic consequences of Neill’s predictions for farmers who based their planting on expectations of an eleven million bale crop:

“They purchased fertilizers, seeds and paid for the planting and cultivation of a large crop. If the crop had realized the expectations of the planters, the price would probably not have exceeded 6 cents, but owing to floods, drought and bad seasons, the crop was shortened certainly 2,000,000 bales. In the natural workings of the law of supply and demand the farmers ought, under any circumstances, to have got a much larger price for their cotton than they did last year. As has been pointed out by The Constitution, the circular of Henry M. Neill is responsible for the fact that during the first three weeks of September, those who sold their cotton were robbed on the legitimate margin in price which should have gone to them.”¹²⁵

And accepting low prices for their product was not the only economic consequence of Neill’s estimates for indebted farmers tied to cotton cultivation by tenancy. As the *Constitution* put it:

¹²² “Henry Neill is a Bear,” *Birmingham (AL) Age Herald*, September 5, 1899.

¹²³ “Neill Overshoots Himself,” *Atlanta Constitution*, August 18, 1899.

¹²⁴ “Bears Attempt to Break Spot,” *Atlanta Constitution*, October 17, 1899.

¹²⁵ “Under the Cotton Banner,” *Atlanta Constitution*, October 9, 1899.

In the first place, our crop is raised on credit, and rushed through to market, under compulsion, while the price is being held down by speculators. The farmer who goes to his market town under such conditions, returns home not only without money, but held down by a balance of debt for which he has given a mortgage on his next year's crop. That staple, then, which is the highest form of agricultural credit in the world, does not furnish even the feeding quality of a few hills of potatoes which might give subsistence to the family.¹²⁶

Cotton crop conditions worsened in the Division of Statistics' report of October 10, 1899, but Henry Neill held firm. He issued a circular that compared the current cotton crop to that of the previous year, in which an ostensibly extended drought still produced a large crop.¹²⁷ The Division of Statistics would later allege that Neill's insistence—on the very same day—of “at least 11,000,000 bales certain” as a “Minimum Estimate” was intended “as if to break the force of such [government] announcement.”¹²⁸ Of course Neill was not the only influence on the American cotton exchanges—the impending Boer War also pushed prices downwards, and Liverpool cotton prices went down as well—but the *Dallas Morning News* was convinced that since both were temporary situations, “this morning's drain was purely sentimental . . . the real feature being the promulgation of a circular by Neill, in which he says a crop of 11,000,000 bales is assured.”¹²⁹ Commercial cotton forecasters shared the government's and the press's frustration with Neill: in mid-October the New York firm of Atwood, Violett & Co. fired back in its own cotton letter, castigating Neill as the worst “conspirator against the South.”¹³⁰

What the *Constitution* had previously denounced as Neill's “fabric of guess work” became unraveled in late October of 1899 when the USDA's Division of Statistics put Neill's

¹²⁶ “Neill Overshoots Himself,” *Atlanta Constitution*, August 18, 1899.

¹²⁷ “This Year's Cotton Crop,” *New York Times*, October 11, 1899.

¹²⁸ Watkins, *The Cotton Crop of 1899-1900*, 29. A Dallas newspaper also noted the timing of Neill's circular as designed to counter the Division of Statistics' crop report. “Another Neill Estimate,” *Dallas Morning News*, October 12, 1899.

¹²⁹ “Another Neill Estimate,” *Dallas Morning News*, October 12, 1899.

¹³⁰ “Bears Attempt to Break Spot,” *Atlanta Constitution*, October 17, 1899.

numbers under scrutiny.¹³¹ According to a circular issued by the firm of Price, McCormick & Co., USDA statistician John Hyde was asked to evaluate Neill's use of U.S. Weather Bureau rainfall data in making his argument that a drought in August and September of 1898 did not have an adverse effect on a cotton crop that was nearly 2.5 million bales larger than the previous year's and 1.3 million bales larger than the previous high of 1894-1895. And the current year's crop, so Neill's logic went, would undoubtedly be even larger.¹³²

Upon comparing the Weather Bureau's original rainfall data with Neill's, Hyde concluded that Neill had manipulated the Weather Bureau's tabulations to suit his own purposes. Neill had selectively assembled a patchwork of rainfall data in the Atlantic and Gulf states from July, August, and September 1899 in order to mislead nervous cotton investors and buyers into believing that the present year's rainfall was in fact significantly greater than that of 1897 and that drought was not a present danger.¹³³ The opposite was true, as Hyde pointed out: almost all the cotton states of the South had experienced less rain in August and September 1899 than they had two years earlier.¹³⁴

Hyde tried to recreate Neill's calculations, but since Neill had not made clear which Weather Bureau stations supplied the rainfall statistics he cited, or which states he assigned to which region, Hyde was unsuccessful. Hyde did determine, however, that Neill had included rainfall data from the last week in July in his tabulation for August and September, which boosted the 1899 rainfall totals for the Atlantic and Gulf Coast states higher than the 1897 totals. In the following days, a storm of anti-Neill sentiment burst forth in the pages of the *Atlanta Constitution*, which crowed, "Mr. Neill must have invented his rainfall to suit his own purposes.

¹³¹ "Mr. Neill and the Cotton Crop," *Atlanta Constitution*, March 11, 1899.

¹³² "This Year's Cotton Production," *New York Times*, October 25, 1899.

¹³³ "How Neill Makes Estimates," *Atlanta Constitution*, November 2, 1899.

¹³⁴ "This Year's Cotton Production," *New York Times*, October 25, 1899.

His figures were grossly incorrect, and his rainfalls were mythical.”¹³⁵ Faced with the results of Hyde’s analysis, Neill confessed that he had indeed, as the *Constitution* put it, “falsified the government rainfall record, in order to make out a case in his own favor.”¹³⁶

In the aftermath of Neill’s exposure as a false cotton prophet, the *Atlanta Constitution*, which made no efforts to conceal its producerist and protectionist bent, launched a wide-ranging critique of Neill, denouncing him as a “commercial Judas, who undertook to deliver the hard-working producers into the hands of sharp men, who were as expert with trading conditions as the farmer was ignorant of them.”¹³⁷ From the barrage of the *Constitution’s* epithets—“an enemy of the public welfare,” a “prophet [who] is an agent of evil,” “a demon of destruction”—emerged a two-pronged attack on Neill for wreaking havoc on the cotton market.¹³⁸ First, the *Constitution*, which did not fault Neill for producing cotton forecasts for a European market, condemned him for making fraudulent predictions, for “cloth[ing] Falsehood in the garb of Fact,” an allegation to which Neill had confessed.¹³⁹

A second and, to my mind, more interesting *Constitution* critique focused on the nature of Neill’s forecasts as cloaked in the garb of statistical accuracy. Neill, “the alleged statistician,” was so successful a statistical middleman not simply because his sellers and buyers were an ocean apart. More importantly, Neill’s self-fashioning as a cotton expert and scientific authority caused southern cotton growers, by and large, to understand his cotton letters not as predictions circulating throughout a probabilistic economy (and indeed competing with other crop estimates) but rather as an isolated and deterministic market mechanism. As the *Constitution* observed, “The part of Mr. Neill was not to secure ascertained facts, but to make the largest possible use of

¹³⁵ “Mr. Neill’s Fakes,” *Atlanta Constitution*, November 1, 1899.

¹³⁶ “How Neill Makes Estimates,” *Atlanta Constitution*, November 2, 1899.

¹³⁷ “The Fall of a Prophet of Evil,” *Atlanta Constitution*, November 7, 1899.

¹³⁸ “How Neill Makes Estimates,” *Atlanta Constitution*, November 2, 1899; *Ibid.*

¹³⁹ “The Fall of a Prophet of Evil,” *Atlanta Constitution*, November 7, 1899.

empty probabilities, under fear of which the producer would be forced to part with his holding at less than its value.”¹⁴⁰ For the southern planters who planted, cultivated, and sold their cotton according to inflated yield estimates, Neill’s cotton prophecies were indeed self-fulfilling.

Undeterred by Hyde’s investigation in late October 1899 and the *Constitution’s* subsequent reports of his statistical impropriety, Neill stood firm. On November 10, the USDA issued an estimate of a maximum of 9,500,000 bales, but Neill still refused to budge a bale. Four days later, Neill Bros. issued a statement that Neill had ““not reduced his former minimum estimate of 11,000,000 by a single bale.””¹⁴¹ In the closing days of November, Neill explained away the reality of lower-than-expected cotton receipts by blaming cotton growers for keeping their cotton off the market and holding out for higher prices.¹⁴²

On December 10, 1899, the Division of Statistics’ monthly report dropped its estimate to 8,900,000 bales, but Neill held at 11,000,000. By January 1900, after most of the cotton crop had gone to market and Neill’s estimate of eleven million bales clearly appeared to be off the mark, Neill insisted that a considerable amount of cotton was still being held off the market and adjusted his estimate to a minimum of ten million bales. Neill’s insistence, from August 1899 through the turn of the century, on an improbably high crop estimate had its greatest effect on southern planters, who sold most of their crop in the first half of the cotton year.¹⁴³ As an official of the Division of Statistics later lamented,

It is not too much to say that had the carefully collected information published by the Department during this period had the influence on prices that it should have had, the

¹⁴⁰ Ibid.

¹⁴¹ Watkins, *The Cotton Crop of 1899-1900*, 29.

¹⁴² “Mr. Neill on Cotton,” *Wall Street Journal*, November 29, 1899.

¹⁴³ The cotton cultivation cycle remained the same throughout the nineteenth century: planters broke the land in the late winter and planted cotton rows, then farm laborers thinned and weeded the crop once it had sprouted, until July, when field labor stopped. Cotton bolls yielded their lint in September and October, when cotton picking began. After the seeds were separated from the lint by the cotton gin, the lint was baled for market, and the seeds were kept for future planting and sold to cottonseed oil companies. Before the 1880s, leftover cottonseeds were disposed of. This account is drawn from Daniel, *Breaking the Land*, 6.

planter would have received from two to three cents per pound more than he actually received, the effect of the high private estimates above quoted and especially of the persistency with which they were adhered to by their author [Neill] being to check any advance of prices in Liverpool, the market that has always regulated prices in this country.¹⁴⁴

Neill's false cotton prophecy for the fall of 1899 cost some southern cotton growers their profits, and it cost him his reputation in New Orleans and Liverpool alike.

Neill's estimate was 2.5 million bales over the final crop total for the 1899-1900 cotton season: 9,142,838 million bales. Neill's insistence upon a meaningful comparison between the current year's crop and the previous year's had been disproven twice by Chief Statistician John Hyde, first in theory when Hyde uncovered Neill's manipulation of Weather Bureau rainfall totals, and second in actuality when Hyde and his personnel at the Division of Statistics recorded the current year's crop as 2,046,367 bales less than the total commercial crop for 1898-99.¹⁴⁵ And although the 1899-1900 cotton crop of 9.1 million bales was over 2 million bales less than the previous year's high of 11.2 million bales, its value was nearly \$30 million more.¹⁴⁶

The Division of Statistics conducted its retrospective enumeration of the cotton crop each year not by relying on the crop estimates of government statisticians or the reports of cotton growers themselves but rather by counting cotton bales at the points of consumption and transportation. Southern cotton mills, which had multiplied rapidly in a late-century surge of domestic cotton textile production, provided receipts, along with railroad and shipping companies, for the shipment of cotton and thereby provided the federal government with its most accurate accounting of the year's cotton crop. For all cotton-producing states and territories, the Division of Statistics tabulated the number of bales of cotton that left each state en route to mills

¹⁴⁴ Watkins, *The Cotton Crop of 1899-1900*, 29.

¹⁴⁵ *Fort Worth (TX) Morning Register*, September 4, 1900, p. 4; *Ibid.*, 7.

¹⁴⁶ Watkins, *The Cotton Crop of 1899-1900*, 30.

both foreign and domestic, as well as the number of bales that came into each state from another via rail, water, or wagon shipment.¹⁴⁷ Interstate shipping of cotton was quite common when mills could procure cheaper cotton from outlying markets or when they sought a class or grade of cotton that local production could not satisfy.¹⁴⁸ Thus the most accurate cotton crop statistics—a retrospective enumeration that could then be used to verify the cotton predictions of Henry Neill and others—came not from the point of production or from the commodity exchanges where cotton was traded as a financial abstraction, but rather from the geographical flow of the physical commodity through the countryside.

Although Neill continued to publish cotton estimates in the early years of the twentieth century, the public generally put far less stock in his forecasts than it had previously. But when Neill fell silent the year after his exposure and had issued no cotton forecast by September 1900, some still wanted a prophecy from the man they now knew was a “false prophet.”¹⁴⁹ As a Fort Worth newspaper remarked, “An estimate from him would be received with some interest. Not that it would command respect, but people would just like to know what he has to say.”¹⁵⁰

Henry Neill and his colleagues in the business of private cotton forecasting were not the only ones whose predictions dramatically influenced prices on commodity exchanges. The federal government’s crop reporting service, as USDA statistician George K. Holmes told his audience at the Grangers’ state convention at Brandywine Springs, Delaware in September 1900, occasionally drove prices higher and lower. Holmes’s words rang especially true three months later, when the Division of Statistics’ December 10 crop estimate of 10.1 million bales, a full 500,000 bales higher than expected, threw the New York Cotton Exchange into a frenzied sell-

¹⁴⁷ *Ibid.*, 6

¹⁴⁸ *Ibid.*, 25.

¹⁴⁹ “The Fall of a Prophet of Evil,” *Atlanta Constitution*, November 7, 1899.

¹⁵⁰ *Fort Worth (TX) Morning Register*, September 4, 1900, p. 4.

off in which prices fluctuated so quickly they defied recording. Perhaps chastened by his recent exposure as “the great fakir of cotton estimates,” Henry Neill issued an estimate of 9.6 million bales, lower than the rest of the commercial crop estimates, which averaged 9.75 million bales.¹⁵¹ When the Division of Statistics estimate was released at noon, brokers raced to unload their futures for January delivery, and prices plummeted. In the ensuing minutes of chaos, cotton lost two dollars a bale, and across the trading floor “half a dozen prices were quoted for the same month at the same instant.” As the *Dallas Morning News* headline blared, the “Cotton Pit Was Wild.”¹⁵²

Holmes had told his audience three months earlier that the government’s crop estimates were “more trustworthy” than those of private forecasters and thus served “as a corrective” to a market easily swayed by erroneous private forecasts.¹⁵³ Holmes took pains to distinguish for his audience the effects of the federal government’s ostensibly more authentic and accurate statistical work from that of private forecasters, telling the Delaware Grangers that the Division of Statistics’ crop reporting service was “a steadier of prices and this is a good thing for the farmer. It is better for the farmer to foresee nearly what he is going to obtain in the sale of his crop than it is for him to remain in the dark, where he will often suffer for want of foreknowledge.”¹⁵⁴ They most likely had not heard Holmes’s message directly in Delaware, but

¹⁵¹ “Mr. Neill’s Fakes,” *Atlanta Constitution*, November 1, 1899. Exactly seven years and one month after Henry M. Neill infamously predicted a cotton crop of an unprecedented twelve million bales—a prediction that ultimately led to his public denunciation as a false prophet in 1899—he failed to foresee the danger posed by an oncoming New Orleans streetcar. Neill, standing too close while trying to hail the onrushing car on the morning of September 12, 1906, was hit by the front step of the streetcar and thrown to the ground. Neill succumbed to his injuries later that evening, thereby providing his harshest critics at the *Atlanta Constitution* with this headline: “Well Known Cotton Statistician Meets Death by Accident.” “Henry M. Neill Killed by Car,” *Atlanta Constitution*, September 13, 1906; “Henry M. Neill Killed,” *New York Times*, September 13, 1906.

¹⁵² “Cotton Pit Was Wild,” *Dallas Morning News*, December 11, 1900.

¹⁵³ USDA, “Practical Results of the Work of the Department of Agriculture: Address Delivered at the Annual Convention of the State Grange of the Patrons of Husbandry at Brandywine Springs, Del.,” Crop Report And Historical Materials, 1914-1918, Box 1, RG 355, National Archives II.

¹⁵⁴ *Ibid.*

some Southern cotton growers who had lost their profits to the infamous cotton prophet also named crop foreknowledge as their primary desideratum.

Henry M. Neill's manipulations of the cotton market in the 1899-1900 season spurred southern cotton growers to political action, particularly in Georgia and Alabama, where state chapters of the Cotton Growers' Protective Association were established in the summer of 1900. Harvie Jordan, president of the Georgia Cotton Growers' Protective Association, issued a broadside that outlined his plan for the establishment of county sub-organizations that would comprise the state chapter. Each county sub-organization would have its own president, vice-president, secretary, treasurer, and executive committee, as well as the authority to carry out the local work of the association.

And the local work of the Cotton Growers' Protective Association was to be agricultural statistics. The first priority of the county sub-organization plan was to mount cotton growers' own statistical defense against the powers of Henry M. Neill and his fellow bear-market cotton forecasters. "The object of the movement," Jordan declared, ". . . is first to obtain correct, statistical information in regard to the cotton crop . . ." ¹⁵⁵ Such information would be collected weekly from cotton ginners and secretaries of the sub-organizations and, once tabulated, would provide accurate figures of weekly cotton sales as well as estimates of total yield. What Jordan proposed was essentially a local version of the Division of Statistics' sprawling crop reporting network.

The infamous Henry Neill was featured prominently in another of Jordan's broadsides, which exhorted Georgia's cotton growers to join the movement to counter the influence of Neill, take a greater hand in determining the price of their cotton, and thus achieve greater economic

¹⁵⁵ "County Sub-Organizations," broadside, 1900, Dudley M. Hughes Papers, Hargrett Library Broadside Collection, 1900-1919, University of Georgia Libraries, <http://www.libs.uga.edu/hargrett/rarebook/broadside/> (accessed July 18, 2008).

independence from American cotton exchanges and British buyers and speculators. Jordan declared that “[t]his information will cover facts, and will check the annual false estimates sent out by such men as Neil, who last season, caused the farmers of the South to lose over a hundred million dollars in the sale of their cotton at low prices.”¹⁵⁶ The broadside implored Georgia’s cotton growers to participate in the effort “to check false estimates gotten up by such men as Neil for speculative purposes and to depress prices . . . and become an active worker in the grandest movement the South has ever undertaken.”¹⁵⁷

But Jordan did not believe that equipping cotton growers with crop statistics alone would be enough to “break the shackles . . . to Wall Street and Liverpool gamblers,” as he put it.¹⁵⁸ He also secured the financial support of the Georgia Bankers Association in creating a local subtreasury: the Georgia bankers agreed to extend cash advances to cotton growers at 75 percent of cotton market value and would accept warehouse receipts as collateral.¹⁵⁹ An identical agricultural statistics and subtreasury initiative was organized by the Alabama Cotton Growers’ Protective Association in July 1900, and letters came flooding in from across the cotton South in support of Jordan’s vision.¹⁶⁰ Jordan also spent considerable time on the road, traveling throughout the South to urge growers to establish their own local branches of the Cotton Growers’ Protective Association, and to hold their cotton off the market and sell it gradually

¹⁵⁶ Ibid.

¹⁵⁷ “Georgia Cotton Growers!” broadside, 190-, Dudley M. Hughes Papers, Hargrett Library Broadside Collection, 1900-1919, University of Georgia Libraries <http://www.libs.uga.edu/hargrett/rarebook/broadside/> (accessed July 18, 2008).

¹⁵⁸ Ibid.

¹⁵⁹ “Georgia Bankers Will Aid Georgia Cotton Growers” broadside, 1900, Dudley M. Hughes Papers, Hargrett Library Broadside Collection, 1900-1919, University of Georgia Libraries, <http://www.libs.uga.edu/hargrett/rarebook/broadside/> (accessed July 18, 2008); “Cotton Growers are Organizing,” *Atlanta Constitution*, August 26, 1900.

¹⁶⁰ “Alabama Growers Organize,” *Atlanta Constitution*, July 19, 1900; “Organization Everywhere,” *Macon (GA) Telegraph*, July 8, 1900.

until the price reached the elusive ten cents per pound.¹⁶¹ By late August 1900, the cotton growers' movement had taken root throughout Georgia, with a reported majority of Georgia's 137 counties having their own branches.¹⁶²

By October 1900, the Cotton Growers' Protective Association was strong in Georgia, Alabama, and South Carolina, and Jordan called for the establishment of a centralized bureaucracy to coordinate the distribution and collection of what he said was quickly becoming an overwhelming number of crop reports. Georgia alone counted three thousand members across approximately forty counties.¹⁶³ In February 1901 the Interstate Southern Cotton Growers' Protective Association was formally established, with representatives from Georgia, North Carolina, South Carolina, and Mississippi present, along with letters of support from other states that did not send representatives. Jordan was elected president and charged with the task of organizing state conventions throughout the cotton South. The new interstate association created a constitution that set forth its three primary purposes, the first of which was "to gather and distribute all information possible, and especially statistical information" on the cotton crop.¹⁶⁴ A public relations committee was also formed to ensure that the association's message was conveyed regularly to editors and newspaper reporters: cotton crop statistics must be published as often as possible, and growers must be reminded to hold back some of their crop at the start of the season (from September to January) so as to prevent a bearish surplus.¹⁶⁵ The *Atlanta Constitution* had high hopes for the burgeoning association, proclaiming that "[i]t is expected

¹⁶¹ "Upson County Cotton Men," *Atlanta Constitution*, August 23, 1900; "Why Republicans Should Have It," *Macon Telegraph*, August 9, 1900.

¹⁶² "Cotton Growers Are Organizing," *Atlanta Constitution*, August 26, 1900.

¹⁶³ "They Met and Had Talk on Cotton," *Atlanta Constitution*, October 6, 1900.

¹⁶⁴ "Organization of Cotton Growers," *Columbus Enquirer-Sun*, February 15, 1901.

¹⁶⁵ "Cotton Men to Protect Crops," *Atlanta Constitution*, February 15, 1901; "Cotton-Growers Unite," *Washington Post*, February 15, 1901.

ultimately to organize what will develop into the greatest bureau of cotton statistics the world has ever known.”¹⁶⁶

But the *Constitution's* prediction was not accurate. The Cotton Growers' Protective Association never became a powerful agricultural statistics bureau, and it was basically supplanted by the Southern Cotton Association, itself in existence only from 1905 to 1908.¹⁶⁷ In the estimation of historian Theodore Saloutos, the Cotton Growers' Protective Association was just a “‘letter-head organization’” that left scant historical traces of its work. But the newspaper record of Harvie Jordan's public activities suggests that the Cotton Growers' Protective Association did indeed begin building an agricultural statistics reporting network that functioned for at least a year or two. And although the Cotton Growers' Protective Association's local cotton statistics bureau was short-lived, it is important to note that the Association's avowed statistical resistance against an unpredictable market was, during the final years of Henry Neill's reign, its overarching purpose. The more historically common practices of holding cotton off the market and proposing acreage reduction were, in Harvie Jordan's program, secondary to statistical inquiry.

Rather than tabulating their own agricultural statistics, farmers throughout the nineteenth century adopted multiple strategies in their frequently unsuccessful attempts to gain economic leverage in a market increasingly controlled by a far-flung network of commodity exchanges, commercial trading firms, urban financial institutions, and transportation companies. The simplest strategy, with precedents in the antebellum cotton economy, was withholding a crop from the market and selling it more gradually than usual in order to drive prices up.¹⁶⁸ A crucial

¹⁶⁶ “Cotton Men to Protect Crops,” *Atlanta Constitution*, February 15, 1901.

¹⁶⁷ Theodore Saloutos, “The Southern Cotton Association, 1905-1908,” *Journal of Southern History* 13, no. 4 (1947): 492.

¹⁶⁸ “Will Organize to Hold Cotton,” *Atlanta Constitution*, December 9, 1904.

component of that option was the warehousing system, which, as a Birmingham paper noted, might be the “remedy . . . under which producers would become independent of Mr. Neill’s premature opinions.”¹⁶⁹ Warehousing created a mechanism whereby farmers could safely store a portion of their crop in exchange for credit at low interest rates, at once severing their fetters to financial middlemen and exercising greater control over when to bring their product to market.¹⁷⁰ Acreage reduction, a more common proposal than practice, originated in the early-seventeenth-century American tobacco economy.¹⁷¹ Leaders among the Southern cotton growers as well as cotton growers’ associations urged a concerted effort at production control throughout the 1890s, but acreage reductions proved nearly impossible to implement and never had their intended dramatic impact on prices. Farmers’ attempts at coordinated production and marketing controls ultimately faded along with the late-nineteenth-century collection of agrarian organizations that included the Grangers and Farmers’ Alliance.¹⁷²

According to John Hyde, Chief of the USDA’s Division of Statistics and the exposé of Henry M. Neill’s manipulation of Weather Bureau rainfall data in the fall of 1899, even if farmers’ organizations ultimately failed to exert upward pressure on agricultural commodity prices, the federal government’s agricultural statistics program could tip the market in their favor. In Congressional testimony during the winter of 1902-03 regarding the potential establishment of the Department of Commerce and Labor, Hyde argued that the Department of Commerce should not take over the Division of Statistics:

“The Division of Statistics of the Department of Agriculture, whatever it may be in statute books and appropriation bills, whatever it may be nominally, is really, practically, a great aggregate, or organization, of farmers for their mutual protection, to do for them

¹⁶⁹ “Mr. Henry Neill, Cotton Expert,” *Birmingham (AL) Age Herald*, November 11, 1899.

¹⁷⁰ Fite, *Cotton Fields No More*, 58, 63.

¹⁷¹ *Ibid.*, 65.

¹⁷² On the enduring legacy of Populist ideals in Progressive-era legislation, see Elizabeth Sanders, *Roots of Reform: Farmers, Workers, and the American State, 1877-1917* (Chicago: University of Chicago Press, 1999).

that which they cannot do for themselves by any association—state grangers, national grangers, or any other organization—that is intended to protect them against the speculator.”¹⁷³

The House Committee on Interstate and Foreign Commerce was reportedly taken aback by Hyde’s characterization of the federal government’s agricultural statistics program as less than objective. Hyde went on to remind the committee of the fundamental reason why the Division of Statistics was devoted to the farmers’ interest: farmers comprised almost 90 percent of its nearly a quarter of a million crop correspondents. ““Of the 240,000 correspondents, crop reporters, which the department has, fully 210,000 are farmers, and they regard the statistical work of the department as being their own work, or in their own interest,”” said Hyde.¹⁷⁴ But this hybrid statistical agency that incorporated farmers’ local observations into a professional government bureaucracy did not produce what were seen as accurate and reliable crop estimates, as we shall see in what follows.

After exposing Henry Neill’s manipulation of the Weather Bureau rainfall data and the cotton market, John Hyde next trained his scrutiny on the agricultural Census of 1900, published in 1901. Comparing the crop estimates of the USDA’s Division of Statistics to the Census data for acreage and production, Hyde found dramatic discrepancies. The Census figures for corn acreage (nearly 95 million acres) and wheat acreage (52.5 million acres) were 16 percent and 19 percent higher, respectively, than the Division of Statistics’ estimates. Hyde’s analysis of the Census data revealed two glaring inconsistencies. First, the Census had recorded in over one hundred counties a geographical impossibility: more farm acreage than total land area. Second, the 1900 Census recorded a 35 percent increase in farm acreage from the previous Census of 1890, which had recorded a 16 percent increase in farm acreage from the 1880 Census. But it

¹⁷³ Quoted in H. Parker Willis, “The Adjustment of Crop Statistics: III,” *Journal of Political Economy* 11, no. 4 (1903): 546.

¹⁷⁴ *Ibid.*

was generally agreed upon that farm acreage had expanded more in the 1880s than in the 1890s.¹⁷⁵ As an official within the USDA's Bureau of Statistics later observed, Hyde's inquiry uncovered several hundred errors in the agricultural Census, which this particular official characterized as "'honey-combed' with errors."¹⁷⁶ And agricultural statisticians were not the only ones who took notice of alleged Census inaccuracies: as a USDA crop estimator later recalled, Hyde's investigation produced a "controversy [that] had the effect of discrediting, without discrimination, in the minds of many people, all agricultural statistics."¹⁷⁷

In 1902 Henry Parker Willis, a twenty-eight-year-old economist who would later become an influential expert on federal finance reform, agreed that the recent proliferation and increasing systematization of agricultural statistics had generated much "confusion" indeed.¹⁷⁸ But Willis placed much of the blame not on the Census but instead on the USDA's Division of Statistics, dismissing their crop estimates as so inaccurate "as to be practically worthless as a guide to traders and speculators."¹⁷⁹

During the first few years of the twentieth century, the southern cotton economy rebounded, with prices soaring in 1903 and 1904, up to seventeen cents a pound in early 1904. Growers planted more and more acreage, and in 1904 30 million acres planted yielded a record 13.7 million bales. But the record crop eventually sent prices downward, down to six to seven cents a pound by the end of 1904. Speaking to several hundred members of the Southern Cotton Growers' Protective Association at the St. Louis World's Fair in late September 1904, President Harvie Jordan urged his audience to ignore the bear estimates and fix their minimum price at ten

¹⁷⁵ This account is drawn from Murray, "A Close-up View of the Development of Agricultural Statistics from 1900 to 1920," 707-8.

¹⁷⁶ "Devices for Avoiding Error," undated manuscript, Crop Report And Historical Materials, 1914-1918, Box 1, RG 355, National Archives II.

¹⁷⁷ Murray, "A Close-up View of the Development of Agricultural Statistics from 1900 to 1920," 708.

¹⁷⁸ H. Parker Willis, "The Adjustment of Crop Statistics," *Journal of Political Economy* 11, no. 1 (1902): 1-2.

¹⁷⁹ *Ibid.*, 14.

cents per pound. And rather than rush their crop to market to pay debts due in the fall, Jordan urged cash-strapped growers to store their crop in warehouses and then borrow against the receipts.¹⁸⁰

In December 1904, Jordan organized “mass meetings” of all cotton farmers east of the Mississippi in hopes of convincing them to hold between two and three million bales off the market until prices hit ten cents per pound.¹⁸¹ Farmers and destitute merchants in Fort Gaines, Georgia took more drastic measures on December 28, 1904, when they burned three thousand bales of cotton in the courthouse square.¹⁸² And two days later, the North Carolina branch of the Cotton Growers’ Protective Association held township meetings and a petition drive in order to launch its own acreage reduction initiative, pledging to cut cotton acreage by one-quarter in 1905, as well as to market their crop only through their own organization for no less than ten cents a pound.¹⁸³ About a week later, Harvie Jordan spoke out against calls for more burning of cotton, arguing instead that cooperation among growers, bankers, and spinners would be far more effective in “tak[ing] our cotton out of the hands of the speculators.”¹⁸⁴

The discrepancy between the agricultural Census data of 1900 and the USDA Division of Statistics crop estimates—a cause of great consternation to academic economist Henry Parker Willis and no doubt scores of cotton growers, traders, speculators, and buyers—was eclipsed by an even more sensational controversy over agricultural statistics that came to light in 1905. At the turn of the century, numerous accusations of corruption within government crop reporting came from cotton traders who were convinced that speculators were privy to crop estimates

¹⁸⁰ “Jordan Urges Holding Crop,” *Atlanta Constitution*, November 3, 1904.

¹⁸¹ “Will Organize to Hold Cotton,” *Atlanta Constitution*, December 9, 1904.

¹⁸² Fite, *Cotton Fields No More*, 65. As Fite reports, the Georgia growers threatened widespread burning, perhaps up to two million bales, but they never followed through.

¹⁸³ “May Reduce Cotton Acreage,” *New York Times*, December 30, 1904.

¹⁸⁴ “Opposed to Cotton Burning,” *Washington Post*, January 8, 1905; “Denounce Cotton Burning,” *New York Times*, January 8, 1905.

before their official publication, and worse, that Census or USDA officials were publishing fraudulent figures for the sake of speculators' profit.¹⁸⁵ In March 1902, Secretary of Agriculture James F. Wilson confidently dismissed such allegations, assuring Senator William B. Allison that "[t]he position of the department is absolutely unassailable, since with regard to the more important crops no approach to a definite estimate can possibly be made until within one or two hours of the time fixed for its publication."¹⁸⁶ Given this unshakeable faith in the integrity of his bureaucracy and his personnel, Secretary Wilson could not possibly have foreseen the public scandal and federal scrutiny that awaited the USDA's crop reporting service.

The public first learned of the "cotton leak" scandal, as it came to be known, in June 1905, when Robert Cheatham, Secretary of the Cotton Growers' Association, advised Secretary Wilson that he had learned—from one of the conspirators—of a cotton conspiracy. At the center of the scandal stood USDA assistant statistician Edwin S. Holmes, who, over a period of several months in late 1904, leaked crop reports a day early to New York cotton brokers L. C. Van Riper and Frederick A. Peckham, who then turned a profit on the cotton exchange, often by selling short in anticipation of bearish cotton reports. Holmes also apparently falsified the June 1905 cotton crop estimates so as to produce a more bearish report that would drive prices down. Holmes, the two brokers, and a go-between named Moses Haas agreed to split the profits, which, it was revealed during Holmes's trial, totaled at least \$200,000 (and some speculated that the profits were much greater, as much as \$500,000 for Holmes alone). The single biggest haul for

¹⁸⁵ H. Parker Willis, "Cotton and Crop Reporting," *Journal of Political Economy* 13, no. 4 (1905): 522. For a few specific examples of such accusations of crop reporting corruption, see Snyder, "Federal Crop Forecasts and the Cotton Market, 1866-1929," 44.

¹⁸⁶ Quoted in Willis, "Cotton and Crop Reporting," 522.

the foursome was a \$167,000 profit in advance of the December 1904 census cotton report, which they made by short selling before the cotton price broke.¹⁸⁷

What broker Frederick A. Peckham called “a little cotton deal” turned out to be a very big deal, both in public opinion and in the highest reaches of federal government. Sensational details of the scandal and the subsequent Holmes trial, which one writer likened to a Sherlock Holmes story, were splashed throughout daily newspapers, and President Theodore Roosevelt, upon learning of the results of Secretary Wilson’s initial investigation, urged swift and vigorous prosecution of Holmes. In a letter to Attorney General William H. Moody, Roosevelt pronounced Holmes to be ““a far greater scoundrel than if he had stolen money from the government, as he used the government to deceive outsiders and to make money for himself and others.””¹⁸⁸ And Roosevelt put not just Holmes but the entire federal crop reporting system—both the USDA’s Bureau of Statistics and the agricultural data from the twelfth Census—under investigation when he approved the creation of the Committee on Department Methods in June 1905.

The USDA, along with every other executive department, bureau, and division within the federal government, came under scrutiny by the Committee on Department Methods, headed by Assistant Treasury Secretary James H. Keep and commonly known as the Keep Commission. The Keep Commission conducted an investigation from 1905 to 1909 that sought to modernize government business practices, ensure operational efficiency—in short, as President Theodore Roosevelt put it in August 1905, begin a “comprehensive systematic effort to put the country’s

¹⁸⁷ “Peckham Arrested,” *Washington Post*, August 24, 1905; “Holmes Misses Court; Denies Cotton Charge,” *New York Times*, August 27, 1905; “Indicted,” *Boston Daily Globe*, August 26, 1905; “Holmes, Cotton Report Juggler, is Dismissed,” *New York Times*, July 9, 1905; “Cotton Leak Profits,” *Washington Post*, October 14, 1905; “Holmes Leaked and Grew Rich,” *Atlanta Constitution*, May 12, 1907; “Stream of Gold Came from ‘Leak,’” *Chicago Daily Tribune*, June 18, 1907.

¹⁸⁸ “Roosevelt Calls Man Scoundrel,” *Chicago Daily Tribune*, July 16, 1905.

housekeeping in order.”¹⁸⁹ The Keep Commission scrutinized correspondence methods; standardization of forms; systems of record-keeping, accounting, and filing; cooperation and communication among departments and bureaus; salary disbursement and supply procurement, and published its findings in a series of nineteen reports. But because it could only recommend but not legislate reform, the Keep Commission did not yield sweeping change in government bureaucracy.¹⁹⁰ It did, however, play a key role in redefining the USDA’s modern agricultural statistics work, as we shall see.

Assistant statistician Holmes was dismissed from the USDA as soon as the “cotton leak” scandal broke, and an investigation by the Secret Service and the USDA resulted in federal grand jury indictments against Holmes and his three partners in October 1905 for “conspiracy to defraud the Government” and “attempting to commit an offense against the Government which will result in conspiracy to defraud the United States.”¹⁹¹ During the five weeks of Holmes’s trial, as the elaborate workings of the conspiracy were laid bare, testimony revealed, among other details, that Holmes had arranged a secret signal to communicate with his confederates on crop reporting day if need be: from the Department of Agriculture building, he would adjust a window shade upwards to indicate that something had gone wrong with the estimates, and downwards to

¹⁸⁹ *Washington Star*, March 23, 1906, quoted in Harold T. Pinkett, “The Keep Commission, 1905-1909: A Rooseveltian Effort for Administrative Reform,” *Journal of American History* 52, no. 2 (1965): 303.

¹⁹⁰ The Commission had completed most of its major undertakings by December 1907, after which time only two of the original members—Gifford Pinchot and Assistant Secretary of Commerce and Labor Lawrence O. Murray continued their work, and the Subcommittee on Documentary Historical Publications was the final subcommittee to make its report in 1909. The Committee was dissolved in 1909 by the passage of the Tawney Amendment to the Sundry Civil Appropriation Bill, which mandated legislative approval for any commission, board, or investigative body appointed by the president. Although the Commission had no legislative leverage, its nineteen published reports circulated widely in federal government and business circles, and its recommendations did modernize federal record-keeping practices to some extent, particularly in the shift towards vertical filing, card records, and more efficient correspondence filing. On the legacy of the Keep Commission, see Harold T. Pinkett, “Investigations of Federal Record-keeping, 1887-1906,” *American Archivist* 21 (1958): 163-192; Oscar Kraines, “The President Versus Congress: The Keep Commission, 1905-1909,” *Western Political Quarterly* 23, no. 1 (1970): 5-54.

¹⁹¹ “Holmes Misses Court; Denies Cotton Charge,” *New York Times*, August 27, 1905.

indicate that the estimates would be even better than expected.¹⁹² L.C. Van Riper, the broker who became the prosecution's star witness, testified that he didn't think there was anything wrong with the window shade signal because he thought it was "legitimate to get information any way you can."¹⁹³

In July of 1905, right when the crop reporting scandal broke, Secretary of Agriculture James Wilson issued a lengthy list of bureaucratic reforms designed to thwart any subsequent attempts at falsifying or leaking government crop reports. Wilson mandated various security measures designed to preserve the accuracy and secrecy of government crop reports: clerks would tabulate only a portion of each county's figures; tabulation sheets would be numbered at top and bottom and then cut in two, thereby separating the identifying county name from its statistics until final averages were computed; the tabulation of county and township cotton reports from Texas and Georgia (two of the biggest cotton-producing states) were to be locked in a safe by the Secretary or Assistant Secretary of Agriculture until the morning of the cotton reporting day; field reports and telegrams pertaining to any "speculative crops" were to be kept in sealed envelopes under lock and key (along with the Chief Statistician himself on crop reporting day); all Bureau of Statistics telephones were to be disconnected on the morning of the crop report's release; and two special cotton agents were deployed to assist the one existing cotton agent, all of whom were to be assigned to different states and would not communicate with each other.¹⁹⁴

¹⁹² "Holmes' Cotton Code," *Washington Post*, June 21, 1907.

¹⁹³ "Name of Price was Suppressed," *Atlanta Constitution*, June 20, 1907.

¹⁹⁴ *Yearbook of the United States Department of Agriculture, 1905* (Washington, DC: Government Printing Office, 1906), 98-99; USDA, "Orders Governing the Preparation of Monthly Crop Reports of the Bureau of Statistics," July 8, 1905, reprinted in Willis, "Cotton and Crop Reporting," 523-27.

The USDA acknowledged in 1905 that the “cotton leak” scandal and the ensuing investigations had impelled it to “thoroughly recast [its] methods” for producing crop reports.¹⁹⁵ The most significant of the reforms in the Bureau of Statistics was the formation of a crop-reporting board, a committee headed by the Chief Statistician or Chief of the Bureau of Statistics that included four rotating members chosen from among a subset of Bureau officials, statisticians, and field service personnel. On crop reporting days, the board would assemble in Washington in the office of the Chief Statistician under the watchful eye of the Secretary or Assistant Secretary of Agriculture, who looked on as each member first calculated his own crop estimates individually before final figures were agreed upon by the committee as a whole.¹⁹⁶ No longer would a single USDA statistician like Holmes be able to single-handedly manipulate the published crop figures right before their public release.¹⁹⁷

After the formation of the crop-reporting board, the American Cotton Manufacturers’ Association, on behalf of cotton growers who desired lower cotton acreage estimates, began to call for a recalculation of the cotton acreage statistics that Chief Statistician John Hyde had published on June 2, 1905, a request that USDA officials responded to with an even broader review of recently compiled agricultural statistics.¹⁹⁸ In late September 1905, the New England

¹⁹⁵ The USDA’s internal histories cite the 1905 “cotton leak” episode as the impetus for the modernization of the crop reporting bureaucracy as well as the origin story for twentieth-century agricultural statistics. See Rich Allen, *Safeguarding America’s Agricultural Statistics: A Century of Successful and Secure Procedures, 1905-2005* (Washington, DC: USDA National Agricultural Statistics Service, 2007), 1.

¹⁹⁶ *Yearbook of the United States Department of Agriculture, 1905* (Washington, DC: Government Printing Office, 1906), 97-98, quotation on 97; Willis, “Cotton and Crop Reporting,” 523-27.

¹⁹⁷ Following these bureaucratic mechanisms designed to ensure the authenticity and accuracy of government crop reports came a legal mechanism for the same purpose. On March 4, 1909, an act of Congress declared it unlawful for any government employee or associate to leak privileged crop information (whether explicitly or implicitly), or to use such privileged information to speculate on agricultural commodity markets. Violators would face a maximum fine of ten thousand dollars or a prison term of up to ten years. Any government officer or employee involved in the production of agricultural statistics who made a false report would face a fine of five thousand dollars or a prison term of up to five years. USDA, *The Crop and Livestock Reporting Service of the United States*, 12-13.

¹⁹⁸ For a thorough account of this episode, see Henry C. and Anne Dewees Taylor, *The Story of Agricultural Economics in the United States, 1840-1932: Men, Services, Ideas* (Ames: Iowa State College Press, 1952), 217-20.

Cotton Manufacturers' Association had called on Roosevelt to launch an investigation into the government's crop reporting work on the grounds that "the unreliability of Government crop reports and the leaks in the Bureau of Statistics have tended to increase speculation in cotton futures."¹⁹⁹ The board released revised cotton acreage statistics for 1905 which revealed that Hyde, under the influence of Holmes, had estimated acreage too high: the current crop acreage for southern cotton represented a 14.9 percent decrease from the previous year's crop, not the 11.4 percent decrease that had initially been reported (a revision on the order of 500,000 bales).²⁰⁰

The revised figures had an instant impact on the New York Cotton Exchange, sending futures contracts for October delivery soaring, according to the *American Cotton Manufacturer*.²⁰¹ But the crop-reporting board's revised figures didn't comport with any other widely-circulated cotton estimates. The *New York Journal of Commerce and Commercial Bulletin* indicated an acreage decrease of 12.3 percent, while cotton growers' groups pointed to an 18 percent decrease. In the estimation of economist Henry Parker Willis, the ostensibly accurate revised acreage estimate did not inspire public confidence in the beleaguered Bureau of Statistics but rather had the opposite effect of a "discrediting influence."²⁰²

Willis's assessment of the revised acreage estimates proved accurate. In late November of 1905, a *New York Times* headline pronounced the recent months "a season of confusion" for the cotton markets. The source of such cotton confusion was made clear in the next part of the headline: "Wide Differences in Government and Expert 'Mathematical Crops' – Estimates and

¹⁹⁹ *Report to the President by the Committee on Department Methods, Government Crop Conditions* (Washington, DC: Government Printing Office, 1906), 5.

²⁰⁰ "The Cotton Question," *New York Times*, November 26, 1905.

²⁰¹ Taylor and Taylor, *The Story of Agricultural Economics in the United States*, 219.

²⁰² H. Parker Willis, "Cotton and Crop Reporting," 528-29, quotation on 529. Willis's sentiment was echoed (in strikingly similar language) by former USDA statistician Nat C. Murray in 1939. See Murray, "A Close-up View of the Development of Agricultural Statistics from 1900 to 1920," 708.

Facts.” The article went on to cite three varying production estimates: 9,588,000 bales from the Southern Cotton Association; 10,900,000 bales from well-respected cotton forecaster Theodore H. Price; and a characteristically high estimate of 11,500,000 bales from Henry M. Neill. Such a range of cotton estimates was, the *Times* concluded, an entirely appropriate end to the season of dramatic and unpredictable events: the Holmes scandal, the revised cotton acreage estimate, and the continued discrepancies between Census and Bureau of Statistics crop reports.²⁰³ And the publication of differing crop figures from the Bureau of Statistics and the Bureau of the Census throughout October and November 1905 sent cotton prices bouncing wildly up and down the New York Cotton Exchange. As the *New York Evening Post* wryly observed, “no faro-table ever presented such alluring uncertainties as this season’s movement of cotton values.”²⁰⁴

In December 1905, the House Committee on Agriculture held hearings on a joint resolution proposed by Massachusetts Congressman (and cotton manufacturer) William C. Lovering, a resolution that sought revised figures from the USDA for its December cotton estimate (since the December estimate was based in part on the revised July estimate). At the hearings, Lovering quoted former Chief Statistician John Hyde, who told the *Manchester Guardian* that

“there is not the slightest doubt that the correspondents of the Department have combined to mislead it, and that the actual crop will prove to be not far from 11,000,000 bales. The Department’s correspondents always underestimate the crop, and this year the enormous influence of the Southern Cotton Growers’ Association has been brought to bear upon them with the object of inducing them deliberately to misrepresent the actual condition.”²⁰⁵

The Keep Commission’s January 1906 report on the Bureau of Statistics’ crop reporting service seized upon this very problem of underestimating probable yield (which Hyde himself

²⁰³ “The Cotton Question,” *New York Times*, November 26, 1905.

²⁰⁴ “More Fascinating Than Poker,” *Washington Post*, November 18, 1905.

²⁰⁵ House Committee on Agriculture, *Hearing on House Joint Resolution 45*, 59th Cong., 1st sess., Dec. 19, 1905, 1, quoted in Taylor and Taylor, *The Story of Agricultural Economics*, 219.

had revealed to the House Committee on Interstate and Foreign Commerce in 1902), but it faulted government statisticians and not the crop reporters themselves. The Commission's report invoked Hyde's testimony, declaring that "[i]t was clear that [Hyde] had the feeling that the Bureau of Statistics stood for the interest of the farmer or producer rather than for the interest of the buyer or consumer," and calling for crop estimates free of such statistical bias.²⁰⁶

Although the 1905 "cotton leak" scandal revealed intentional fraud in the highest offices of the USDA's Bureau of Statistics, the Keep Commission located the source of crop reporting inaccuracies on the ground, namely the thousands of local volunteer crop reporters who made their own observations of crop acreage, conditions, and yield and then mailed their completed questionnaires back to Washington. The Keep Commission's report called for the elimination of the army of local reporters in favor of a single dedicated correspondent at the county level. The Keep Commission recommended not only a change in the contours of the crop reporting network but also a fundamental redefinition of purpose for the USDA's Bureau of Statistics—a shift from crop estimating to crop forecasting:

The purpose of these (condition) reports is to enable the person receiving them to forecast the total crop. As soon as the figures are announced the commercial world interprets them and by a process of calculations attempts to translate these percentage figures of condition into the number of bales of indicated crop. Speculators announce and reach different results We can see no reason why, instead of leaving this calculation to individuals, it should not be performed by the Bureau.²⁰⁷

But such forecasting would be an inherently uncertain endeavor, in the eyes of the Keep Commission, which concluded its report with the recommendation that the Bureau abandon the mantle of "statistics," for reasons both bureaucratic and epistemological: the Department of Commerce and Labor already had its own Bureau of Statistics, and, more importantly for my

²⁰⁶ Committee on Department Methods, *Report to the President by the Committee on Department Methods, Government Crop Conditions*, 19-20, quotation on 19.

²⁰⁷ *Ibid.*

argument, the work of reporting on crop conditions was by definition not statistical in nature. Crop condition reports “are not statistics, but estimates,” the Keep Commission declared.²⁰⁸

In the early twentieth century, an official in the Bureau of Statistics believed that the crisis of economic certainty had been solved, at least in part, by the predictive capacity of the federal government’s agricultural statistics. He wrote,

It is unsettling to business, whether that of the farmer or that of the merchant, to be at the mercy of large uncertainties. . . . It is better for everyone to know, every one, for every business, in all of life’s undertakings . . . it is better for all to know what the future is to bring forth and as far along that future as possible. Preknowledge of the future with regard to his income has been materially promoted and conferred upon the farmer, and his look into the future has been extended, by the national crop reporting service.²⁰⁹

But such a crisis of economic certainty did endure, not only in modern agricultural statistics but in the modern commodities market more generally. In 1905, the Chicago Board of Trade’s crusade against what it deemed the illegitimate gambling of rural “bucket-shops” culminated in a U.S. Supreme Court ruling in *Board of Trade v. Christie*, which confirmed the legality of organized futures trading but disallowed “bucket-shop” speculation. “Speculation of [the former] kind by competent men,” wrote Justice Oliver Wendell Holmes, Jr., “is the self-adjustment of society to the probable.”²¹⁰ The modern market, according to Holmes’s opinion, was by its very definition the new locus of economic uncertainty: “Of course, in a modern market, contracts are not confined to sales for immediate delivery. People will endeavor to forecast the future, and to make agreements according to their prophecy.”²¹¹

²⁰⁸ *Report to the President by the Committee on Department Methods, Government Crop Conditions*, 24.

²⁰⁹ “Estimating Crop Quantities,” undated manuscript, Crop Report and Historical Materials, 1914-1918, Box 1, RG 355, National Archives II.

²¹⁰ *Board of Trade v. Christie Grain & Stock Co.*, 198 U.S. 236, 247 (1905).

²¹¹ *Ibid.* On the *Christie* decision’s reformulation of futures trading, see Levy, “Contemplating Delivery: Futures Trading and the Problem of Commodity Exchange in the United States, 1875-1905,” 327-35; Lipartito, “The New York Cotton Exchange and the Development of the Futures Market,” 67-68.

In 1913, right at the moment when the USDA was formally redefining its crop estimates as crop forecasts, Bureau of Statistics Chief Olmsted acknowledged in a *New York Times* interview the inevitable uncertainty of crop reports:

Every quantitative estimate of the bureau . . . whether relating to acreage and production of crops or numbers of live stock, is nothing more than a consensus of judgment of many thousands of correspondents and a limited number of agents. It is, of course, out of the question that an agricultural census be taken every year; the expense would be prohibitive. The only way in which the constant and increasing demand for current information can be met is through carefully made estimates. It is not claimed that the estimates of the Bureau of Statistics are exactly accurate; no estimate can be. They are given as the best available data, representing the fullest information obtainable at the time they are made.²¹²

Thus the Chief of the Bureau of Statistics in the early twentieth century, with his characterization of crop estimates as “a consensus of judgment,” publicly acknowledged what some USDA statisticians, many commercial cotton estimators, and all the cotton growers who suffered the economic consequences of Henry Neill’s cotton prophecies had known throughout the late nineteenth century: modern agricultural statistics was not an exact but rather a probabilistic science.

²¹² “Government’s Crop Report the Work of 130,000 People,” *New York Times*, June 1, 1913.

Chapter 3: Weather Telegraphers

As state agricultural societies, the agricultural press, and the federal government all experimented with the development of crop reporting systems to meet the demand for agricultural statistics in the years leading up the Civil War, state agricultural societies also began to call for the adaptation of maritime meteorology systems to a land-based weather service for agriculture. The demand for a rural weather service was explicitly addressed by the federal government in the early 1870s, when a national weather service for the “benefit of commerce and agriculture” was created within the U.S. Army Signal Service. Between 1870 and 1891, the U.S. Army’s national weather service used an increasingly dense telegraphic network to systematically record and transmit local weather observations to the Washington headquarters of the Signal Service, which then disseminated storm warnings and short-term forecasts across the nation for first time, thereby marking the formal introduction of the federal government’s weather “probabilities” into everyday American life.

As the postbellum telegraphic network and the weather service expanded their national coverage in the 1870s and 1880s, the federal government and farmers alike acknowledged the problem of transmitting timely and useful forecasts to what the Signal Service in 1876 called “the distant parts of the country”—places outside the reach of telegraph lines and other signaling technologies.¹ But the federal government, state and local institutions, and local farmers envisioned and implemented different solutions to the problem of disseminating daily weather forecasts and storm warnings to the countryside. In this chapter I argue that the U.S. Signal Service’s late-century problem of providing farmers with access to weather information that

¹ U.S. Department of War, *Annual Report of the Secretary of War* (Washington, DC: Government Printing Office, 1876), 10.

promised to mitigate their economic risk in the face of uncertain and unpredictable weather was solved not by centralized bureaucratic measures but rather local technological solutions and decentralized bureaucratic innovations: a Michigan farmers' telegraph cooperative and the advent of state weather agencies in the 1880s and early 1890s, and the introduction of rural free delivery and rural telephony at the turn of the century. The federal government's perennial problem of administering a weather service that would adequately serve "the distant parts of the country" found its solution in the countryside itself.

The roots of the national weather service in the United States were not agricultural in nature.² The military first systematized weather observation and reporting beginning in 1814 through Army surgeons' diaries of climate and disease, and by 1853, the Surgeon General supervised ninety-seven camps in a weather reporting network.³ From the 1850s to the 1870s, various efforts to collect, organize, and analyze meteorological data focused primarily on naval and commercial interests within a national and international context, not on agricultural interests in various local climates. Navy Lieutenant Matthew Fontaine Maury's pioneering work in maritime meteorology produced wind, storm, and rain charts that were touted primarily for their value in mitigating risk for commercial shippers who saved considerable time and money with

² The history of correlating weather predictions with agricultural practices predates telegraphy, the Signal Corps, and the national weather service. By the early nineteenth century, hundreds of various local "farmer's almanacs" were in publication but not in competition with each other, since most were limited to state or regional weather forecasts and to circulations well under one hundred thousand. These early farmer's almanacs offered general long-range weather forecasts (based largely on planetary meteorology) to help readers predict optimum planting and harvesting times. Although nearly every almanac, not only farmer's almanacs, included some type of long-range weather prediction since the late seventeenth century, almanacs devoted entirely to the weather did not appear until the 1877 publication of Canadian geologist and ornithologist Henry Vennor's best-selling *Vennor's Weather Almanac*. On the central role of almanacs in weather forecasting, see Robb Sagendorph, *America and Her Almanacs: Wit, Wisdom and Weather, 1639-1970* (Boston: Little, Brown and Company, 1970), 25, 118-19.

³ The expansion of an Army weather service was effectively halted when the Army dismissed the proposal of U.S. government meteorologist James Espy, who envisioned a collaboration with France and England in measuring and tracking storms in the Atlantic. Espy then appealed to the Navy, which would ultimately become the center of one of the most widely celebrated meteorological observation systems of the nineteenth century. Charles C. Bates and John F. Fuller, *America's Weather Warriors, 1814-1985* (College Station: Texas A&M University Press, 1986), 12; Donald R. Whitnah, *A History of the United States Weather Bureau* (Urbana: University of Illinois Press, 1961), 10-11.

more efficient international routes.⁴ Even though Maury himself “urg[ed] the extension to the land—for the benefit of farmers, the shipping in our ports, and the industrial pursuits of the country generally”—of his maritime meteorological project, his work established a military and maritime context for the early years of the weather service in the United States, a legacy that inhibited the creation of a land-based weather service because of its emphasis on long-term data collection and analysis, rather than on the immediate and widespread dissemination of short-term forecasts and storm warnings.⁵

State and county agricultural societies immediately recognized the potential of Maury’s maritime meteorology for land use, and they petitioned the House Committee on Agriculture accordingly in the mid-1850s. In February 1856, two petitions from state agricultural societies explicitly called for the application of Maury’s naval observation system to land. Virginia’s Jefferson County Agricultural Society “believ[ed] the interests of Agriculture could not fail to be greatly promoted by a careful comparison of extended observations, made throughout by the country, upon our climate and atmosphere,” and the New York State Agricultural Society saw “immediate benefit” for a land-based version of Maury’s system.⁶

⁴ Maury’s work included analysis of old ship logs in 1838, coordination of American shipmasters’ weather observations in 1842, and standardization of maritime weather logs from over one thousand ships by 1852. In 1860, Maury and his staff published a series of international wind, whaling, and storm charts to great public acclaim. Maury was already well-known among the international meteorological community, however, as a result of the first international maritime meteorology conference he organized in Brussels in late 1853, as well as the publication of the best-selling *The Physical Geography of the Sea and Its Meteorology* of 1855, which was published in fifteen editions in the United States and twenty-two editions in Great Britain. Patrick Hughes, *A Century of Weather Service: A History of the Birth and Growth of the National Weather Service, 1870-1970* (New York: Gordon and Breach, 1970), 19; Bates and Fuller, *America’s Weather Warriors*, 6-7.

⁵ *Journal of the American Geographical and Statistical Society* (1860), quoted in Thompson B. Maury, “The Telegraph and the Storm: The United States Signal Service,” *Harper’s New Monthly Magazine*, August 1871, 401.

⁶ Jefferson County Agricultural Society, “Petition for the adoption of Lieutenant M. F. Maury’s system of meteorological observation,” February 1856, and New York State Agricultural Society, “Petition for the adoption of Lieutenant M. F. Maury’s system of meteorological observations,” February 1856, folder “Adoption of Lieutenant M. F. Maury’s System of Meteorological . . . Feb. 14 to Feb. 28, 1856,” HR 34A-G1.1, House Committee on Agriculture, Records of the United States House of Representatives, RG 233, National Archives.

Enthusiasm for the adaptation of Maury's system from sea to land was not universally shared. Between 1853 and 1856, Secretary of the Smithsonian Joseph Henry opposed Maury's own calls for land-based weather observations, claiming that Maury's system was too simple for inland and that Maury lacked the expertise to successfully implement the transfer. Henry's objections arose from the fact that the Smithsonian was already working on a land-based system of weather reporting that collected observations by telegraph and mail from volunteers scattered across thirty-one states in 1854, as well as a few observers in Canada, Nova Scotia, and Paraguay.⁷ In 1857 Henry and other members of the scientific community opposed a bill that would have provided twenty thousand dollars to equip farmers with weather recording instruments.⁸

By the Civil War era, Joseph Henry's Smithsonian weather reporting network, which boasted five hundred observation stations in 1860, seemed a promising model for an agricultural weather service. The Census of 1860 noted that "[t]he want of meteorological knowledge, and consequent want of adaptation of our industry to the laws of climate, both general and local, is a frequent source of loss to the farmer."⁹ But Henry's project was significantly derailed when the Civil War cut off his telegraphic connection with his southern observers and the Smithsonian suffered fire damage in January 1865.¹⁰ In that same year the U.S. Commissioner of Agriculture urged the support of Henry's new proposal for government funding of a national network of

⁷ Whitnah, *A History of the United States Weather Bureau*, 12.

⁸ This was not the first time that the federal government had distributed meteorological instruments to farmers. In 1855 the agricultural branch of the U.S. Patent Office had already distributed weather observation instruments, including two hundred rain gauges, for the purposes of long-term data collection and analysis. Whitnah, *A History of the United States Weather Bureau*, 15; James Rodger Fleming, *Meteorology in America, 1800-1870* (Baltimore: Johns Hopkins University Press, 1990), 25-28, 109.

⁹ Joseph C. G. Kennedy, *Preliminary Report on the Eighth Census*, 37th Cong., 2d sess., 1862, H. Rep. Ex. Doc. 116, 101.

¹⁰ On the effects of the Civil War on the telegraph industry, see Robert Luther Thompson, *Wiring a Continent: The History of the Telegraph Industry in the United States, 1832-1866* (Princeton: Princeton University Press, 1947), chap. 27. On the Civil War's disruption of the southern telegraph industry, see J. Cutler Andrews, "The Southern Telegraph Company, 1861-1865: A Chapter in the History of Wartime Communication," *Journal of Southern History* 30, no. 3 (1964): 319-44.

weather observers, citing agriculturalists' need for both long-term meteorological data and short-term weather warnings.

The need for a lake storm warning system was ultimately the impetus for the creation of the national weather service in 1870, when the danger posed by lake storms to commercial shippers captured the attention of Congress, thanks to the combined efforts of eminent meteorologist Cleveland Abbe, meteorologist and civil engineer Increase Lapham, and Congressman Halbert Paine, a former student of renowned storm researcher Elias Loomis at Western Reserve College. On December 19, 1869, Paine proposed a bill asking for federal oversight of a weather service for the stormy Great Lakes, as well as the Gulf and Atlantic coasts.¹¹ The national weather service was assigned to the U.S. Army Signal Service, due in large part to the effective campaigning of Chief Signal Officer Albert J. Myer. Seeking to renew the legitimacy of the Signal Service after his embarrassing dismissal as head of the beleaguered corps in the middle of the Civil War, the reinstated Chief Signal Officer formally indicated his interest in a letter to Paine supporting the storm warning bill.¹² Around this time, Myer, eager to generate more institutional stability and funding for the Signal Service, had also submitted to the

¹¹ Abbe had tried to start a Midwestern regional weather observation network, daily bulletin, and forecast of daily "probabilities" in 1869, but without funding and cooperation from the Chicago Board of Trade, he couldn't adequately cover the Great Lakes region. So Abbe appealed to his friend Lapham, who had tried to start a Wisconsin state weather service a decade earlier, and Lapham petitioned Congressman Paine, enumerating the 1,914 ships that had crashed in stormy lake weather that year alone, costing 209 lives and \$4.1 million. Bates and Fuller, *America's Weather Warriors*, 9-10; Erik D. Craft, "Private Weather Organizations and the Founding of the United States Weather Bureau," *Journal of Economic History* 59, no. 4 (Dec., 1999): 1067. For an account of various other plans for a national weather service that emerged together in the late 1860s, see Whitnah, *A History of the United States Weather Bureau*, 17-20.

¹² Paul J. Scheips, "'Old Probabilities': A. J. Myer and the Signal Corps Weather Service," *Arlington Historical Magazine* 5, no. 2 (1974): 29-43; Whitnah, *A History of the United States Weather Bureau*, 18; Joseph M. Hawes, "The Signal Corps and the Weather Service, 1870-1890," *Military Affairs* 30, no. 2 (1966): 68-76. Myer was dismissed as Chief Signal Officer in 1863 due to the failure of his tactical telegraphy systems and his clashes with Secretary of War Edwin Stanton, and the telegraphic equipment of his Signal Corps was temporarily absorbed by the rival U.S. Military Telegraph. Reinstated as Chief Signal Officer after Stanton's tenure, Myer was committed to restoring the Signal Corps, an institution he had created. For the biographical dimensions of Myer's keen interest in establishing a weather service, see Rebecca Robbins Raines, *Getting the Message Through: A Branch History of the U.S. Army Signal Corps* (Washington, DC: Center of Military History, U.S. Army, 1996); Scheips, "'Old Probabilities': A. J. Myer and the Signal Corps Weather Service"; Hawes, "The Signal Corps and Its Weather Service, 1870-1890."

War Department a map of the Signal Service's telegraphic and signal stations located along the coast—a potentially invaluable resource for issuing storm warnings.¹³

Support for military administration of the weather service was not unanimous. But a major selling point was that military oversight would bring military discipline, according to Congressman Paine, and weather observations would be conducted with “greatest promptness, regularity, and accuracy.”¹⁴ This vision of a highly rationalized military weather information system made its way into the popular press through articles that lauded the “military precision and promptness” of the Signal Service.¹⁵

The work of the national weather service officially began on November 1, 1870, when twenty-four Signal Service observers made synchronous weather observations at 7:35 a.m. (Washington time). Nearly a full year later, on October 23, 1871, the Signal Service's system of storm-warning flags was first implemented in eight ports on the Great Lakes and sixteen ports on the Atlantic coast.¹⁶ And, as economic historian Erik D. Craft has demonstrated, the Signal Service's storm-warning system translated into immediate and easily quantifiable value for Great Lakes shipping companies in the 1870s and 1880s who faced a greatly reduced risk of losing vessels to uncertain weather.¹⁷ But the economic and social value of weather forecasts and storm warnings in the countryside was neither immediately nor readily apparent, as I will illustrate in what follows.

The national weather service was constructed atop the postbellum telegraphic communications network, a sprawling web of poles and wires that linked Wiebe's famous

¹³ Hawes, “The Signal Corps and Its Weather Service, 1870-1890,” 69.

¹⁴ *Ibid.*; Hughes, *A Century of Weather Service*, 7. For the vehement opposition of meteorologist Cleveland Abbe to the military administration of the weather service, see Hawes, “The Signal Corps and its Weather Service, 1870-1890,” 70.

¹⁵ Maury, “The Telegraph and the Storm: The United States Signal Service,” 406.

¹⁶ Craft, “Private Weather Organizations and the Founding of the United States Weather Bureau,” 1068.

¹⁷ Erik D. Craft, “The Value of Weather Information Services for Nineteenth-Century Great Lakes Shipping,” *American Economic Review* 88, no. 5 (1998): 1059-76.

“island communities” together through instantaneous transmission of news and market information from far-flung corners of the nation. As historian James Fleming observes, the late-century telegraph network marked “an important shift of emphasis in meteorology from weather science to weather service.”¹⁸ And it is important to note that the federal government’s entire weather forecasting project in the late nineteenth century hinged on the simple fact that telegraphic messages traveled east faster than the weather. As a Harvard University geology professor put it in an *Atlantic Monthly* essay, Signal Service weather forecasting rested on

the simple principle that weather always has a history; that it means conditions that pass from one region to another by certain laws of movement and at a certain rate. This general fact was long ago recognized by meteorologists, but it was not until the telegraph enabled knowledge to outstrip the storms that it was possible to make any use of it in foretelling the weather.¹⁹

Western Union, which had a monopoly (and the nation’s first) on the telegraph industry after its 1866 merger with the United States Telegraph Company and the American Telegraph Company, provided the majority of the commercial telegraph lines used for transmission of Signal Service weather telegrams.²⁰ Signal Service weather observation stations originally did not exist anywhere off the commercial telegraph network, but in the early 1870s the Signal Service built its own telegraph lines in more remote coastal and mountainous areas, as well as in Indian Territory in the southwest and northwest.²¹

¹⁸ Fleming, *Meteorology in America*, 141.

¹⁹ N. S. Shaler, “The Future of Weather Foretelling,” *Atlantic Monthly*, November 1880, 645.

²⁰ For economic and business histories of telegraphy in the United States, see Thompson, *Wiring a Continent*; Richard B. Du Boff, “Business Demand and the Development of the Telegraph in the United States, 1844-1860,” *Business History Review* 54, no. 4 (1980): 459-79; Richard B. Du Boff, “The Telegraph in Nineteenth-Century America: Technology and Monopoly,” *Comparative Studies in Society and History* 26, no. 4 (1984): 571-86; Alexander James Field, “The Magnetic Telegraph, Price and Quantity Data, and the New Management of Capital,” *Journal of Economic History* 52, no. 2 (1992): 401-13.

²¹ James Rodger Fleming, “Storms, Strikes, and Surveillance: The U.S. Army Signal Office, 1861-1891,” *Historical Studies in the Physical and Biological Sciences* 30, no. 2 (2000): 319-20. After building its own telegraph lines in coastal and frontier regions in the 1870s, the Signal Corps controlled a maximum of about five thousand miles of lines in 1881. As commercial telegraph lines followed railroad companies west in the 1880s, the Signal Corps’ mileage steadily decreased to about one thousand miles in 1891. Raines, *Getting the Message Through*, 50-51.

The late-century telegraphic weather network was a mechanism for swiftly transmitting what geographer Mark Monmonier has termed “timely miniature snapshots of surface weather” to the central Signal Service office in Washington, D.C., where a team of clerks and the chief forecaster assembled numerous individual snapshots into the “probabilities”—a twenty-four-hour forecast that projected observed surface conditions forward in both space and time.²² The “Probabilities,” according to the Chief Signal Officer, “are announcements of the changes, considered from the study of the charts . . . as probably to happen within the twenty-four hours then next ensuing.”²³

Three times a day, Signal Service observers throughout the network used standardized instrumentation including thermometers and barometers to record synchronous observations of temperature, barometric pressure, wind speed and direction, and cloud conditions. Signal Service observers then translated their observations into a telegraphic cipher that ensured a cheaper and ostensibly more accurate transmission to Washington headquarters. Through an agreement with commercial telegraph companies, government weather telegrams took priority over other telegraphic traffic, thereby ensuring the swiftest possible transmission to Washington, where Signal Service clerks received a flurry of telegrams, decoded them, and then charted the data on weather maps. From these maps Signal Service forecasters constructed the weather “Synopsis and Probabilities” for transmission back to Signal Service stations, newspapers, Congress, and scientific institutions both at home and abroad (see Figure 3).²⁴

²² Mark Monmonier, *Air Apparent: How Meteorologists Learned to Map, Predict, and Dramatize the Weather* (Chicago: Chicago University Press, 1999), xi.

²³ Chief Signal-Officer, *Annual Report of the Chief Signal Officer to the Secretary of War for the Year 1874*, (Washington, DC: Government Printing Office, 1874), 90.

²⁴ This overview of the telegraphic weather forecasting process is drawn from Monmonier, *Air Apparent*, chap. 1; Edmund P. Willis and William H. Hooke, “Cleveland Abbe and American Meteorology, 1871-1901,” *Bulletin of the American Meteorological Society* 87, no. 3 (2006): 317.

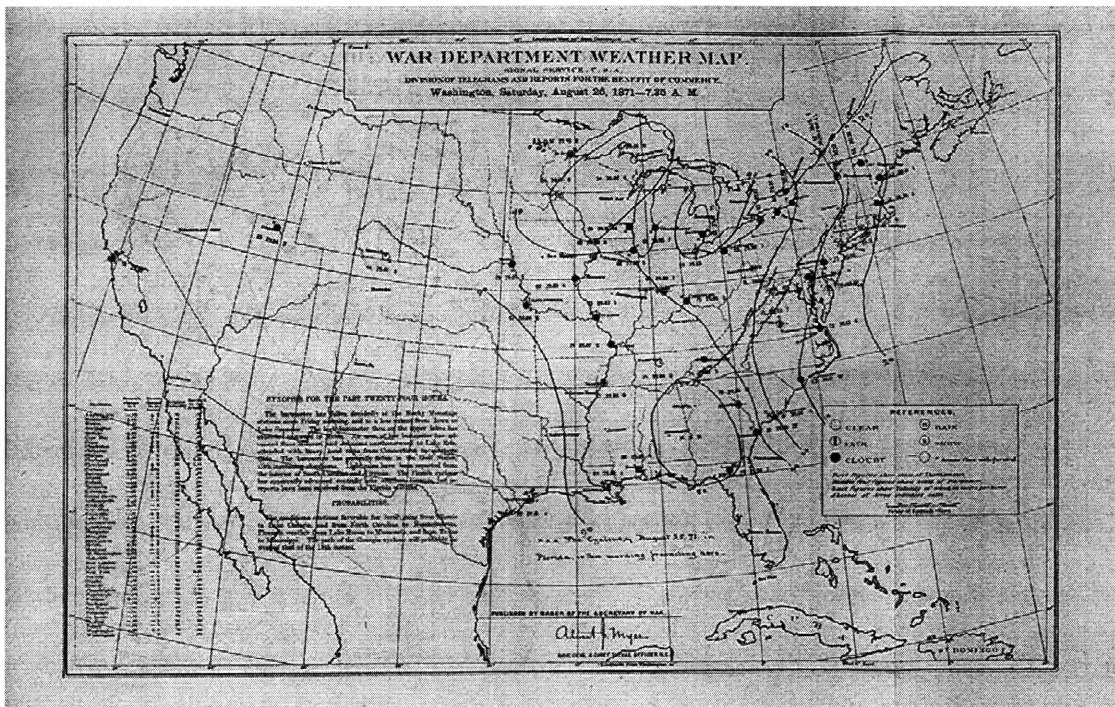


Figure 3: “War Department Weather Map, Washington, Saturday, August 26, 1871—7:35 A.M.”

The U.S. Army Signal Service’s daily weather map for August 26, 1871, which combines the Synopsis of the previous twenty four hours’ weather and the Probabilities for the next twenty-four hours’ weather, illustrates through the weather conditions labeled in various locations across the map—the reach of the fledgling weather telegraph network. “War Department Weather Map, Washington, Saturday, August 26, 1871—7:35 A.M.,” NOAA Central Library U.S. Daily Weather Maps Project, http://docs.lib.noaa.gov/rescue/dwm/data_rescue_daily_weather_maps.html (accessed June 15, 2007).

The overseer of the creation of the “Probabilities,” Chief Signal Officer Albert Myer, sat “at the center of an electric intelligence network spanning the nation,” as James Fleming describes it.²⁵ The Signal Service’s intelligence network, as Fleming reveals, functioned not only as a weather information network but also as an instrument of “domestic surveillance and social control.”²⁶ Throughout the 1870s, Signal Service weather observers not only filed

²⁵ Ibid., 320.

²⁶ Ibid., 316.

telegraph reports on temperature, precipitation, and impending risks like storms, frosts, and droughts, but also submitted to Washington their first-hand observations of labor strikes in cities and violence between Native Americans and whites on the frontier.²⁷

In addition to its secondary value to the U.S. Army as a surveillance mechanism and an instrument for disciplining masses of striking workers and resistant Native Americans, the weather service provided to a variety of consumers daily short-term forecasts and storm warnings right from its inception in the early 1870s through the late nineteenth and twentieth centuries. Commercial shipping companies and railroad corporations relied on short-term forecasts and storm warnings to adjust their deployment of ships, boats and freight trains in anticipation of fog or snow storms, and canal shippers used the “Probabilities” to avoid ice in a river junction, for example. Before the introduction of refrigerated railroad cars, shippers of perishable goods like beef, fruit, and vegetables relied on forecasts of extreme temperature changes in scheduling their shipments, and the merchants awaiting these shipments used weather forecasts to anticipate delays in delivery. And the economic value of weather service data was retrospective as well as predictive. The weather service’s tabulations of monthly climatological data (which were mailed rather than telegraphed) proved valuable throughout the late nineteenth century and the early twentieth century to railroad agents and lawyers who sought historical data to verify claims of weather-related financial loss and personal injury.²⁸

In the early 1870s, the Signal Service’s “electric intelligence network” did not provide weather service to farmers, nor did it claim to. Chief Signal Officer Albert Myer’s name for the

²⁷ Ibid., 320.

²⁸ Henry J. Cox, “Use of Weather Bureau Records in Court,” in *Yearbook of the United States Department of Agriculture, 1903* (Washington, DC: Government Printing Office, 1904), 303; Fleming, “Storms, Strikes, and Surveillance,” 320-21. For enthusiastic assessments of the Signal Service’s work in the 1870s, see “Our Storm Signal Service,” *New York Times*, Feb. 12, 1871; “The Weather Predictions,” *New York Times*, August 8, 1871; “Old Prob’s Predictions Verified,” *Boston Globe*, July 19, 1878; “The Weather Predictions,” *New York Times*, October 25, 1878.

newly created weather service was “The Division of Telegrams and Reports for the Benefit of Commerce.” In June 1872 a congressional appropriations act officially extended the reach of weather reports and storm signals “for the benefit of commerce and agriculture.”²⁹ But this name change did not resolve what some perceived as a fundamental incompatibility between military oversight of the weather service and the service of agricultural producers. An indignant letter to the editor of the *Washington Capital* in late 1871 expressed much skepticism regarding the easy transfer of naval meteorology to land, the former being “applicable only to commerce, being totally inapplicable to agriculture and floods.”³⁰

In addition to this kind of public skepticism, Myer faced more pressing problems of personnel and expertise in expanding the reach of the weather service: his subordinate Signal Service officers served in the weather service on detail and could be recalled by their former Army units as necessary, and neither he nor the men under his command had significant training in meteorological sciences.³¹ To compensate for the Army’s lack of meteorological expertise, Myer consulted with eminent meteorologists, hired two leading civilian meteorologists as his assistants, and instituted a meteorological education program as part of Signal Service instruction

²⁹ Hughes, *A Century of Weather Service*, 8, 21.

³⁰ A. Watson, letter to the editor, *The Capital*, December 14, 1871.

³¹ Meteorology was not a separate academic discipline in the late nineteenth century, and meteorologists of that period were either self-taught, educated in various university programs that were indirectly related to meteorology, or trained by the U.S. Army Signal Corps. The university courses offered on weather and climate were usually basic introductory courses within geology, geography, physics, or agriculture departments. No consensus existed on what kind of science meteorology was—applied or theoretical—and where its disciplinary home should be—natural history or physical science. Government scientists tended to define it as a theoretical endeavor in the physical sciences, whereas university programs linked it with one of two natural history traditions—zoology/botany and geology/geography. Most university training was in the context of voluntary student meteorological societies or college observatories, or in ad hoc training programs in geography and geology departments at Harvard University and Johns Hopkins University, as well as a graduate program run by Weather Bureau officials at what later became George Washington University. The most organized program of meteorological education was within the Signal Service, which dedicated a “study room” to research in 1880 and then opened a Signal Corps school at Ft. Myer, Virginia in 1881, a school considered the country’s “first postgraduate program in meteorology.” This account is drawn from James Rodger Fleming, introduction, and David D. Houghton, “Meteorology Education in the United States after 1945,” both in *Historical Essays on Meteorology, 1919-1995: The Diamond Anniversary History Volume of the American Meteorological Society*, edited by James Rodger Fleming (Boston: American Meteorological Society, 1996).

at Virginia's Fort Whipple. From its inception, the national weather service relied heavily on civilian expertise and personnel; this dependence became a liability in subsequent debates over military oversight of what many perceived to be essentially a civilian organization.³²

But calls for a weather service for agriculture drowned out the skeptics of the early 1870s. The Signal Service annual report of 1871 acknowledged steadily increasing demand for a rural weather service: "The very general expectation of agriculturalists that, in some way, the duties of the office in reference to the approach and force of storms would be made to contribute to their interests, has found frequent expression in letters and communications from societies and associations."³³ Although the Signal Service wanted to answer these frequent appeals from "the mass of intelligent farmers of the country," the annual report stated, the current configuration and funding of the military weather service prevented it from doing so. The report enumerated military efforts to serve rural populations: the Signal Service issued various circulars on the prospects of an agricultural weather service, it sent weather charts and bulletins to the USDA, and it telegraphed weather information not only to weather observation stations but also to newspaper outlets. More generally, the report declared, the weather service was not originally designed to serve rural areas, and in order to do so, the Signal Service would need to expand the coverage of its telegraph network by establishing many more stations that could both send weather observations and receive forecasts and storm warnings.³⁴ Farmers who petitioned the Signal Service in the early 1870s were primarily concerned with gaining access to the new weather information network, but the Signal Service remained focused primarily on improving data collection rather than solving problems of information distribution.

³² Bates and Fuller, *America's Weather Warriors*, 10-11; H. Helm Clayton, *The Transfer of the United States Weather Service to a Civil Bureau* (Boston: Alfred Mudge & Son, 1889).

³³ U.S. Department of War, *Annual Report of the Secretary of War* (Washington, DC: Government Printing Office, 1871), 272.

³⁴ *Ibid.*

The Signal Service's response to farmers who called for a rural weather service revealed a tension between its goal of extending the scope of its service and its expectation that farmers outside the reach of the weather telegraph network could become successful independent forecasters. In an 1871 circular titled "The Practical Use of Meteorological Reports and Weather Maps," the Signal Service acknowledged the importance of meteorological self-reliance in obtaining the most accurate local knowledge of weather conditions:

. . . a record of meteorological conditions elsewhere can be obtained in many places within so few hours after the observations are taken at the different stations, as to enable a student to make for himself many important deductions. The accuracy of these would be greatly assisted by local observations made at the same time as those of the observers of this division, with similar instruments, and by frequent local observations made during any time which there is especial interest or anxiety as to the probable weather. The navigator, the agriculturalist, or the student, can supplement in this way, by the readings of his own instruments and his local knowledge, the reports and information furnished by the United States, and is fitted to arrive at intelligent conclusions as to the data before him.³⁵

In order to help farmers arrive at these "intelligent conclusions" about the weather, the Signal Service sold blank weather maps, at a price of \$2.75 for one hundred blank maps, so that readers of newspaper weather bulletins could make their own visual representations that combined the federal government's published weather data with their own observations of local temperature, barometric pressure, wind direction, and precipitation, literally superimposing their local empirical knowledge on the broader contours of aggregated weather data based on hundreds of individual synchronous observations.³⁶

But the Signal Service did not expect farmers and others outside the reach of published bulletins and weather maps to remain self-sufficient weather forecasters for very long. In 1871, when the Carver (Minnesota) County Agricultural Society wrote to inquire about the prospects

³⁵ U.S. Signal Service, *War Department Circular: The Practical Use of Meteorological Reports and Weather-Maps* (Washington, DC: Government Printing Office, 1871), 8.

³⁶ *Ibid.*, 8-9.

of extending weather service to farmers, the Signal Service responded by acknowledging the lack of and confirming the need for such an agricultural weather service, and indicating its intent to expand gradually, after the construction of more telegraph lines and the recruitment and training of more weather observers.³⁷ In the early 1870s, the Signal Service did expect farmers to cultivate a certain self-sufficiency when it came to making accurate local predictions and charting the paths of storms and areas of low pressure on their own weather maps, but this expectation of weather self-reliance did not translate into more democratic participation in the creation of official Signal Service bulletins and forecasts. The Pike County (Georgia) Agricultural Society's weather committee offered to contribute its weather observations to the Signal Service reporting network in 1871, and one of Myer's assistants responded with a circular to a broader audience declaring that any data contributed by civilian observers would be "thankfully received," but that unofficial local observations would "not be of use for the immediate purposes of this division, except as made and telegraphed according to the plans adopted, (which cannot be understood and executed without special instruction)."³⁸ A year later, Chief Signal Officer Myer urged his own personnel to protect military control of weather information, ordering that all Signal Service observers "must confine themselves to the instructions issued from this office, and will not under any circumstances, publish or cause to be published forecasts or predictions of the weather not originated by this office."³⁹

In 1872, official government weather observations came from the fifty-five observation and reporting stations in the Signal Service network that made three regular observations per day, at 7:35 a.m., 4:35 p.m., and 11:35 p.m. (Washington time). Each observation post was

³⁷ U.S. Department of War, *Annual Report of the Secretary of War* (1871), 398.

³⁸ *Ibid.*, 399.

³⁹ U.S. Army Signal Service, *Annual Report of the Chief Signal Officer, 1872* (Washington, DC: Government Printing Office, 1873), 139, 142.

required to telegraph its report precisely on time to the Signal Service's Washington office, where the observations were aggregated and distributed in the form of weather bulletins, one each at 9 a.m., 6 p.m., and 1 a.m. (Washington time). Each regional bulletin included the following information:

Height of Barometer; Change since last report; Thermometer; Change in last 24 hours; Relative Humidity, in per cent; Direction of Wind; Velocity of Wind, in miles per hour; Pressure of Wind, in pounds per square foot; Force of Wind; Amount of Cloud; Rainfall since last report, in inches and hundredths, and State of Weather.⁴⁰

However, not all weather observation stations received daily bulletins in return for their submissions. Of the fifty-five stations equipped with telegraph instruments that had been "selected as of most immediate importance for meteorological purposes," forty were designated as stations that both sent weather observations to Washington and received bulletins for public display, and the other fifteen stations functioned as reporting stations only.⁴¹

Moreover, this distribution of weather bulletins was concentrated largely in urban areas. Major cities received large weather maps that were posted in public areas each morning, and midnight reports were published in cities' morning and afternoon newspapers. The broadest and most general nationwide coverage came from the Associated Press, which distributed a combined summary and forecast ("Synopses and Probabilities") at 1 a.m., 10 a.m., and 7 p.m. each day.⁴² Thus the distribution pattern and timing of weather bulletins in the early 1870s clearly favored commercial, not agricultural, populations.

Following the 1872 congressional resolution expanding the "Division of Telegrams and Reports for the Benefit of Commerce and Agriculture" came a series of changes within the

⁴⁰ U.S. Army Signal Service, *War Department Circular: The Practical Use of Meteorological Reports and Weather-Maps*, 5-6.

⁴¹ *Ibid.*, 6.

⁴² *Ibid.*, 7.

Signal Service that clearly defined agricultural regions as a new market for weather information. By the fall of 1872, nearly ninety agricultural societies and nearly forty boards of trade and chambers of commerce had established committees to serve as liaisons to the Signal Service.⁴³ To address the needs of farming regions, the Signal Service introduced or expanded several land-based services in the mid-1870s, including river level reports, frost warnings, and hurricane alerts.⁴⁴ To extend its reach beyond telegraph offices, the weather service introduced a system of flag signals to convey visually and publicly the weather forecasts and storm warnings that arrived in telegraphed reports. These signal flag systems used specific sequences of color-coded and geometric flags to indicate imminent changes in temperature and precipitation. Rural citizens who did not live near a Western Union office, newspaper office, or signal service observation station would decode combinations of geometric and colored flags in which red signified temperature and blue signified conditions. A red sun meant higher temperatures; a crescent meant lower temperatures; a star indicated no temperature change; a blue sun meant general precipitation; a blue crescent meant clear weather; a blue star meant local precipitation.⁴⁵ This flag signaling system was accompanied by more formal and more regular Signal Service publications: regular issues of *The Monthly Weather Review*, “The Weekly Weather Chronicle” (1872-1877) and *Farmers’ Bulletins* (1873-1881).⁴⁶

In 1873, the Signal Service introduced the daily *Farmers’ Bulletin*, which had a very different method of distribution from that of the daily local bulletins. Short daily reports, based on the Signal Service’s midnight forecast, were telegraphed to about twenty Signal Service printing stations in various cities, and then sent onward by morning express mail to over six

⁴³ Craft, “Private Weather Organizations and the Founding of the United States Weather Bureau,” 1068.

⁴⁴ Whitnah, *A History of the United States Weather Bureau*, 31.

⁴⁵ *Ibid.*, 28.

⁴⁶ Bates and Fuller, *America’s Weather Warriors, 1814-1985*; U.S. Department of War, *Annual Report of the Secretary of War* (Washington, DC: Government Printing Office, 1876).

thousand rural post offices, where each postmaster was required by order of the Postmaster General “to display [the bulletin] instantly in a frame, furnished . . . for that purpose” and to report the time that the Farmers’ Bulletin was received and posted each day. These twenty cities, according to the Chief Signal Officer, were “carefully chosen as in the midst of denser agricultural populations of the United States, and at points whence the facilities of communication would enable the surrounding districts to be most rapidly supplied.”⁴⁷ Exactly what these “facilities of communication” were, however, the Chief Signal Officer did not say. Farmers in the surrounding area who wanted to read the daily Farmers’ Bulletin would have to make a trip into the rural post office, or depend on a neighbor who might have gone into the post office that morning, or read weather signal flags if they were displayed by their post office, or wait for a train to pass by if a railroad weather flag system was used in that particular area.⁴⁸

The timing of the Farmers’ Bulletin distribution posed another problem for farmers. Rural post offices received the daily Farmers’ Bulletin no later than 2 p.m., but on average, by 11 a.m., according to the Signal Service, “averaging thus ten hours from the time the report has left the office of the Chief Signal-Officer until it has appeared bulletined in the midst of the farming populations, and accessible to them in the distant parts of the country.”⁴⁹ The Signal Service’s implicit assumption that the Farmers’ Bulletins were equally accessible to all farmers in a rural area did not recognize the need for a second tier in the information distribution system—word-of-mouth, signal flags, railroad signals—or acknowledge the fact that some farmers were even more distant from “the distant parts of the country” the weather service was trying to reach. And

⁴⁷ U.S. Department of War, *Annual Report of the Secretary of War* (1876), 110.

⁴⁸ It is difficult to determine just how far Farmers’ Bulletins extended into the countryside, however, since the Signal Service’s annual tabulation of urban distribution centers did not count separately the number of post-offices, railroad stations, and rural towns receiving bulletins. In 1876, the Signal Service claimed that its daily weather information reached one-third of all U.S. households but acknowledged the relative ease with which daily weather reports spread through cities.

⁴⁹ U.S. Department of War, *Annual Report of the Secretary of War* (1876), 110.

for the farmers who did have access to the Farmers' Bulletins, notification of early frost or impending heavy rains an hour before noon was simply too late to be of help.

The lack of widespread and timely distribution of Farmers' Bulletins was not the only problem facing "the distant parts of the country." The content of the Farmers' Bulletins was not significantly different from that of the regular daily local bulletins, which offered weather forecasts often too brief and too general to be of much local value. The Farmers' Bulletin consisted of two sections: a summary of the previous day's weather, followed by the next day's "probabilities" or forecast, for each of the following regions: South Atlantic and Gulf States, Upper Mississippi and Lower Missouri Valleys, Lake Region, New England, Middle Atlantic States, and Tennessee and Ohio Valleys. The Farmers' Bulletin for 1 a.m. on June 30, 1876, for example, included a national synopsis of seven sentences, followed by one sentence per region that forecast barometric readings, winds, temperature, clouds, and precipitation:

For Friday, in the South Atlantic and Gulf States, southwest winds will prevail, with rising barometer, stationary or lower temperatures, and cloudy weather.

For the Upper Mississippi and Lower Missouri Valleys, north winds, cooler, partly cloudy weather, possibly local rains, and stationary or falling barometer. . . .

The Farmers' Bulletin and the regular daily bulletin were virtually identical in their format and degree of specificity. Even though such general weather information and predictions had limited usefulness in a local context, national bulletins were the only available option in the 1870s, as a system of state or local weather services did not yet exist.

In addition to the regular publication of the Farmers' Bulletin, another solution to the problem of communicating weather information to remote rural areas was extending the communications infrastructure by setting up more observation stations and training more weather observers. A clear demand persisted for the extension of the weather service: between 1876 and

1877, the Office of the Chief Signal Officer received 294 separate appeals for the establishment of new weather reporting stations in 212 different locations.⁵⁰ Although the Signal Service did expand the geographical reach of its weather service during the 1870s, budgetary constraints did not allow it to come close to meeting the demand for new outposts.

Members of the Signal Service were well aware of the need for better local weather service; the Chief Signal Officer acknowledged the limitations of such broad national and regional forecasts in his annual report of 1877, the same year that Signal Service observers had provided valuable domestic intelligence when they telegraphed regular reports on railroad strikers to President Hayes.⁵¹ Myer defined the problem of “the distant parts of the country” in terms of insufficient observations, not inadequate information distribution. In 1877, Myer admitted that “in the present condition of science, and with a system of observation still too limited, premonitions, having for their scope a territory so great as that of the United States, cannot always be correct for every part of a district.”⁵²

At the same time that it published Farmers’ Bulletins and added observation stations to its telegraphic network, the Signal Service of the late 1870s remained optimistic that individual farmers could make accurate local forecasts for themselves. By 1877, the Signal Service expected the farmer using data and instrumentation to be just as effective a forecaster as the national weather service, as evidenced by Chief Signal Officer Albert Myer’s report that “any intelligent farmer, supplied with the necessary simple instrument . . . and furnished with data”

⁵⁰ U.S. Department of War, *Annual Report of the Secretary of War* (Washington, DC: Government Printing Office, 1877), 162-67.

⁵¹ For an account of the Signal Service’s role in the railroad strikes, see Fleming, “Storms, Strikes, and Surveillance,” 321-22; Raines, *Getting the Message Through*, 52-53. Fleming notes that Signal Service observers went undercover at strike rallies in 1877 and then telegraphed their reports to Chief Signal Officer Myer, who in turn sent the information to the White House. Fleming cites the role the Signal Service intelligence played in President Hayes’s plan “not to escalate the federal response” and thus help end the violence (322).

⁵² U.S. Department of War, *Annual Report of the Secretary of War* (1877), 125.

should be able to make an equally accurate forecast.⁵³ Myer envisioned a plan for “the necessary simple instrument,” and by 1879 he had secured a patent on a device called “The Weather Case, or Farmer’s Weather Indicator” (see Figure 4).⁵⁴ About 2.5 feet high, just over 1 foot wide, and 4.5 inches thick, this clock-like instrument contained an aneroid (or dry) barometer, a “Wind Disk” for measuring wind direction, a “Sunset Disk” for indicating a “fair” or “foul” sunset, and dry- and wet-bulb thermometers for comparing dry and moist weather conditions in order to predict temperature change. The June 1880 issue of the *American Agriculturalist* featured the following illustration of the Farmer’s Weather Indicator along with an article that acknowledged that “arrangements are being made so that farmers living beyond the reach of the daily weather reports may of themselves . . . make forecasts of the weather much more accurately than they could without the aid furnished by the Signal Service.”⁵⁵

⁵³ Ibid., 115.

⁵⁴ Scheips, “‘Old Probabilities’: A. J. Myer and the Signal Corps Weather Service,” 39.

⁵⁵ “The U.S. Signal Service and Farmers,” *American Agriculturalist*, June 1880, 231.

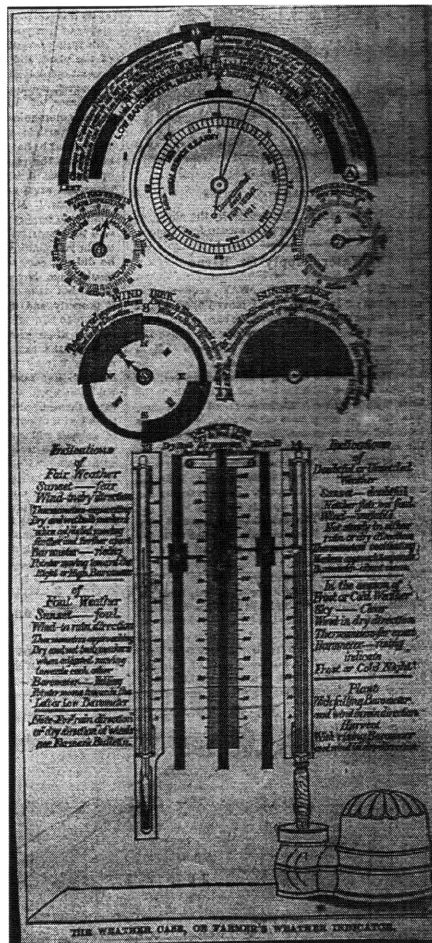


Figure 4: “The Weather Case, or Farmer’s Weather Indicator”

Chief Signal Officer Albert Myer’s plans for his “Weather Case, or Farmer’s Weather Indicator” were featured in the *American Agriculturalist*.

“The U.S. Signal Service and Farmers,” *American Agriculturalist*, June 1880, 231.

Myer originally planned to sell these weather instruments to farmers at cost, and the Signal Service promised to distribute the instruments, according to the *American Agriculturalist*, “to those large agricultural centers at a distance from large towns where the regular weather report is received daily, or twice a day, and where they will be of use in foretelling the weather for that locality.”⁵⁶ When the Farmer’s Weather Indicator was still not available by the fall of

⁵⁶ Ibid.

1880, readers of the *American Agriculturalist* wrote to inquire, but Myer's death that August had prevented the Farmer's Weather Case from going from patent to product.⁵⁷

Other methods of disseminating weather information to rural populations, including the use of cannon, railroad, and flag signals, were proposed and adopted sporadically during the 1870s and 1880s, to varying degrees of success. However, only the telegraphic weather reporting network was officially adopted and standardized by the Signal Service; hybrid technological solutions were combined in various local configurations. A combined telegraph and cannon system was proposed in the *Cultivator and Country Gentleman* in 1881, "intended as a universal system to give certain, instant and general warning of tornadoes, or rain storms, for the benefit of agriculture, especially during haying and harvest, and sudden floods on rapid rivers."⁵⁸ The problem of how to reach farmers beyond the reach of printed materials and telegraph stations could also be solved by using railroad cars to carry signal flags through rural areas, as suggested by a Farmers' Club in Tuckahoe, Virginia, in 1885:

. . . the farmers, the class to be most benefited by the weather signal service, in reality derive the least benefit therefrom; only those living in proximity to large centers can be informed of the changes likely to occur, or in the case of extraordinary changes those living near telegraph offices. Therefore I suggest that the railroads be interested in giving us the information by a system of flags carried on all trains, which would be but a small expense to them, and would increase their freight receipts.⁵⁹

The view of the Tuckahoe farmers comports with the general trend in which the Signal Service envisioned the improvement of the weather service in terms of increasing the number of incoming reports and extending telegraph lines, whereas local farmers' groups called for more widespread and effective distribution, often through combined technologies (telegraphy used in conjunction with railroad, signal flag, or cannon).

⁵⁷ "The Farmer's Weather Case," *American Agriculturalist*, September 1880, 337.

⁵⁸ "Signal Service Warnings," *Cultivator and Country Gentleman*, March 3, 1881, 143.

⁵⁹ "Weather Probabilities," *Cultivator and Country Gentleman*, December 24, 1885, 1038-39.

The Signal Service in the 1880s placed greater emphasis on its research program, long-range meteorological studies, and climatological data analysis—all of which contributed more to the professionalization of the weather service than to a more effective agricultural weather service. General William B. Hazen, Myer’s successor as Chief Signal Officer, brought in more civilian meteorological experts to execute numerous research projects, which included the systematic study of tornadoes and thunderstorms, an index of meteorology literature, and the required publication of Signal Service Professional Papers.⁶⁰ Hazen also created a separate research room within Signal Corps headquarters and provided professional development in the form of additional training for weather service personnel. And the Signal Service issued an official meteorology textbook in 1886 that was to be used not only for instruction at the Signal Service school at Ft. Myer, Virginia, but also for general reference by all observers in the weather service.⁶¹

The Signal Service’s primary effort to improve its agricultural weather service in the 1880s was the introduction of crop-specific weather reports. Louisiana sugar growers received special frost warnings in the 1880s, and special observations and reports were implemented for the cotton region between 1881 and 1883, followed by tobacco, corn, and wheat region reports. Special observations for cotton regions included the addition of a daily observation at 6 p.m. and the comparison of daily temperature highs and lows, as well as precipitation; corn and wheat regions had an additional observation time at 7 a.m. and a special report based on that observation. In addition, frost warnings were issued for fruit growers every time the temperature

⁶⁰ Samples from this series of Professional Papers include Paper No. 7, *Report on the Character of Six Hundred Tornadoes* (1882); Paper No. 9, *Charts and Tables Showing Geographical Distribution of Rainfall in the United States* (1883); and Paper No. 16, *Tornado Studies for 1884* (1885). These publications included aggregate data in chart form as well as narrative and map sections.

⁶¹ “The Work of the Signal-Office Under General Hazen,” *Science* 5, no. 111 (1885): 237-38; William Ferrel, *Recent Advances in Meteorology, Systematically Arranged in the Form of a Text-Book Designed for Use in the Signal Service School of Instruction at Fort Myer, Va., and Also for a Hand-Book in the Office of the Chief Signal Officer* (Washington, DC: Government Printing Office, 1886).

dropped below 40°F. However, these crop-specific weather observations and reports still had to reach growers in time in order to be useful.⁶²

Articles in agricultural journals and the popular press throughout the 1880s revealed modest appreciation for weather service improvements and indicated that the problem of communicating weather information to remote rural populations was far from solved. However, this is not to say that none of Hazen's initiatives were valued by farmers in the 1880s. The *Cultivator and Country Gentleman* cited local testimony as to the "great value" of frost warnings for Louisiana sugar growers in 1880 and found much to praise in the publication of three Professional Papers on tornadoes in 1885.⁶³ However, in 1883 the *Cultivator and Country Gentleman* noted complaints about insufficient frost warnings, which "le[d] many persons to question the benefits of this service to the cause of agriculture."⁶⁴ In addition to such criticisms of the timeliness and usefulness of weather service information were complaints about the continued lack of service to remote rural areas. The *Cultivator and Country Gentleman* reported one such complaint from the Tuckahoe (Virginia) Farmers' Club in 1885,⁶⁵ and a more positive article in the *Manufacturer and Builder* summarized the problem nicely:

At present the means of disseminating the official daily predictions of the service are limited. The official predictions are telegraphed to the stations along the lines of a number of the principal railways, and are there posted up for the information of the agricultural community, but in most of the States this information reaches only a limited proportion of the population.⁶⁶

And this "limited proportion of the population" excluded many farmers, as the *Manufacturer and Builder* noted in a subsequent article that lauded the potential benefits of an expanded weather

⁶² Hughes, *A Century of Weather Service*, 21-23; Whitnah, *A History of the United States Weather Bureau*, 33.

⁶³ "Recent Publications: Destructive Storms," *Cultivator and Country Gentleman*, September 17, 1885, 768; "The Signal Service," *Cultivator and Country Gentleman*, November 18, 1880, 748.

⁶⁴ "The Signal Service—Wheat," *Cultivator and Country Gentleman*, September 27, 1883, 777-78.

⁶⁵ "Weather Probabilities," *Cultivator and Country Gentleman*, December 24, 1885, 1038-39.

⁶⁶ "Extending the Usefulness of the Signal Service," *Manufacturer and Builder* 18, no. 11 (1886): 243.

service for the “people, especially the agricultural communities, which stand most in need of prompt and accurate weather warnings.”⁶⁷

Calls for a rural weather service reached the national stage at the same time that a debate over military control of the weather service intensified in the highest reaches of the federal government. Three different times in the early 1880s, both public and private officials—Secretary of War Robert Todd Lincoln in 1881, Senator John A. Logan in 1881, and a committee of the National Academy of Sciences in 1884—urged the transfer of the weather service from a military to a civilian agency.⁶⁸ From 1884 to 1886, Senator William B. Allison led a joint congressional committee of six that conducted an inquiry into the work of the federal government’s various scientific bureaus in general, and in the particular case of the Signal Service, whether its weather work was military or civilian in nature. Although U. S. Army General Philip Sheridan wanted the weather service out of the military and testified that the national weather service ““belongs to the business of the country,”” the Allison Commission’s recommendation—three members called for a gradual transfer of the weather service to a civilian bureau, and the other three for an immediate transfer—ultimately did not yield any sweeping changes in the organization of the national weather service.⁶⁹ Perhaps the loudest calls for the transfer of the weather service to the U.S. Department of Agriculture came from Massachusetts’ Blue Hill Observatory meteorologist Henry Helm Clayton, who led a movement “among the land-grant colleges, experiment stations, state boards of agriculture, and the Grange to capture the weather bureau.”⁷⁰

⁶⁷ “State Weather Services,” *Manufacturer and Builder* 19, no. 2 (1887): 27.

⁶⁸ James Rodger Fleming, “Storms, Strikes, and Surveillance,” 328-329.

⁶⁹ *New York Times*, January 23, 1886, p. 4. For an account of the administrative delays and legislative technicalities that doomed an 1887 bill recommending the transfer of the weather service to the U.S. Department of Agriculture, see Clayton, *The Transfer of the United States Weather Service to a Civil Bureau*, 5.

⁷⁰ Quotation in A. Hunter Dupree, *Science in the Federal Government: A History of Policies and Activities to 1940* (Cambridge, MA: Belknap Press, 1957), 192.

In January 1884 participants in the National Agricultural Congress petitioned Chief Signal Office Hazen for “the establishment of warning signals at every station and in every neighborhood throughout the entire country which can be reached by telegraph or signal, or otherwise by any means sufficiently prompt . . . [for] the extension of [weather service] benefits to every rural home however humble.”⁷¹ Hazen rejected this petition, insisting that the costs of reach every rural home were simply too great.⁷² With the printing of Hazen’s response in the *Cultivator and Country Gentleman* at the end of January 1884, the debate had reached a national audience, and agrarian organizations intensified their calls for improved and expanded weather service. At the 1886 National Grange meeting, the Committee on Agriculture approved the passage of the following resolution:

Whereas, It is of more importance to farmers than to any other class of citizens to know what changes are likely to occur in the weather; and,
Whereas, The farmers furnish three fourths of the exports of the country, and are the largest tax-payers in support of the General Government, there,
Resolved, That the Congress of the United States be respectfully requested to pass such laws as shall furnish the benefits of the Signal Service to the farmers of the country.⁷³

These were not unusual demands. The National Grange’s call for improved access to the Signal Service’s network of ostensibly modern and scientific weather information was entirely consistent with what historian Charles Postel has recently characterized as the business- and market-oriented politics of the Farmers’ Alliance and the Populist movement more broadly. Postel cites the Alliance’s ““general desire for information and almost universal effort at

⁷¹ Robert Beverly, A. J. McWhitter, and M. C. Ellzly, “Petition to General W. B. Hazen,” 1884, folder “Benefits to Agr. Of the Signal Service Weather Reports,” HR 48A-H2.2, Committee on Agriculture, RG 233, National Archives.

⁷² Hazen estimated the cost of transmitting additional telegrams to roughly one-third of the lines operated by Western Union at \$100,000, and he estimated a prohibitive \$75,000 for providing signal flags and \$75,000 for displaying them. W. B. Hazen, “Response to petition from National Agricultural Congress,” 22 January 1884, folder “Benefits to Agriculture of the Signal Service Weather Reports,” HR 48A-H2.2, Committee on Agriculture, RG 233, National Archives.

⁷³ *Journal of Proceedings: Twentieth Session of the National Grange of the Patrons of Husbandry, 1886* (Philadelphia: J. A. Wagenseller, 1886), 133.

research,” a desire clearly shared by the National Grange’s Committee on Agriculture and the countless other state agricultural societies and local farmers’ clubs that petitioned the federal government for access to its weather reporting network in the 1870s and 1880s.⁷⁴

In 1886, two bills proposing to extend the weather service to farmers were introduced in the House, and the hearings revealed strong support for signal flags over any other method of weather data transmission.⁷⁵ Congressman A. J. Caldwell, sponsor of one bill, declared signal flags the most effective method of communicating weather information to rural areas: “These [flag] signals can be seen for miles around each station. Every passer-by would be a newsboy, and the news would fly over the country upon the wings of the wind. As a means of communicating intelligence it is superior to any poster, bulletin or newspaper, both as to precision and speed.”⁷⁶ Moreover, Robert Beverly, the President of the National Agricultural Congress who had appealed to Chief Signal Officer Hazen two years earlier, testified to the inadequate use of trains to carry weather signal flags, noting that trains didn’t pass his own house (50 miles from Signal Service headquarters in Washington, D.C.) until 5 p.m. each day, and that even Farmers’ Bulletins arriving at 10 or 11 a.m. were too late to be useful for farmers who began work before sunrise. Beverly’s testimony suggested a broad and unified base of discontent with the current reach of the weather service: “There has not been an agricultural meeting of any society state or local in the last two years that has not called for this bill. Everyone has called for it.”⁷⁷

⁷⁴ Charles Postel, *The Populist Vision* (New York: Oxford University Press, 2007), 138.

⁷⁵ *For the Relief of Farmers of the United States by Extending to them the Benefits of the Signal Service*, HR 2318, 49th Cong., 1st sess.; *For Extending the Benefits of the Signal Service to Farmers of the United States*, HR 2506, 49th Cong., 1st sess.

⁷⁶ House Committee on Agriculture, *Extending the Benefits of the Signal Service to the Farmers of the United States: Hearings on H.R. 2318 and H.R. 2506*, 49th Cong., 1st sess., May 5, 1886, 3.

⁷⁷ *Ibid.*, 30.

In December of 1889, a U.S. Army Signal Corps Lieutenant named John Walsh wrote to Secretary of Agriculture Jeremiah Rusk to make the case that farmers in particular would benefit from the transfer of the military weather service to the civilian Department of Agriculture, predicting—as did many others—the increased efficacy and efficiency of a weather service “unhampered by military red tape.”⁷⁸ In 1890, the Secretary of the Michigan State Board of Agriculture complained that the military weather service displayed “an apparent lack of vital interest in serving the welfare of the people,” noting that farmers were especially disadvantaged by a lack of timely weather warnings.⁷⁹ But a small group of farmers in Michigan’s Lenawee County, a rural farming district, were not especially disadvantaged at all, since they had relied on their own local telegraph network throughout the 1880s.⁸⁰ The history of the Lenawee County farmers’ telegraph reveals an example of an information network that began locally and then expanded, in direct contrast with the national weather service, which began at the national level and then struggled to attain local accuracy and relevance, along with public credibility.

In June 1881, northwest of the town of Tecumseh, Michigan, which had a population of 2,111 in 1880, farmer Raymond J. W. Bowen strung a three-hundred-foot telegraph line between his house and the house of neighboring farmer Atwater Mangus. By December of the same year, the line extended half a mile west to include the house of Wesley B. Keyser, and by fall of 1882, the farmers’ telegraph line stretched three miles into the center of Tecumseh. In January 1883,

⁷⁸ John Walsh to Jeremiah Rusk, 28 December 1889, Records Relating To The Transfer Of Meteorological Functions From The War Department To The Agriculture Department, 1887, Records of the Weather Bureau, RG 27, National Archives II.

⁷⁹ Henry Reynolds, “Petition from Michigan State Board of Agriculture to transfer the weather service to the USDA,” 20 March 1890, folder “Transfer of the Weather Bureau to the Dept. of Agr.” HR 51A-H1.8, Committee on Agriculture, RG 233, National Archives.

⁸⁰ Generally speaking, Lenawee County (in southeastern Michigan, along the Ohio border) boasted numerous farmers’ clubs and agrarian organizations, including the Farmers’ Social Club (founded in the mid-1870s) and the Tecumseh Grange (founded in 1875). The agricultural production of Lenawee County in the 1880s, particularly around the town of Tecumseh, centered on flour, wool, dairying, and celery farming. Clara Waldron, *One Hundred Years of a Country Town: The Village of Tecumseh, Michigan, 1824-1924* (Tecumseh, MI: T. A. Riordan, 1974), 129, 143-45.

this private telegraph line became officially incorporated as the Commercial Telegraph Company, and it grew even more rapidly thereafter.⁸¹ By 1888, the company operated sixty-five miles of wire linking ninety telegraph instruments, two-thirds of which were located in farmhouses. The remaining third of the instruments were located, according to the *New York Times*, “in stores where farmers do their trading.”⁸² By 1890, the telegraph line that had originally connected two farmers three hundred feet apart “strictly as a social affair” had grown to include one hundred miles of wire connecting one hundred seventy instruments. Of these one hundred seventy instruments operating in 1890, ninety-five belonged to farmers in Tecumseh, Lake Ridge, Macon, Tipton, Newburg, and Holloway. The farmers’ informal telegraph line had become a telegraph network. The Commercial Telegraph Company, along with the neighboring Tecumseh and Macon Telegraph Company’s six miles of telegraph wire linking eleven more operators, “form[ed] a continuous line spreading in almost every direction from the village of Tecumseh.”⁸³

The cost of operating and maintaining the Commercial Telegraph Company’s lines was shared by its members, who purchased their own telegraph keys, erected their own telegraph poles (readily available at a nearby tamarack swamp), and strung their own wires in order to join the network. The telegraph’s wet cell batteries were clustered in specific houses along the line, with fifteen to twenty batteries in a single house. As the *New York Times* reported, “Every farmer is his own operator, battery man, and line repairer.”⁸⁴ A set of by-laws governed the operation of the Commercial Telegraph Company and the Tecumseh and Macon Telegraph

⁸¹ On the well-established rural practice of setting up local telephone cooperatives with barbed wire fences as wires, see Ronald R. Kline, *Consumers in the Country: Technology and Social Change in Rural America* (Baltimore: Johns Hopkins University Press, 2000), 26-40.

⁸² “A Unique Telegraph Line: The Electric Spark Utilized by Michigan Farmers,” *New York Times*, May 11, 1888.

⁸³ “Historian Reviews Telegraph,” *Tecumseh Herald*, January 20, 1966.

⁸⁴ *Ibid.*; quotation in “A Unique Telegraph Line,” *New York Times*, May 11, 1888.

Company, stipulating that only shareholders in the company, their family members, and railroad telegraphers could practice on the line or send free messages. Members of the Commercial Telegraph Company were asked to pay twenty cents to send a message of ten words or fewer, with no charge for the reply. Each word over ten incurred a cost of an additional two cents, but apparently fees were not often collected. Members engaged in purely social telegraphic exchanges were obligated to yield to business-related messages, and only “necessary business” was allowed on the wires between 10 p.m. and 5 a.m.⁸⁵

Farmers outside Tecumseh, located twenty-five miles southwest of Ann Arbor and over fifty miles west of Detroit, because of their distance from city and village telegraph offices, would not have had access to the nearly seven hundred thousand miles of Western Union telegraph wire that covered the country by the end of the 1880s.⁸⁶ By 1890, the Commercial Telegraph Company connected its ninety-five farmers to nineteen stores, ten doctors’ offices, seven railroad offices, six post offices, seven mechanics, and two grain dealers, in addition to a couple of teachers and a mysteriously-labeled “pleasure resort.”⁸⁷ Linked to the Commercial Telegraph Company in Tecumseh were druggists, a hardware store, a veterinarian, a painter, a banker, a miller, an undertaker, a jeweler, and a Western Union telegraph office.⁸⁸ The proprietor of the village store reportedly served as the area’s “telegraph operator, express agent, and postmaster.”⁸⁹

⁸⁵ “The Commercial Telegraph Co. By-Laws,” n.d.; “Tecumseh and Macon Telegraph Company By-Laws,” n.d., both in folder “Commercial Telegraph Company,” Clara Waldron Historical Room Archives, Tecumseh District Library, Tecumseh, MI.

⁸⁶ Waldron, *One Hundred Years, a Country Town*, 146; Field, “The Magnetic Telegraph, Price and Quantity Data, and the New Management of Capital,” 402.

⁸⁷ “Historian Reviews Telegraph,” *Tecumseh Herald*, January 20, 1966.

⁸⁸ “List of Instruments for Commercial Telegraph Company,” n.d., folder “Commercial Telegraph Company,” Clara Waldron Historical Room Archives.

⁸⁹ “The Farmers’ Telegraph,” *Chicago Daily Tribune*, November 16, 1892.

The Commercial Telegraph Company's communications network afforded Lenawee County farmers not only a connection to their local economy, but also access to the weather forecasts that were telegraphed daily from Signal Service headquarters in Washington, D.C. The daily "Probabilities" were then conveyed through a flag signaling system displayed at the local Western Union office.⁹⁰ The Lenawee County farmers who were members of the Commercial Telegraph Company could receive daily weather reports on their own telegraph instruments, and those not part of the network could read the signal flag in time to cover crops from unexpected frost, rearrange their chores to beat a coming storm, and so on. The *New York Times* saw the Michigan farmers' telegraph network as a promising solution to the problem of rural information delay and thus a potential model for replication:

From one of the railroad freight stations standard time is transmitted daily at 11 o'clock. When a piece of important news is received by the station officers, and at the newspaper office some event of great national or State importance, it is sent over the farmers' lines, and by this means the farmers, who are regarded as slow and behind the times, are often several hours ahead of the reportedly faster denizens of the cities, who are waiting for their afternoon papers to appear. There are two or three independent systems of these lines in operation in the county, arranged so that they can be connected with each other at intersecting points, and the whole system is being worked very cheaply and successfully.⁹¹

The "two or three independent systems" the *Times* mentioned were most likely set up with the help of Raymond J. W. Bowen, the creator of the original three-hundred-foot telegraph connection between his house and a neighbor's. Some time after the Commercial Telegraph Company was incorporated in 1883 with Bowen as the General Manager, he placed an advertisement offering Steiner Telegraph Keys for \$2.50 (see Figure 5). The caption beneath the

⁹⁰ "Historian Reviews Telegraph," *Tecumseh Herald*, January 20, 1966. This 1966 article on the Lenawee County farmers' telegraph network named the dissemination of weather information first—before social function—in its list of the Commercial Telegraph Company's various functions.

⁹¹ "A Unique Telegraph Line: The Electric Spark Utilized by Michigan Farmers," *New York Times*, May 11, 1888. In 1892 the *Engineering Magazine* echoed the sentiment that the Lenawee farmers' telegraph was a model to be emulated. "The Farmers' Telegraph," *Chicago Daily Tribune*, November 16, 1892.

illustration of the telegraph key indicates Bowen's role as a supplier and a consultant for other farmers wishing to start their own lines, and Bowen's obituary confirms that he was indeed well known for setting up other local telegraph networks around the state.⁹²

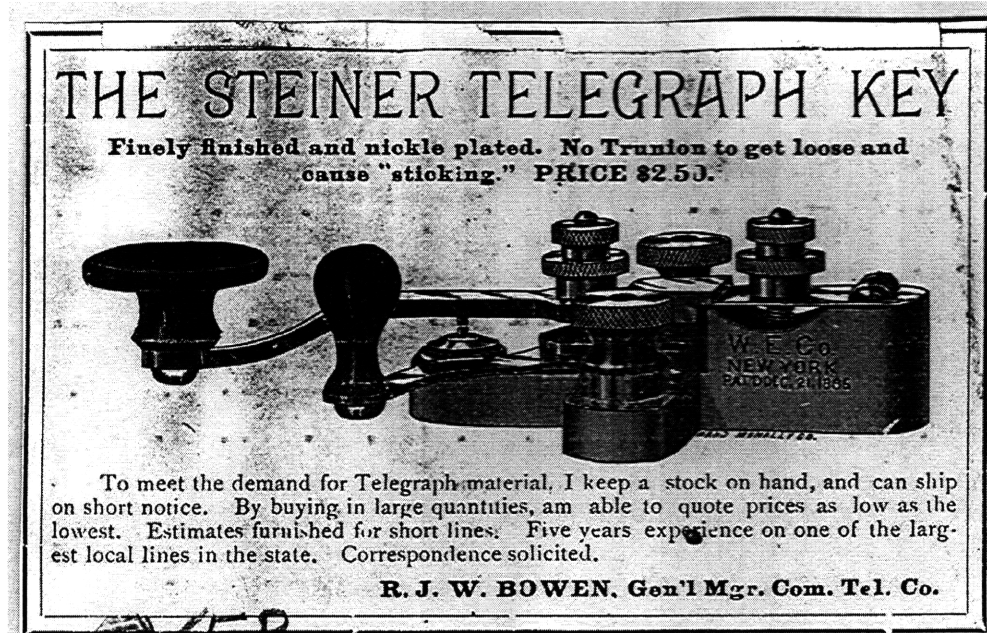


Figure 5: "The Steiner Telegraph Key."

This advertisement offers both a telegraph key for Lenawee County farmers to purchase and Raymond J. W. Bowen's expertise in constructing rural telegraph networks. Folder "Commercial Telegraph Company," Clara Waldron Historical Room Archives, Tecumseh District Library, Tecumseh, Michigan. Reproduced with permission of the Tecumseh District Library.

The Lenawee farmers' telegraph network was gradually eclipsed by the advent of telephony in Tecumseh. In 1895, Bell Telephone poles linked the towns of Tecumseh and Saline, and long-distance service was available between the town of Adrian and Detroit. The Commercial Telegraph Company was bought by the Tecumseh Telephone Company in 1898, at which time the telegraph wires were falling into disrepair. Raymond J. W. Bowen, the creator of

⁹² "The Steiner Telegraph Key," n.d., folder "Commercial Telegraph Company," Clara Waldron Historical Room Archives; "R. J. W. Bowen Dies Here on Wednesday," *Tecumseh Herald*, March 31, 1932.

the Lenawee farmers' first telegraph connection and General Manager of the Commercial Telegraph Company, went to work for the Tecumseh Telephone Company after the buyout.⁹³ The farmers' telegraph cooperative ceased its operation as telephone service became more widely available.⁹⁴ As a local resident lamented, the telephone afforded more privacy than the telegraph, since with the telephone, "it was now necessary to drop what you were doing and take down a receiver in order to listen in."⁹⁵

Public criticism of the Signal Service in the late nineteenth century, and especially in the 1880s, was not restricted to its agricultural weather service. Many critics, both in the popular press and in the meteorological community, alleged that the Signal Service operated a costly and inefficient weather service with a low rate of forecasting accuracy that would be much better managed by a civilian institution like the Department of Agriculture.⁹⁶ At the end of the 1880s, the *Boston Herald* questioned the Signal Service's ability to make sense of the "immense mass of data" collected throughout the decade, and the *Chicago Journal* complained that "the signal-service weather predictions are as faulty as ever. It is safer to bet on the election than to bet on the signal service."⁹⁷ Proponents of a civilian weather service eagerly awaited the arrival of the "new meteorology": a "free and rational" meteorological science administered by a decentralized agency.⁹⁸ At the end of the 1880s, T. C. Chamberlin, the president of the University of Wisconsin identified the problem and the likely solution in a letter to Senator John C. Spooner:

⁹³ Waldron, *One Hundred Years, a Country Town*, 147.

⁹⁴ On the introduction of rural telephony, see Kline, *Consumers in the Country*; Claude S. Fischer, *America Calling: A Social History of the Telephone to 1940* (Berkeley: University of California Press, 1992).

⁹⁵ Quoted in Waldron, *One Hundred Years, a Country Town*, 135.

⁹⁶ Clayton, *The Transfer of the United States Weather Service to a Civil Bureau*, 11-29.

⁹⁷ Quoted in Clayton, *The Transfer of the United States Weather Service to a Civil Bureau*, 25, 28.

⁹⁸ Thomas J. Brown, "The Present Crisis in Meteorology; and the Opportunity and Duty of the Agricultural Interest at this Juncture," undated pamphlet, Records Relating to the Transfer Of Meteorological Functions From the War Department to the Agriculture Department, 1887, RG 27, National Archives II.

“It is obvious to all . . . that [the weather service] needs reorganization . . . if it is to . . . become in the highest degree subservient to the interests of agriculture. It must be rendered more exact, and be made more specifically applicable to the peculiarities of the different regions and to the needs of different agricultural industries. In other words, there must be a higher degree of local application.”⁹⁹

The problem articulated by the University of Wisconsin president—along with the members of the Farmers’ Institute who asked him to appeal to members of Congress—was the problem of translating weather information from the national to the local level.

The most effective solution to Spooner’s problem of forecasting in a local context emerged from the institutional confluence of state weather agencies, agricultural colleges, and experiment stations that had gained significant momentum by the late 1880s. In 1881 General Hazen had approved a state weather service project envisioned by the Signal Service’s premier meteorologist, Cleveland Abbe, in the following states: Illinois, Indiana, Kansas, Mississippi, Missouri, Nebraska, New Jersey, and Ohio. These states joined Iowa and Nevada, which had created state weather agencies in 1878 and 1881, respectively. The system of state weather agencies grew to include over two thousand volunteer observers who worked to correlate weather data with local agricultural production.¹⁰⁰

State weather agencies garnered much public support in the late 1880s. In 1887 the *Manufacturer and Builder* hailed the state weather agency as the way to achieve “a more comprehensive and thorough system of disseminating the [weather] information” in order “to place within reach of every farming community” the daily forecasts the Signal Service sent from

⁹⁹ Quotation in Clayton, *The Transfer of the United States Weather Service to a Civil Bureau*, 16.

¹⁰⁰ Whitnah, *A History of the United States Weather Bureau*, 11-12, 32-33; Hughes, *A Century of Weather Service*, 27. State weather agencies had cropped up sporadically between the 1840s and the 1880s, but no sustained state system survived without Signal Service support and national oversight. The most successful early state weather agency was in New York, where observers, located mostly in academies, had thirty stations networked in a system for the Board of Regents from 1825 to the early 1850s. South Carolina attempted unsuccessfully to launch a state weather bureau in the early 1840s, the Pennsylvania state legislature approved \$4,000 for state stations that paled in comparison to New York’s, and in Massachusetts, twelve stations were established by 1850 but did not prove successful in the long term.

Washington.¹⁰¹ Two years later, a *Science* article on “The Task of State Weather Services” noted the importance of local storm and frost warnings for rural farmers and deemed the state weather agency the primary vehicle for such warnings.¹⁰²

Agricultural colleges were a crucial part of this institutional constellation of local weather organizations, as state colleges and university agriculture departments received monthly data from state weather agencies before it was forwarded to the Signal Service’s Washington headquarters.¹⁰³ As the president of one state agricultural college noted in the late 1880s, “the agricultural colleges and the newly formed or forming experiment stations constitute a *cadre* organization upon which the new system [the civilian weather service within the Department of Agriculture] can be soon developed and perfected at a very moderate cost.” The president went on to note that several state agricultural colleges—in Alabama, Ohio, Tennessee, Wisconsin, Massachusetts, and New York—had already established their own weather bureaus to serve counties or the entire state.¹⁰⁴

While state weather services and agricultural colleges and experiment stations were rapidly building a more local weather reporting network that represented a clear departure from the military’s centralized weather service, resistance to the growing momentum for a civilian weather service in the late 1880s came from Chief Signal Officer Adolphus W. Greely and his Signal Corps allies. Greely and his supporters made numerous arguments for keeping the weather service under military control: military discipline was necessary to coordinate prompt and accurate weather observations; a civilian weather service would be far more expensive; non-military personnel would be unwilling to serve as observers in dangerous frontier territories;

¹⁰¹ “Auxiliary Weather Bureaux in the States,” *Manufacturer and Builder* 19, no. 6 (1887): 123.

¹⁰² “The Task of State Weather Services,” *Science* 13, no. 310 (1889): 20.

¹⁰³ Whitnah, *A History of the United States Weather Bureau*, 33; Dupree, *Science in the Federal Government*, 167.

¹⁰⁴ Clayton, *The Transfer of the United States Weather Service to a Civil Bureau*, 21-22.

military-trained weather observers would be immediately useful in time of war; and a civilian weather bureau would quickly become stocked with political appointees.¹⁰⁵ But such protests by Greely, whose organization had been derided as “the highly ornamental, highly expensive, and all but useless Drum-Major of Meteorology,” proved fruitless.¹⁰⁶ Sufficient momentum for the transfer of the weather service to a civilian agency had been generated by the numerous bills and Congressional hearings on the subject throughout the decade, by the tattered public image of the Signal Service itself in the 1880s (thanks to an embezzlement scandal in 1881 that cost the Signal Service dearly in the following year’s appropriations), and by the admission of Chief Signal Officer Greely himself that the service was beset by widespread inefficiencies.

Congress finally approved the official transfer of the weather service to the U.S. Department of Agriculture in 1890, and the transfer formally took place on July 1, 1891.¹⁰⁷ After the transfer, U.S. Army Signal Corps observers no longer telegraphed their daily weather observations to Washington, D.C. The Signal Corps did, however, lend its signaling expertise during the labor violence that rocked the Carnegie steel town of Homestead, Pennsylvania in 1892 and the riots in the wake of Chicago’s Pullman strike in 1894. During the riots that followed the Homestead strike, the Signal Corps consulted with National Guardsmen on establishing signaling networks using a combination of telegraph, heliographs, and lanterns, and during the violent aftermath of the Pullman strike, the Signal Corps established a network of visual signals, telegraph, and telephone communication to relay details of the ensuing riots.¹⁰⁸

¹⁰⁵ Clayton, *The Transfer of the United States Weather Service to a Civil Bureau*, 6-7.

¹⁰⁶ Thomas J. Brown, “The Present Crisis in Meteorology; and the Opportunity and Duty of the Agricultural Interest at this Juncture,” undated pamphlet, Records Relating to the Transfer Of Meteorological Functions From the War Department to the Agriculture Department, 1887, RG 27, National Archives II.

¹⁰⁷ Fleming, “Storms, Strikes, and Surveillance,” 331.

¹⁰⁸ *Ibid.*

The Panic of 1893 and the subsequent economic depression that was the backdrop for such violent labor-capital conflict in Chicago and elsewhere in 1894 imposed fiscal constraints on the Weather Bureau during its first years as a civilian agency. In the face of an economic downturn, Secretary of Agriculture Sterling Morton instituted a series of budget-cutting measures that included a reduction in the number of telegraphed forecasts as well as a curtailing of more theoretical work and meteorological research in favor of a focus on improving the accuracy of short-term forecasting.¹⁰⁹ By 1894, forty expert forecasters were on staff at the Weather Bureau as compared to four in 1891, and those forecasters faced a more competitive system for promotion. Weather Bureau Chief Mark W. Harrington noted that the civilian forecasters would have “more freedom in the verbal expression of their forecasts” and not be constrained by the “hard and fast lines” of standardized military weather reports. As a result, he noted, USDA forecasters would “express their forecasts for the benefit of the public rather than for the benefit of their official records.”¹¹⁰

Despite the civilian reconstitution of the national weather service, the Weather Bureau’s forecasting reforms, and the proliferation of state weather agencies, the same basic problem persisted well into the 1890s: how to communicate useful and timely weather information to farmers living outside the reach of telegraph lines and printed materials. The Weather Bureau’s twenty-four- to thirty-six-hour forecasts circulated through a variety of media in the mid-1890s, primarily through the daily newspapers and telegraphed messages from the Weather Bureau’s Washington, Chicago, San Francisco, and Portland district centers to substations and then on to hundreds of towns nationwide. Telephone companies in major cities relayed the daily forecast to their subscribers and displayed the forecast in their own offices as well. Daily Weather Bureau

¹⁰⁹ Whitnah, *A History of the United States Weather Bureau*, 65-66.

¹¹⁰ Mark W. Harrington, “What Meteorology is Doing for the Farmer,” in *Yearbook of the United States Department of Agriculture* (Washington, DC: Government Printing Office, 1894), 117-18.

maps—over three million produced annually—also printed the daily forecast. But the problem of reaching the “distant parts of the country” persisted. In 1894 Weather Bureau Chief Harrington, a University of Michigan meteorologist who had grown up on a farm in Illinois, acknowledged that “[t]he problem of reaching, effectively and in time, the more sparsely settled districts is still unsolved. For instance, how can we tell the isolated overseers of cattle ranges in Wyoming of the approach of a blizzard? A scheme for the use of rockets has been suggested, but it does not fully meet the requirements.”¹¹¹

The solution to Harrington’s distribution problem ultimately came at the turn of the century, when rural free delivery and the expansion of rural telephony carried forecasts to “the distant parts of the country.” Calls for rural free delivery echoed throughout the late nineteenth century, from the National Grange in the 1870s, Postmaster General and department store magnate John Wanamaker in 1889, and the Populist party in 1892 and 1896.¹¹² Georgia Congressman and Populist leader Tom Watson worked tirelessly for rural free delivery, deeming an 1893 bill that appropriated \$10,000 for such an endeavor ““the first purely and distinctively Populist measure.””¹¹³ The U.S. Post Office implemented rural free delivery on an experimental basis for 59 rural delivery routes in 1896 and 469 more over the next two years. Rural free delivery was permanently established in 1902, bringing periodicals, mail-order catalogues, farm journals, crop reports, along with personal correspondence to the doors of rural Americans nationwide.¹¹⁴ The Weather Bureau mailed its so-called “forecast cards” to farming

¹¹¹ Ibid., 118.

¹¹² Samuel Kernell and Michael P. McDonald, “Congress and America’s Political Development: The Transformation of the Post Office from Patronage to Service,” *American Journal of Political Science* 43, no. 3 (1999): 796-97.

¹¹³ *People’s Party Paper*, November 24, 1893, quoted in Postel, *The Populist Vision*, 145.

¹¹⁴ “What the Government is Doing to Aid the Farmer,” *Chicago Daily Tribune*, July 18, 1909.

communities through rural free delivery.¹¹⁵ “Forecast cards” were produced in Weather Bureau offices across the nation, where local forecast officials and observers used rubber type sets to compose the daily forecast and then stamp it onto blank postcards, at the rate of up to eight hundred cards in fifteen minutes.¹¹⁶

By 1902, when rural free delivery became a permanent fixture of the rural landscape, many Midwestern and Great Plains farmers subscribed to a telephone news bureau, a service whereby an operator would call every night, usually around 7 p.m., to read a summary of news, weather, and market reports to all the farm households sharing a single line.¹¹⁷ Two years later, the Weather Bureau dramatically reduced the number of weather forecasts it sent through rural free delivery, opting instead to rely on rural telephone lines. Over 100,000 Midwestern farms received telephone weather forecasts in 1902, and in 1904, some 50,000 Ohioans received the morning weather forecast by telephone, mere minutes after it had been released by the Weather Bureau’s district forecasting center.¹¹⁸ In that year, the USDA declared that “[t]he rural telephone lines are the best and most economical means of distributing weather information. The forecasts are quickly disseminated, covering a large territory with little or no expense to the Government.”¹¹⁹ By the end of the 1905 fiscal year, the Weather Bureau reported over one million subscribers to its daily telephone forecasts.¹²⁰ As the *Southern Farmer* noted

¹¹⁵ Kernell and McDonald, “Congress and America’s Political Development: The Transformation of the Post Office from Patronage to Service,” 796-97; Kline, *Consumers in the Country*, 24, 43.

¹¹⁶ E. B. Calvert, “How the Weather Bureau Disseminates Forecasts and Warnings,” in *Report of the Chief of the Weather Bureau, 1895-96* (Washington, DC: Government Printing Office, 1896), xxii.

¹¹⁷ Kline, *Consumers in the Country*, 29, 42-43.

¹¹⁸ USDA, *Report of the Secretary of Agriculture, 1904* (Washington, DC: Government Printing Office, 1904), 15. States with telephoned weather reports in 1904 included Iowa, Ohio, Wisconsin, Oklahoma, Illinois, Missouri, Indiana, Arkansas, Massachusetts, New York, and Nebraska.

¹¹⁹ USDA, *Yearbook of the United States Department of Agriculture 1904* (Washington, DC: Government Printing Office, 1905), 16.

¹²⁰ USDA, *Report of the Secretary of Agriculture, 1906* (Washington, DC: Government Printing Office, 1906), 21. On the proliferation of telephone weather forecasts in rural communities and their enthusiastic reception, see “Farmers to Get Daily Bulletins,” *Atlanta Constitution*, February 16, 1906; “Weather Over Telephone,” *Washington*

approvingly, “Far removed from the daily paper, with its weather forecasts, the farmer can thus keep informed by phone of probabilities, and thus escape loss in crop time.”¹²¹ By 1909, the *Chicago Daily Tribune* considered “[t]elephones . . . handmaidens to the weather bureau.”¹²²

Although the Weather Bureau and the *Tribune* agreed, as did many of their contemporary commentators, that rural telephone lines had indeed solved the problem of distributing weather forecasts to “the distant parts of the country,” access to forecasts and accuracy of forecasts posed two separate problems for rural areas. To be sure, the decentralized state weather service system and its efforts to produce more useful local forecasts for agricultural regions drew approbation from some quarters, but the Weather Bureau still had a problem with weather forecasting in rural America in the late 1890s and the early years of the twentieth century. The problem, as defined by both the Weather Bureau and its most persistent critics, was no longer access to weather forecasts but rather the relative accuracy and usefulness of forecasts, and the public perception thereof.

In 1909 Iowa writer Emerson Hough crystallized this problem when he published an excoriating critique of the Weather Bureau that took aim at he what deemed an inefficient and bloated bureaucracy, “one of the most beautifully bureaucratic bureaus known in this land of the free,” “a weather trust” that failed, in his estimation, to adequately serve its public with timely, accurate, and locally relevant forecasts.¹²³ At the core of Hough’s lengthy critique—which was widely read and drew a rejoinder from the *New York Times*—was a question he invoked

Post, February 16, 1906; “Clearing and Colder Today,” *Atlanta Constitution*, March 8, 1906; “Farmers Given Weather News,” *Atlanta Constitution*, June 25, 1906.

¹²¹ “The Telephone on Farms,” *Washington Post*, November 28, 1903.

¹²² “Telephones Aids to Weather Bureau,” *Chicago Daily Tribune*, November 21, 1909.

¹²³ Emerson Hough, “Does the Weather Bureau Make Good?” *Everybody’s Magazine*, May 1909, 610. Hough (1857-1923), an Iowa novelist and journalist best known for his fiction of the American west, published over thirty-four books and hundreds of articles and short stories, many of which centered on frontier ideals, outdoorsman’s adventures, and conservationist ethics. Carole M. Johnson, “Emerson Hough’s American West,” *Books at Iowa* 21 (November 1974): 26-42.

repeatedly: “Now what the farmer *get* when he gets a forecast?”¹²⁴ After marching his readers through a litany of what he considered the Weather Bureau’s shortcomings—including its cost, its lack of theoretical innovations, its avalanche of ponderous publications—Hough ultimately arrived at this conclusion for his imagined farmer John Smith of Sleepy Eye, Minnesota:

It is good advice to John Smith of Sleepy Eye, to trust in the Weather Bureau, but to keep a rheumatic toe. He can further serve himself by observation of the stripes on caterpillars, the spots on the breastbone of a goose, by observations on the breastbone of a goose, by observations of the phenomena shown by domestic animals, wild fishes, tame pigeons, observations of the silk on the corn, of the fur on the muskrat.¹²⁵

Hough’s recommendation, as he framed it, was an epistemological compromise between competing systems of knowledge production: the weather forecasts produced by professional scientific meteorologists in a government bureaucracy and the vernacular weather knowledge based on the experience and empirical observation of farmers, rural Americans, and other self-taught amateur weather forecasters. In the next chapter I will explore this epistemological contest and compromise in the context of long-range weather forecasting in the late nineteenth and early twentieth centuries, at the very moment when the Weather Bureau set out to redefine modern weather forecasting as a scientific enterprise and vernacular weather prophecy as anti-modern quackery.

¹²⁴ Hough, “Does the Weather Bureau Make Good?” 613; “The Weather Forecasts,” *New York Times*, May 16, 1909.

¹²⁵ Hough, “Does the Weather Bureau Make Good?” 620.

Chapter 4: Weather Prophets

As the national weather service struggled to solve the problem of extending the reach of its weather forecasts into the countryside in the late nineteenth century, it also faced an epistemological problem posed by the traditional practices of predicting the weather that had long existed in rural America. Well before the U.S. Army Signal Service's weather telegraph network brought "probabilities" into daily life, farmers, local experts in weather folklore, and self-taught meteorologists relied upon a diverse set of cultural practices in order to forecast the weather a day, a week, and even a year ahead. As the U.S. Weather Bureau worked to establish its reputation as a newly founded civilian organization within the U.S. Department of Agriculture in 1891, it focused increasingly on the persistent popular appeal of such practices and sought to counter what it deemed the threat of vernacular long-range weather prophets to the Bureau's scientific reputation.

As historian of science Katharine Anderson has noted in her study of Victorian meteorology, weather prediction was "[p]oised between divination, opinion, and calculation," and "weather forecasts were both experiment and prophecy."¹ In this chapter I focus on the Weather Bureau's late-century endeavors to separate calculation from divination, experiment from prophecy. The roles of forecaster and prophet conjured up opposite images in the American popular imagination by the mid-twentieth century, but in the late nineteenth century, they were synonymous. All Gilded Age weather forecasters were known as "weather prophets," a term that referred to the professional government employees of the Weather Bureau as well as the self-taught private prognosticators who employed vernacular forecasting traditions based on

¹ Katharine Anderson, *Predicting the Weather: Victorians and the Science of Meteorology* (Chicago: University of Chicago Press, 2005), 15, 19.

natural weather signs. This chapter illuminates the turn-of-the-century moment when the meanings of *forecaster* and *prophet* diverged, and more precisely, the way in which the Weather Bureau redefined professional scientific forecasting as the antithesis of vernacular prophecy.

In her analysis of weather prophecy in early Victorian meteorology and its shaping of the subsequent government administration of weather science in Britain, historian Katharine Anderson focuses on the public construction of individual and institutional scientific reputation, arguing that categories of “respectability” and “propriety” are more useful for understanding the production of scientific knowledge in the public sphere than distinctions between genuine science and pseudoscience, between popular and institutional contexts for scientific work.² Like Anderson, I am concerned with the public reception of meteorology and what she terms the nineteenth-century “public theatre of science,” but I focus explicitly on the Weather Bureau’s construction of a rhetorical boundary between science and quackery as a tool for building its institutional reputation in the late nineteenth and early twentieth centuries.³

At the turn of the twentieth century, Weather Bureau Chief Willis Moore chose long-range weather prediction as the context in which to reinvent modern forecasting, and long-range weather prophets became his vehicle for distancing forecasting from prophecy, science from superstition and quackery, professional meteorological expertise from lived experience and observation, and ultimately, ideals of modern scientific progress from what he deemed ignorant reliance on weather folklore or false forecasts. But as it reinvented weather forecasting as a

² Katharine Anderson, “The Weather Prophets: Science and Reputation in Victorian Meteorology,” *History of Science* 37 (1999): 180.

³ *Ibid.*, 203. Several recent historical and anthropological studies have shifted away from traditional institutional histories of meteorological science and toward cultural histories of the public experience and understanding of weather in everyday life. See William B. Meyer, *Americans and Their Weather* (New York: Oxford University Press, 2000); Sarah Strauss and Ben Orlove, eds., *Weather, Climate, Culture* (New York: Berg, 2003); Gary Alan Fine, *Authors of the Storm: Meteorologists and the Culture of Prediction* (Chicago: University of Chicago Press, 2007); Bernard Mergen, *Weather Matters: An American Cultural History Since 1900* (Lawrence: University Press of Kansas, 2008).

modern scientific practice, the Bureau actually embraced the very uncertainty it had condemned as the chief liability of weather prophecy: following its turn-of-the-century public relations campaign against long-range weather forecasting, the Weather Bureau began to issue its own weekly forecasts in 1908, thereby rationalizing the meteorological uncertainty of long-term prediction into government meteorological practice. As I will argue in this chapter, the Weather Bureau in the late nineteenth century viewed the uncertainty of long-range forecasting as a liability in a science of accuracy and a hallmark of amateur meteorology, vernacular weather wisdom, and at its worst, quackery. By the close of the first decade of the twentieth century, the Bureau recognized uncertainty as an acceptable—indeed, unavoidable—characteristic of long-range forecasting, a fundamental aspect of a science of probability.

At 7 a.m. on Sunday, March 11, 1888, U.S. Army Chief Signal Officer Adolphus W. Greely issued the national weather service's daily weather map with the following twenty-four-hour forecast: "Fresh to brisk easterly winds, with rain, will prevail to-night, followed on Monday by colder brisk westerly winds and fair weather throughout the Atlantic states ..."⁴ But the following morning brought a powerful blizzard that buried the east coast in two to four feet of snow, turning New York City into a "wilderness," according to the *Boston Globe*. Winds reaching seventy miles per hour pushed snow into drifts that towered twenty to thirty-five feet high in Hartford and New York, respectively.

Virtually all of the trains in New Jersey, Connecticut, New York, and Massachusetts sat immobilized, and in New York City, most transit lines were unusable by 7 a.m. New York's businesses and its stock exchange shut down, as did schools and virtually all public and private establishments. High winds and heavy ice pulled down most telegraph lines along the east coast,

⁴ U.S. Army Signal Service, "Daily Weather Map, March 12, 1888, 7 a.m.," NOAA Central Library U.S. Daily Weather Maps Project, http://docs.lib.noaa.gov/rescue/dwm/data_rescue_daily_weather_maps.html (accessed June 15, 2007).

plunging Hartford, Boston, and Providence into unfamiliar isolation.⁵ As the *New York Times* remarked, “It is hard to believe in this last quarter of the nineteenth century that for even one day New York could be so completely isolated from the rest of the world as if Manhattan Island was in the middle of the South Sea.”⁶ As New York dug itself out in the following days, reports surfaced of corpses huddled in doorways. In all, over three hundred storm-related deaths were reported on land and almost one hundred at sea. The storm ended on March 14, 1888, but its legacy as the most severe blizzard in American history has lasted to the present day.⁷

Chief Signal Officer Greely published an essay that same year in *National Geographic* that offered a detailed meteorological analysis of how and why the storm’s course, intensity, and precipitation had defied accurate prediction. The storm was anything but typical, Greely argued, and elsewhere he classified the blizzard as part of “a somewhat unusual class of storm on a very grand scale.”⁸ Although the weather service had issued general warnings, the public was largely unprepared for the intensity of the storm. On Sunday, Boston weather service officials displayed cautionary signals, but, as the *Boston Globe* put it, “the thought of the morrow brought no suggestion of such a storm.”⁹ A *New York Times* editorial in November 1888 assigned specific blame to the weather service for allowing the storm to arrive “absolutely unheralded,” arguing that “[t]he Weather Bureau predictions led the people of New-York to expect ‘clearing weather’ on the 12th of March last, the day of the memorable blizzard.” The editorial concluded that the

⁵ “Crushed Under the Snow,” *New York Times*, March 14, 1888; “Cut Off,” *Boston Daily Globe*, March 13, 1888; A. W. Greely, “Great Storm off the Atlantic Coast of the United States, March 11-14,” *National Geographic* 1, no. 1 (1888): 38-39; “Blasted,” *Boston Daily Globe*, March 14, 1888; “In a Blizzard’s Grasp,” *New York Times*, March 13, 1888.

⁶ “In a Blizzard’s Grasp,” *New York Times*, March 13, 1888.

⁷ “Blasted,” *Boston Daily Globe*, March 14, 1888; Mary Cable, *The Blizzard of '88* (New York: Atheneum, 1988), 1-2; Monomier, *Air Apparent*, 2.

⁸ Quoted in Cable, *The Blizzard of '88*, 178.

⁹ “Cut Off,” *Boston Daily Globe*, March 13, 1888.

weather service forecasts for the Atlantic states were either inadequate for storms of such a large scope or based on a careless synthesis of weather observers' data.¹⁰

Credit for accurately predicting the blizzard of 1888 went instead to Horace Johnson, an affluent Connecticut farmer whose career as a weather prophet was launched by his prediction in a New York newspaper that “a disastrous blizzard would occur between March 12 and 15.”¹¹ Johnson, who earned “instant prominence” and “considerable notoriety” for his blizzard prediction, was anointed the “Sage of Middle Haddam” and “oracle of Connecticut” during his fifty-year career as a weather prophet. “Uncle Horace,” as he was commonly known, developed a loyal following among local farmers, even though he did not rely on the same natural signs (e.g., thickness of corn husks, pumpkin rinds, or animal fur; color and shape of a goose's breastbone; or livestock's relative restiveness) commonly associated with farmers' vernacular weather predictions. Johnson, self-taught in meteorology and astronomy, told an interviewer in 1916 that his “prophecies are the result of years of scientific research” into planetary motion and its ostensible relation to atmospheric conditions.¹² Despite Johnson's characterization of his work as similar in nature to government meteorology, his prediction of the blizzard of March 12, 1888 was fundamentally different from the Weather Bureau's twenty-four-hour weather “indications” in that it was a long-range forecast issued well in advance of the storm.¹³

¹⁰ “Editorial,” *New York Times*, November 26, 1888.

¹¹ “Another Blizzard Predicted,” *New York Times*, March 19, 1888. For newspaper accounts that credit Horace Johnson with forecasting the blizzard of March 12, 1888, see “Another Blizzard Predicted,” *New York Times*, March 19, 1888; “‘Old Reliable’ up in Connecticut,” *Baltimore Sun*, December 16, 1890; “Big Blizzard Coming,” *Boston Daily Globe*, January 28, 1892; “Editorial Points,” *Boston Daily Globe*, September 17, 1903; “Will Destroy New York,” *New York Times*, May 30, 1907; “Sage of Middle Haddam,” *Boston Daily Globe*, June 2, 1912; “A Visit to the Prophet Who Predicted the 1888 Blizzard,” *New York Times*, July 16, 1916; “Horace Johnson, Noted Weather Sharp, Dead,” *Boston Daily Globe*, January 21, 1917.

¹² “A Visit to the Prophet Who Predicted the 1888 Blizzard,” *New York Times*, July 16, 1916. A *Boston Daily Globe* article in 1912 also explicitly conferred scientific status upon Johnson while distancing him from the ostensibly unscientific method of reading weather signs in nature. “Sage of Middle Haddam,” *Boston Daily Globe*, June 2, 1912.

¹³ Reports of just how far in advance Johnson predicted the blizzard varied from one to three weeks to two to six months. “Horace Johnson, Noted Weather Sharp, Dead,” *Boston Daily Globe*, January 21, 1917; “A Visit to the

Farmer, scientist, prophet, and local hero, Horace Johnson became quite unpopular with the U.S. Weather Bureau, particularly with its Chief Willis Moore, in the 1890s and the early twentieth century. Newspapers dramatized the competition between these two weather forecasters, often highlighting Moore's misses and Johnson's hits in critiques of the Bureau as a high-priced government bureaucracy. Their well-publicized rivalry led the *Boston Daily Globe* to call Johnson a "thorn in the flesh" of Moore.¹⁴ Moore and Johnson traded barbs in the Hartford press, with Moore likening Johnson to a "quack doctor" and Johnson lambasting the "humbuggery of the Weather Bureau" in early 1909, after Johnson predicted inclement weather for the Taft inauguration, Moore forecast "clear and colder," and inaugural attendees ended up trudging through slushy snow.¹⁵

Long-range weather forecasting was hardly a new phenomenon when Horace Johnson predicted the blizzard of 1888. American almanacs dating from the late seventeenth century to the late nineteenth century commonly featured long-range weather predictions, but the first almanac entirely devoted to long-range forecasting—*Vennor's Weather Almanac*—did not appear until 1877. Canadian geologist and ornithologist Henry Vennor began his rise to fame in the United States on the basis of the long-range weather predictions he published in annual almanacs and American newspapers between 1877 and 1885. Drawing both public adulation and ire for his forecasting of an entire year's worth of weather, Vennor quickly came to embody

Prophet Who Predicted the 1888 Blizzard," *New York Times*, July 16, 1916; "Another Blizzard Predicted," *New York Times*, March 19, 1888; "Editorial Points," *Boston Daily Globe*, September 17, 1903; "Will Destroy New York," *New York Times*, May 30, 1907; "Sage of Middle Haddam," *Boston Daily Globe*, June 2, 1912.

¹⁴ "Sage of Middle Haddam," *Boston Daily Globe*, June 2, 1912. On the Willis Moore-Horace Johnson rivalry, see "Spurns Weather Test," *New York Times*, October 21, 1907; "A Cold Winter Prophesied," *Washington Post*, October 2, 1911; Editorial, *Washington Post*, March 3, 1913; "Horace Johnson, Noted Weather Sharp, Dead," *Boston Daily Globe*, January 21, 1917.

¹⁵ "Sage of Middle Haddam," *Boston Daily Globe*, June 2, 1912; Emerson Hough, "Does the Weather Bureau Make Good?" 609-10.

vernacular weather expertise in the American popular imagination.¹⁶ By the end of the century, Vennor had a host of well-known colleagues who circulated their prognostications through the print media of almanacs and newspapers: John H. Tice, W. T. Foster, and Rev. Israel R. Hicks, all of St. Louis, A. J. DeVoe of Hackensack, New Jersey, Levi Beebe of Massachusetts' Berkshire Valley, and William H. Sears of Plymouth, Massachusetts, to name a few. These weather prophets and their less famous colleagues employed various methods of long-range weather prediction, basing their forecasts on periodicity, planetary meteorology (which the Bureau dismissed as "one of the relics of astrology"), lunar phases, and the weather of saints' days and other holidays.¹⁷

In addition to regularly reporting the predictions of weather prophets, newspapers frequently mentioned a menagerie of non-human weather prophets, often with headlines that played on the scientist-seer rivalry: "A Sort of Gopher Weather Bureau at Santa Ana," "Woodchuck as a Seer," "Tree Frog a Weather Sharp; One Animal Whose Meteorological Reputation Science Has Not Damaged."¹⁸ In addition to the famous groundhog whose shadow foretold a longer winter, other animals predicted—through their migratory patterns, behavior, and appearance—long-term as well as short-term weather trends: moles (the depth of their holes indicates the severity of winter); frogs (who seek the refuge of water when inclement weather is imminent); wild geese (which the Connecticut farming community considered the indication of an early spring); yellow-billed cuckoos (whose cry indicates a coming storm); caterpillars (whose coloring in late fall indicates the pattern of the coming winter); and fish (who won't bite

¹⁶ Sagendorph, *America and Her Almanacs*; Scott Somerville, "A Vennorable Weather Prophet," *Chinook* (Spring 1979): 36-37.

¹⁷ E. B. Garriott, *Long-Range Weather Forecasts* (Washington, DC: Government Printing Office, 1904), 36.

¹⁸ "Southern California News," *Los Angeles Times*, January 30, 1896; "Starts His Winter Nap," *Chicago Daily Tribune*, December 17, 1899; "Tree Frog a Weather Sharp," *Washington Post*, June 9, 1907.

if a storm is looming and go to deeper water when cold weather is coming).¹⁹ And numerous “goosebone weather prophets” made their seasonal predictions based on the appearance of the breastbone of a goose born the previous spring: dark spots on the bone indicated cold weather, lighter spots indicated milder weather, and different sections of the bone corresponded to the winter months. There was more than one way to read a goosebone, however, and variations included the following:

If the November goose bone be thick,
So will the winter weather be;
If the November goose bone be thin,
So will the winter weather be.

If the breastbone of a goose is red, or has many red spots, expect a cold and stormy winter; but if only a few spots are visible the winter will be mild.

The whiteness of a goose’s breastbone is superstitiously thought to indicate or foreshow the amount of snow during winter.²⁰

Such vernacular weather wisdom or weather lore—almost always characterized as a rural phenomenon—included plant as well as animal life: the thickness of corn husks indicates a cold winter; a thin onion skin foretells a mild winter and a thick skin severe; the appearance of skunk cabbages announces the start of spring; a dandelion “shuts like an umbrella” when rain is coming; and late flowering of goldenrod indicates late frost.²¹

¹⁹ “Caterpillar as a Weather Prophet,” *Atlanta Constitution*, January 29, 1905; “The Mole as Weather Prophet,” *Washington Post*, December 24, 1905; “Frogs as Weather Prophets,” *Los Angeles Times*, July 30, 1899; “Tree Frog as Prophet,” *Boston Daily Globe*, July 14, 1907; “Frog is a Weather Prophet,” *Washington Post*, August 9, 1908; “Signs of an Early Spring,” *Chicago Daily Tribune*, April 9, 1899; “Wild Geese Flying North,” *Washington Post*, February 5, 1913; “Picture to Paint,” *Boston Daily Globe*, August 21, 1904; “Caterpillar as a Weather Prophet,” *Atlanta Constitution*, January 29, 1905; “Fishes as Barometers,” *Washington Post*, September 16, 1906; “Fishes Know Weather,” *Boston Globe*, November 25, 1906.

²⁰ “Goosebone Markings,” *Washington Post*, December 30, 1906; “Hard Winter, Says Goose,” *Philadelphia Ledger*, in *Atlanta Constitution*, December 26, 1911; Edward B. Garriott, *Weather Folk-Lore and Local Weather Signs* (Washington, DC: Government Printing Office, 1903), 40.

²¹ “Vegetable Weather Prophet,” *Washington Post*, October 3, 1897; “Signs of an Early Spring,” *Chicago Daily Tribune*, April 9, 1899; “Dandelion as a Barometer,” *Boston Daily Globe*, July 11, 1909; “The Goldenrod as a Weather Prophet,” *Atlanta Constitution*, September 13, 1910.

Newspaper accounts of vernacular weather prophets and their methods of seeing future weather in the present state of nature commonly invoked an epistemological confrontation between rural weather prophecy and government-sponsored meteorological science. In a 1908 article on vernacular weather prediction, the *New York Tribune* dramatized a debate between a “rural interpreter of portents” and a skeptical “city man” who dismissed natural weather signs as superstitious nonsense.²² The *Tribune*’s imagined confrontation—between superstition and science, interpretation and rational calculation, rural and urban modes of apprehending the natural world—had actually occurred throughout the 1890s and the first two decades of the twentieth century, a period in which the Weather Bureau, under Willis Moore’s direction from 1895 to 1913, struggled to define a modern mode of forecasting that diverged from the immensely popular and ubiquitous long-range predictions of vernacular weather prophets.

As we saw in the previous chapter, the weather service figured prominently in public life throughout the late nineteenth century. As a writer in *Science* noted in 1893,

there is not a bureau in the national government whose maxims and procedure are not better established, nor, when one considers the immense and varied interests—railway, shipping, agricultural, commercial, and individual—which are affected by the weather, is there any branch of the service which affects so many people, and affects them so directly, as this, unless we except the postal service?²³

Just as the postal service was the face of the federal government in the early nineteenth century, as historian Richard John has illustrated, the Weather Bureau was the face of federal government science in the late nineteenth century.²⁴ Thus, the Bureau’s maps, charts, and standardized forms became the basis for public assessment of the quality and legitimacy of weather forecasting as a government science, as well as a mechanism for the Bureau’s production of accuracy and

²² “Some Popular Weather Signs,” *New York Tribune*, in *Washington Post*, November 1, 1908.

²³ James P. Hall, “Our Crippled Weather Service,” *Science* 22, no. 547 (1893): 44.

²⁴ Richard R. John, *Spreading the News: The American Postal System from Franklin to Morse* (Cambridge, MA: Harvard University Press, 1995).

policing of uncertainty, as illustrated in the following rather curious episode in the history of the national weather service.

On Saturday, December 16, 1893, the Boston Weather Bureau office was filled to capacity for the public trial of New England district forecaster Henry Helm Clayton, the Blue Hills Observatory meteorologist who had campaigned vigorously in the late 1880s for the transfer of the weather service to a civilian agency. His crime? The U.S. Department of Agriculture, which had assumed oversight of the Weather Bureau in 1891, notified Clayton of these official charges at the end of October: ““gross carelessness and irregularities in the printing of the maps.””²⁵ Assistant Bureau Chief Henry Harrison Dunwoody had conducted his own investigation of Clayton’s maps in September and October 1893, and, discovering what he called “gross irregularities . . . such as the absolute omission of figures and the isothermal lines,” reported his findings to Secretary of Agriculture Sterling Morton.²⁶ As a result, Clayton was suspended for the month of November, after which time he told a *Boston Globe* interviewer that “it was nothing unusual to make such a mistake, and the mistakes in question occurred when

²⁵ “Off For a Month,” *Boston Daily Globe*, November 6, 1893.

²⁶ Whitnah, *A History of the United States Weather Bureau*, quotation on 79; “Carelessness Alleged,” *Boston Daily Globe*, November 7, 1893. Dunwoody, whom Bureau Chief Mark Harrington considered “a selfish intriguer and source of discord in the Weather Bureau,” was not Clayton’s only adversary within the Bureau. Chief Signal Officer A. W. Greely—head of the U. S. Army Signal Service, the institutional home of the weather service before it was transferred to the USDA and renamed the Weather Bureau in 1891—unsuccessfully opposed Clayton’s Bureau appointment in late 1891. The archival record does not explicitly reveal the source of Greely’s discontent, but Clayton’s role as a leading voice in the campaign to transfer the weather service from military to civilian oversight in the late 1880s may well have drawn Greely’s ire, since he staunchly opposed such a transfer. Harrington to Morton, 30 April 1895, “Secretary of Agriculture Correspondence,” quoted in Whitnah, *A History of the United States Weather Bureau*, 79; Mark Harrington to A. W. Greely, 5 October 1891; Mark Harrington to H. H. Clayton, 5 October 1891, Letters Sent by the Chief of the Bureau, 1891-95, 1897-1911, vol. 1, Records of the Weather Bureau, RG 27, National Archives II. On Clayton’s efforts to redefine the weather service as a civilian enterprise, see Clayton, *The Transfer of the United States Weather Service to a Civil Bureau*; Frank Waldo, “Noted Meteorologist Will Help ‘Make the Weather,’” *New York Times*, April 15, 1906; Sterling P. Fergusson and Charles F. Brooks, “Henry Helm Clayton: 1861-1946,” *Science*, n.s. 105, no. 2723 (1947): 248. On Greely’s opposition to the transfer, see “The Caucus on the Tariff,” *New York Times*, May 28, 1888.

hurricanes were prevalent in different parts of the country, and such an error was liable to happen at such a time.”²⁷

Clayton’s downplaying of his mapping mistakes, more than the mistakes themselves, drew Weather Bureau Chief Mark Harrington to Boston in mid-December to conduct a formal investigation. And Bureau officials would have been well aware of Clayton’s comments, as well as press coverage pertaining to the Bureau more generally, since official procedure required all pertinent newspaper clippings to be submitted to Washington headquarters using a standardized form.²⁸ As the *Boston Globe* reported, the Bureau “did not want the impression to be in circulation that the weather department was making mistakes every day.”²⁹ Indeed, forecasting reforms within the Bureau in 1893 emphasized the practical work of accurate forecasting above all else and effectively shut down theoretical work that included research into the feasibility of long-range weather prediction. As Secretary of Agriculture Sterling Morton told Bureau Chief Harrington, “[T]he real object of the Weather Bureau work is to state with more certainty what the weather will be tomorrow, or the next day.”³⁰ Not surprisingly, Clayton’s inaccuracies and his subsequent nonchalance did not sit well amid this climate of certainty.³¹

Clayton’s trial, which was conducted with “all the ceremony incident to a court-martial,” according to the *Boston Globe*, centered on the absence of isotherms and the inaccurate labeling of numbers on Clayton’s maps over the course of the summer—in June he made fourteen errors;

²⁷ “Mr. Clayton Returns,” *Boston Daily Globe*, December 2, 1893.

²⁸ “To Question Clayton,” *Boston Daily Globe*, December 15, 1893.

²⁹ “Chief Harrington is Coming,” *Boston Daily Globe*, December 14, 1893.

³⁰ Sterling Morton to Mark Harrington, 29 June 1893, Letters Sent by the Chief of the Bureau, 1891-95, 1897-1911, vol. 3, RG 27, National Archives II; “Weather Bureau Reforms,” *New York Times*, July 13, 1893; Whitnah, *A History of the United States Weather Bureau*, 65-66; Hall, “Our Crippled Weather Service,” 44.

³¹ Clayton may have been the only forecast official to undergo public trial, but he was not the only one whose map-making errors drew Weather Bureau scrutiny. In December of 1893, dismayed Milwaukee Local Forecast Official Willis Moore reported to the Chief of the Weather Bureau an unusual number of errors made by one of his map-makers and vowed to supervise the map production process more closely. Moore then began to record the errors made by each of his map-makers. W. L. Moore to Mark Harrington, 9 December and 19 December 1893, Box 883, Forecast Division Series, Weather Bureau Correspondence 1893, RG 27, National Archives II.

in July, thirteen; in August, eight; and in September, fifteen. The “station map”—the local version of the national weather map—varied a bit from station to station, but weather maps in the 1890s typically indicated for each major city temperature and air pressure, wind direction, and current conditions, as well as isotherms and isobars, curved lines drawn by hand that smoothly delineated areas of similar temperature and pressure.³²

The flaws in Clayton’s maps varied. The fifteen errors the Bureau itemized for Clayton’s September work fell into one of the following six categories: isobars not marked at all; isobars not marked at one end; isobars marked incorrectly; complete absence of temperature lines; isotherms marked incorrectly at one end; isotherms drawn but not labeled with degree marks. Given the prominence of the Boston station and the fact that it was second only to Washington in the number of maps produced, Clayton’s inaccuracies were highly visible: his map was printed on the back page of the *Boston Herald* (along with the daily weather synopsis and forecast), available in all major post offices throughout New England, as well as in an estimated three hundred to four hundred educational institutions, and it was an indispensable tool for many businesses. According to Clayton’s replacement in the Boston Weather Bureau office, the maps were “the basis daily for the transaction of business interests of great value, and often when human life is a part.”³³

³² Frank H. Bigelow, *Storms, Storm Tracks, and Weather Forecasting, USDA Bulletin No. 20* (Washington, DC: Government Printing Office, 1897), 5-9; Mark Monmonier, “Telegraphy, Iconography, and the Weather Map: Cartographic Weather Reports by the United States Weather Bureau, 1870-1935,” *Imago Mundi* 40 (1988): 18.

³³ Quotation in “An Important Station,” *Boston Daily Globe*, December 6, 1893. Weather maps appeared with great regularity in Weather Bureau publications throughout the late nineteenth century, but they were rarely featured in newspapers. In 1894, only four newspapers (*Boston Herald*, *New Orleans Times-Democrat*, *Cincinnati Tribune*, *San Francisco Examiner*) printed weather maps on a regular basis. In 1894, when forecasting was decentralized and the ranks of forecasters expanded, maps were posted in many more Bureau stations (52 stations in 1891, 73 in 1893, 84 in 1898, 112 in 1909). The Boston Bureau station published a day and night map each day during an era in which many stations were moving toward publishing only one map a day. On the circulation of the weather map in Boston and elsewhere, see “Friends Rallied,” *Boston Daily Globe*, December 17, 1893; Monmonier, “Telegraphy, Iconography, and the Weather Map”; Robert DeC. Ward, “The Newspaper Weather Maps of the United States,” *American Meteorological Journal* 11, no. 3 (1894): 96-107.

The line of questioning into Clayton's alleged inaccuracy as a forecaster came to focus on the process by which Clayton made the daily weather maps in the Boston office. Clayton, who was represented by Boston attorney Charles S. Rackeman, depicted a station atmosphere entirely conducive to inaccuracy: a rushed map production process in which he made the map based on telegraphed weather data that a clerk was in the process of receiving from the Bureau's Washington headquarters; errors in this ciphered telegraphic communication that were, in Clayton's words, "almost constantly occurring;" and a steady stream of interruptions in the Boston office from journalists, navigators, and other weather-seekers. In closing, Clayton's counsel argued that although Clayton had conceded his mapping mistakes, the errors themselves, under the scrutiny of a trained reader, could have been corrected from other parts of the maps.³⁴ And he was right; there is no evidence that Clayton's mislabeled maps had any serious consequences for untrained readers, none of whom wandered unprepared into a storm or ventured out on dangerous waters as the result of unmarked isobars and isotherms.

Many of the spectators at Clayton's trial were trained weather map readers—as the *Boston Globe* called them, "scientific men who had come to say a good word for Mr. Clayton"—and the general tenor of their testimony was that Clayton's considerable talents in meteorological research and forecasting were too valuable to be overshadowed by his mapping errors, which were not the so-called "gross irregularities" Assistant Bureau Chief Dunwoody had made them out to be.³⁵ In fact, argued one meteorology professor, inaccuracy was an inevitable feature of

³⁴ Friends Rallied," *Boston Daily Globe*, December 17, 1893.

³⁵ Those speaking on Clayton's behalf included Abbot Lawrence Rotch, director of the Blue Hill Observatory where Clayton worked before joining the Bureau; Professor W. M. Davis of Harvard; Professor S. C. Chandler of Cambridge; Professor Pickering of Harvard; E. G. Preston, Secretary of the Boston Chamber of Commerce; M. A. Ballou, secretary of the Boston stock exchange; Clarence W. Barron of the Boston news bureau; Arthur E. Sweetland, a volunteer observer from Winthrop, MA, who had benefited from Clayton's tutelage; and numerous residents of Boston, its suburbs, and southeastern Massachusetts. "Friends Rallied," *Boston Daily Globe*, December 17, 1893.

weather forecasting. ““It is impossible,”” he said, ““to conduct the work of a bureau of this kind without errors; it is no use to expect it.””³⁶

But expect it the Weather Bureau did. According to Chief Harrington, who had presided as judge over the proceedings, “Clayton’s plea was that of confession and avoidance,” and in the Bureau’s logic of accuracy in the 1890s, to confess to mapping errors rendered one unfit to forecast.³⁷ Immediately after the trial, Clayton requested a transfer to what he called “more strictly scientific work” within the Bureau and promised to resign were his transfer not granted. Harrington replied that he did not doubt Clayton’s capacity as a research scientist but since Clayton failed to meet the standards of, in Harrington’s words, “the accuracy essential in this work,” his resignation would be accepted effective December 31, 1893.³⁸

Geographer Mark Monmonier, in his analysis of the symbolic dimensions of weather mapping, has characterized the late nineteenth century weather map as “inspir[ing] a mixture of admiration, appreciation and awe among the general public.”³⁹ But Clayton’s trial reveals the map itself as contested terrain, not a representation of empirical certainty and scientific expertise, but rather a lightning rod for public debate over the authority of the Weather Bureau and its vision of forecasting as an exact science. The map was a metaphor not only for the prowess of government science, as Monmonier points out, but also for the very uncertainty the Bureau’s forecasting division defined its work against. Clayton’s maps became a threat to the Bureau’s public image, a symbol of inaccuracy in an institution that defined itself by the very opposite.

³⁶ Friends Rallied,” *Boston Daily Globe*, December 17, 1893.

³⁷ Harrington to Morton, 23 December 1893, Letters Sent by the Chief of the Bureau, 1891-95, 1897-1911, vol. 4, RG 27, National Archives II.

³⁸ Harrington to Clayton, 21 December 1893, Letters Sent by the Chief of the Bureau, 1891-95, 1897-1911, vol. 4, RG 27, National Archives II.

³⁹ Monmonier, “Telegraphy, Iconography, and the Weather Map,” 15.

Government weather maps and forecasts were not always faulty—the weather service had its supporters and detractors in every era—and when they were accurate, their efficacy was due more to telegraphic communication technology than it was to theories of meteorological science. In the mid-1890s Weather Bureau insiders characterized meteorological science as “embryonic,” “young and undeveloped.”⁴⁰ Indeed, late-nineteenth-century weather forecasting was based not on theoretical models of atmospheric change but rather the geographical projection of weather observations from west to east. By 1898, communications networks linking 154 observation stations through nearly 500 miles of telegraph wire and submarine cables transmitted to Weather Bureau headquarters twice-daily synchronous weather observations of “air pressure, temperature, dew point, relative humidity, precipitation, direction and force of wind and the amount, kind and direction of clouds.” When these synchronous observations arrived at one of four district forecasting centers—Washington, Chicago, San Francisco, and Portland—Bureau forecast officials produced a forecast for the next twenty-four to thirty-six hours that was then disseminated to Bureau substations, each of which relayed the forecast by telegraph to local towns and villages within fifty to one hundred miles.⁴¹ As Bureau official J. Warren Smith noted in 1891, since the creation of the weather service in 1870, the parameters of collecting and representing weather data had changed—the times and number of daily weather observations, the introduction of self-registering meteorological instrumentation, the evolution from the text-based weather bulletin to the lithographic daily weather map—but the

⁴⁰ Willis L. Moore, “Relations of the Weather Bureau to the Science and Industry of the Country,” *Science*, n.s. 2, no. 44 (1895): 576; Hall, “Our Crippled Weather Service,” 44.

⁴¹ Calvert, “How the Weather Bureau Disseminates Forecasts and Warnings,” xxii-xxiii.

system of forecasting (i.e., what was observed and how forecasts were created) had stayed the same.⁴²

Government weather forecasts gradually reached a broader public throughout the late nineteenth century, and, as we saw in the previous chapter, by the close of the century, the Weather Bureau disseminated its short-term forecasts and storm warnings through a variety of media: newspapers, telegraph, telephone, forecast postcards, official daily weather maps, a flag warning system, and for more remote rural populations, visual signals affixed to railroad cars and locomotive whistles to signal approaching storms. The Bureau's storm warning service expanded in the 1890s, with the reorganization and improvement of the river and flood warning service, the extension of cold-wave and frost warnings into the Great Plains region in 1896-97, and the creation of a West Indian hurricane warning network during the Spanish-American War.⁴³ Bureau officials believed that the expansion of these short-term forecasting services intensified public demand for long-range predictions, but the Bureau's official position on the prospects of predicting the far-off future remained, throughout the 1890s, a conservative one: accurate long-range forecasting might be a worthy endeavor in the future, but present public expectations raced far ahead of the capabilities of government forecasters.⁴⁴

Willis Moore was not the first opponent of long-range forecasts within the federal government. Moore's predecessor as Weather Bureau Chief, Mark Harrington, issued this caution to a San Francisco Bureau official in 1891: "I noticed something in a newspaper clipping about your intention to make general predictions for a whole month in advance. The idea is a

⁴² J. Warren Smith, "The U.S. Signal Service Weather Forecasts," *American Meteorological Journal* 8, no. 2 (1891): 49-51.

⁴³ E. J. Prindle, "Weather Forecasts: The Manner of Making Them and Their Practical Value," *Popular Science Monthly* 53 (1898): 309; Smith, "The U.S. Signal Service Weather Forecasts," 49-51, quotation on 51; Calvert, "How the Weather Bureau Disseminates Forecasts and Warnings," xxii-xxiii; Whitnah, *A History of the United States Weather Bureau*, 67-68.

⁴⁴ "Forecasting the Weather," *Omaha World Herald*, September 25, 1892.

good one but the heading is not wise—such advertisement should not be made.”⁴⁵ Secretary of Agriculture Sterling Morton shared Harrington’s skepticism: in 1893, the year of Clayton’s trial, he shut down what he called the “wholly theoretical” work of Weather Bureau Professor F. H. Bigelow, a well-known proponent of solar radiation theories of long-range forecasting who envisioned monthly and perhaps yearly forecasts in the Bureau’s future. Such forecasts would, Morton claimed in a letter to Harrington, “degenerate, so far as precision and certainty is concerned, into the style of the ancient almanacs, wherein we read ‘about this time expect rain,’ running down the column and covering several days, and even weeks.” The *New York Times* quoted Morton’s sentiments and characterized his emphasis on short-term weather prediction (and his aversion to experimental long-term forecasting) as simplistic, but the prospect of predicting the weather with certainty was anything but simple, as we shall see in the following section.⁴⁶

The turn of the century found the Weather Bureau focused squarely on the challenge of public relations, as evidenced by the proceedings of the Omaha Convention of Weather Bureau Officials in October 1898 and the first paper in the published proceedings: “Relation Between the Weather Bureau and the Public.” The second speaker on this topic, G. N. Salisbury of Seattle, noted the Bureau’s increased visibility and public accountability at the end of the century: “Faster and faster, more and more constantly, is the Weather Bureau and its work coming into public notice. More and more are the general public, even those of only ordinary

⁴⁵ Mark Harrington to R. E. Kerkane, 4 December 1891, Letters Sent by the Chief of the Bureau, 1891-95, 1897-1911, vol. 1, RG 27, National Archives II.

⁴⁶ Sterling Morton to Mark Harrington, 29 June 1893, Letters Sent by the Chief of the Bureau, 1891-95, 1897-1911, vol. 3, RG 27, National Archives II; “Weather Bureau Reforms,” *New York Times*, July 13, 1893.

education and intelligence, becoming quite familiar with what the Bureau does, and what it aims to do.”⁴⁷

Salisbury went on to argue that this more knowledgeable public had unreasonably high expectations for weather forecasts if it sought weather predictions for the following week, or more specific predictions for two days ahead. Salisbury advocated a conservative approach to long-range forecasting that acknowledged the uncertainty of such an endeavor:

Inaccurate information is worse than none. It is much better to say “We do not know,” however humiliating the confession, than to predict what will not come to pass. If we do not know, with considerable certainty, what the weather will be two or more days in advance its prediction should not be attempted. It savors of charlatanism; it begets lack of confidence in us; our information becomes unreliable, and whom can we blame save ourselves, if we offer the odium or oblivion assigned to all false prophets? The aim of the Bureau should be to foster public confidence. It should always be sure of its ground. . . . [E]ach correct statement and each accurate prediction adds to the grandeur and beauty of its temple of reputation; while every misstatement, and every gross failure, is a stone taken from its foundation, lessening the stability and threatening the overthrow of the structure.⁴⁸

Weather prophets posed an obvious threat to the Bureau’s desired “temple of reputation,” as convention speaker E. A. Beals of Cleveland noted in a paper titled “Relations with the Press, Commercial Bodies, and Scientific Organizations. How Promoted.” Beals instructed his listeners that

unusually hot, cold, or dry spells, heavy rainfalls, and winds all start the newspaper boys for your office. They want comparison at once, and if your records are properly kept you should be able to give them such information. If you can not, you have reflected discredit upon the service; the “oldest inhabitants” are immediately consulted to supply the deficiency, and thus the public mind receives further confirmation as to the changeableness of climate, the certainty of equinoctial gales, the infallibility of the goose bone and the ground hog in foretelling all sorts of calamities.⁴⁹

⁴⁷ U.S. Weather Bureau, *Proceedings of the Convention of Weather Bureau Officials, Held at Omaha, Nebr., October 13-14, 1898* (Washington, DC: Weather Bureau, 1899), 12, 14.

⁴⁸ *Ibid.*, 15-16.

⁴⁹ *Ibid.*, 71.

Beals's scenario—the well-organized bureaucracy and scientific authority of the professional local weather office versus vernacular expertise and the authority of local experience—crystallized the Bureau's institutional attempt to redefine weather forecasting as a modern scientific practice and to relegate weather prophecy to the realm of premodern quackery.

In the discussion following Beals's paper, Bureau official J. Warren Smith praised Chief Willis Moore's public relations savvy, noting that Moore "went out among the people ... [and] showed them that he was an expert and not a prophet."⁵⁰ And a subsequent comment by a Mr. Sims exhorted the expert—not the prophet—to "lead the people out of the darkness of ignorance into the light of intelligent meteorology."⁵¹ With this exaggerated religious imagery Sims posited an absolute distinction between scientific expertise and prophecy and highlighted the epistemological incompatibility of these two ways of knowing the future. Sims's conversion imperative—the need to convert the unlearned from adherence to their irrational beliefs to acceptance of meteorological truth—clearly resonated with Willis Moore, who thereafter set out on a proselytizing mission of his own in the popular press. And his mission was, by some accounts, a quick success. By 1902 Moore's attempts to educate the public about the stark distinction between authoritative scientific forecasting and illegitimate long-range prophecy earned him the *Washington Post*'s distinction as the government scientist who had done the most "to combat superstition and ignorance" in the broader ideological project of "civilizing the masses and bringing them in touch with modern science."⁵²

Moore popularized the Omaha convention's prevailing skepticism regarding long-range forecasting in a series of articles and speeches in 1898 and 1899. Just before the Weather Bureau officials convened in Omaha, Moore published a *Forum* article that presented the Bureau's

⁵⁰ *Ibid.*, 73.

⁵¹ *Ibid.*, 74.

⁵² "Scientist as Prophet," *Washington Post*, August 3, 1902.

official stance on long-range forecasting: a noble “dream” for the future but an unattainable goal in the present. Accurate weekly and monthly forecasts, Moore speculated, would bring about more efficiency in agriculture—“a wonderful conservation of human energy”—if farmers knew when rain would be plentiful in the corn and wheat regions or when droughts would strike, and if southern planters knew whether the upcoming season would bring good cotton-growing weather.

Implicit in Moore’s argument was that such a forecast would effectively insulate farmers from some of the economic risk of a national market. And such foreknowledge, Moore claimed, would ensure efficiency on a national scale, for “[e]ffort could be withheld in one part of the country, and prodigious energy exerted in another.” But scientific, and thus legitimate, long-range forecasts were still a long way off, according to Moore, who sought to “especially caution the public against the imposture of charlatans and astrologists, who simply prey upon the credulity of the people.” The legitimate scope of a scientific forecast, according to Moore, was two to three days in the summer and one to two days in the winter, when sometimes rapidly changing atmospheric conditions made a one-day forecast a significant challenge. Moore acknowledged these limitations of forecasting, noting that “[t]he Weather Bureau takes the public into its confidence in this matter, and does not claim to be able to do more than it is possible to accomplish.”⁵³

What the Bureau did claim to be able to do—with 80 to 85 percent accuracy at the turn of the century—was issue short-term forecasts and storm warnings.⁵⁴ But predictable weather was

⁵³ Willis L. Moore, “Weather Forecasting,” *Forum* 25 (1898): 351-52.

⁵⁴ The forecast verification process by which the Bureau calculated its accuracy percentages was complex and inspired controversy both within the Bureau and among its detractors. The turn of the century found the Bureau dealing with various problems of verification, including the differences in standards of verification between the Bureau’s central office and its Chicago district; the climatological diversity within the geographic boundaries of a single forecasting district; the difficulty of translating a general forecast into a local context; the disjuncture between the Bureau’s quantitative verification and the public’s qualitative verification; and the rigid rules and language of Bureau forecasting that sometimes yielded forecasts that were technically accurate within Bureau standards but misleading enough to pose an economic risk to farmers. See U.S. Weather Bureau, *Proceedings of the Second*

not preventable weather, as the residents of Galveston, Texas learned on September 8, 1900, when their town was ravaged by the worst hurricane in U.S. history. The storm caused thirty million dollars in damage and claimed six thousand lives as it swept through Texas and didn't stop until it reached Iowa. Although Galveston Weather Bureau official Isaac Cline despaired that "the ruin it wrought beggars description," the Bureau found much to praise in the storm's aftermath: the timeliness and reach of its hurricane warnings, the lives saved as a result, and the overall efficacy of the weather service.

But the Bureau's forecast did not accurately predict the twenty-foot high tide that that drowned thirty-two people waiting out the storm in Cline's home. One of the Bureau's harshest critics later deemed Moore's official forecast of "high winds" as vague and misleading, and cited Moore's acknowledgement that the Bureau's warnings did little to mitigate the destruction in Galveston.⁵⁵ For his part, Moore publicly condemned the alleged long-range forecasting of the hurricane:

The Weather Bureau accurately foretold the portion of the coast line that would be affected by the Galveston storm, while this long-range forecaster, whose work we consider to be nothing but the merest charlatanism, makes a general statement to the effect that, 'storms may be expected about this time for the south seas, islands and coasts.' . . . What nonsense to say that such a prediction accurately foretold the coming of the recent hurricane. . . . This long-range astrologer throws out his dragnet and claims everything that falls within an area 2000 miles in diameter. . . . I am satisfied that the majority of [long-range forecasters] know themselves to be engaged in the perpetration of fraud, and that the remainder are either ignorant or are themselves deceived by accidental coincidences between their predictions and the storms that occur.⁵⁶

Convention of Weather Bureau Officials, Held at Milwaukee, Wis., August 27, 28, 29, 1901 (Washington, DC: Government Printing Office, 1902); Hough, "Does the Weather Bureau Make Good?"

⁵⁵ Weather Bureau, *Report of the Chief of the Weather Bureau, 1901-1902* (Washington, DC: Government Printing Office, 1902), 9-10; Whitnah, *A History of the United States Weather Bureau*, 94; Hough, "Does the Weather Bureau Make Good?" 616; Erik Larson, *Isaac's Storm: A Man, a Time, and the Deadliest Hurricane in History* (New York: Vintage, 2000).

⁵⁶ Willis Moore, "Hurricanes and Storms," *Los Angeles Times*, October 14, 1900.

Moore's escalating opposition to long-range weather forecasting intensified further in 1904, the same year that debate over weather forecasting reached the floor of the U.S. Senate. On March 26, 1904, Republican Senator Thomas Bard of California proposed a bill designed for "the promotion of further discovery and research in meteorology." Bard put forth Senate Bill No. 5277 on behalf of a Los Angeles attorney who was known to the Weather Bureau as the "friend of a well known long-range planetary forecaster." The centerpiece of Bard's bill, and the part that figured most prominently in press coverage, was the proposal to hold a forecasting contest that would award two prizes totaling \$150,000 to those most successful in making thirty-day temperature and rainfall forecasts over a six-month period.⁵⁷ Contestants would be required not only to make accurate long-range temperature and precipitation forecasts, but also to explain the scientific principles underlying their methods to a jury of university experts in meteorology. The goal of Bard's proposed competition was to uncover "the physical basis of meteorology" and thereby mitigate the acknowledged uncertainty of long-range weather forecasting.⁵⁸ As the *Los Angeles Times* reported, "The government weather experts do not know [the physical basis for meteorology]. Nobody knows what causes weather till after it has happened, at any rate, and then the knowledge is worthless." The *Times* went on to acknowledge that the Weather Bureau's twenty-four-hour forecasts were relatively accurate thanks to telegraphic communication, but

⁵⁷ Contestants would be required to forecast the temperature for any three states from a predetermined list: Massachusetts, New York, Pennsylvania, District of Columbia, Georgia, Ohio, Minnesota, Missouri, Kansas, Texas, California. "The Promotion of Meteorology," *Monthly Weather Review* 32, no. 5 (1904): 220-21. For newspaper coverage of Bard's bill, see "Big Prizes Offered Weather Prophets," *Los Angeles Times*, March 27, 1904; "To Promote Research in Meteorology," *Washington Post*, March 27, 1904; "Good Work of Senator Bard," *Los Angeles Times*, May 8, 1904; "Forecasting the Weather," *Los Angeles Times*, August 10, 1904.

⁵⁸ "Big Prizes Offered Weather Prophets," *Los Angeles Times*, March 27, 1904; "An Innovation in Barometric Observation," *New York Daily Tribune*, April 30, 1903, quoted in Garriott, *Weather Folk-Lore and Local Weather Signs*, 47.

that the Bureau was unable “to analyze the weather and say what is going to happen next with certainty.”⁵⁹

The Weather Bureau—through its official publications as well as Moore’s private communications—strongly opposed Senator Bard’s proposed forecasting contest on the grounds that it would perpetuate the very uncertainty it set out to eliminate. The Bureau’s *Monthly Weather Review*, along with the *Los Angeles Times*, reported the official position of Moore and his advisers as “unable to see any merit in the bill.”⁶⁰ A month before introducing his bill, Senator Bard sent a draft of the bill to Moore, who rejected Bard’s proposal on the grounds that its support of long-range forecasters would be a detriment to the public and a threat to the reputation of government science. Moore acknowledged the existence of an honest class of long-range forecasters—the well-intentioned but unlearned in physics or astronomy—but vilified the majority as savvy quacks exploiting the limitations of Weather Bureau forecasting as well as the trust of the public. Moore noted the prophets’ reliance on uncertainty as a key to their public stature, arguing that their imprecise predictions of where and when storms would strike allowed them a greater chance of accuracy and thus fame. Moore decried these forecasters for their disaster-mongering, declaring that “[m]ost long-range weather forecasters are of that pernicious class of people that predict swarms of locusts, wars, famines, and other scourges. They perpetrate a positive injury upon the community at large.” As Moore explained to Senator Bard, in 1902 Atlantic City hotel managers asked him to debunk a prophet’s forewarning of a disastrous hurricane, a prognostication that inspired frightened guests and hotel workers to flee

⁵⁹ “Big Prizes Offered Weather Prophets,” *Los Angeles Times*, March 27, 1904.

⁶⁰ “The Promotion of Meteorology,” *Monthly Weather Review* 32:220; “Forecasting the Weather,” *Los Angeles Times*, August 10, 1904.

the area. But Moore's reassuring public statement did little to quell the panic, and the exodus continued.⁶¹

Long-range weather prophets like the one who emptied Atlantic City in 1902 represented a threat to Moore not only because of their alleged quackery and disaster-mongering, but also because of their disruption of the boundary between the scientific and the supernatural. As Moore wrote to Senator Bard, "It is wrong for them to tell the public that there is something occult and mysterious in science. They claim to possess wonderful powers, but when put to the test . . . can never show any principle back of their systems." Furthermore, Moore alleged, Bard's contest would bestow official government recognition and even more public attention on the long-range weather prophets.⁶² Moore's worst fears were never realized, as Bard's bill never made it out of committee. But the long-range forecasters' claims for "something occult and mysterious in science" fueled Moore's crusade against weather prophecy throughout 1904 and inspired his vigilant policing of a rigid boundary between science and superstition, forecasting and prophecy.

At the Weather Bureau's Peoria Convention in late September 1904, Moore exhorted his colleagues to adopt a more aggressive stance in denouncing the quackery of long-range forecasting. Responding to chief forecaster E. B. Garriott's paper on the potential value of solar radiation analysis to long-range forecasting, Moore urged the Bureau to act against the long-range forecasters who had recently begun "to spring up like a mushroom growth, prosper, and grow rich and fat on the proceeds of their work." Moore implored the audience, "We must not attack an individual, we must attack the system; but the system you can excoriate as severely as

⁶¹ Willis Moore to Thomas Bard, 29 February 1904, box 5, folder 18, Henry Helm Clayton Papers, 1877-1949 and undated, Smithsonian Institution Archives, Washington, DC; *Proceedings of the Third Convention of Weather Bureau Officials Held at Peoria, Ill., September 20, 21, 22, 1904* (Washington, DC: Government Printing Office, 1904), 45.

⁶² *Ibid.*

you like.”⁶³ Moore’s comments echoed far beyond Peoria: his “scathing rebuke” of Garriott was reported by the Associated Press as well as local newspapers.⁶⁴

The Peoria Convention marked a significant broadening of Moore’s campaign against long-range weather prophecy. Previously, Moore had impugned the character of long-range weather prophets, denouncing them as frauds. In 1904, Moore extended his critique beyond questions of individual integrity, attacking the entire practice of long-range forecasting as unscientific. Moore waged his campaign against long-range weather prophecy in three primary forums: interviews in the popular press, Weather Bureau circulars that were distributed to local Bureau officials and newspapers, and the Bureau’s annual reports.⁶⁵ Moore’s message circulated in the popular press directly and indirectly—his critique of long-range forecasting was sometimes reported verbatim, sometimes conveyed by local Weather Bureau officials, and sometimes communicated indirectly in editorials by like-minded journalists.⁶⁶

The basic principle underlying Moore’s public relations campaign of 1904 was the one he had articulated in response to Senator Bard’s bill: scientists and seers were not in the same business after all. In 1902 a *Washington Post* headline had declared “Nothing Supernatural About Prof. Moore’s Work,” and in 1904 he underscored that point by making the distinction between the scientific and the supernatural absolute in the context of modern meteorology.⁶⁷ Moore endeavored to define for the public the scope of professional scientific meteorology and

⁶³ *Ibid.*, 43.

⁶⁴ Associated Press, “Called Charlatans,” *Los Angeles Times*, September 22, 1904; “Weather Fakirs,” *Grand Forks (ND) Daily Herald*, September 24, 1904.

⁶⁵ A comparison of these sources reveals that Moore’s rhetoric (and often his prose) remained unchanged, regardless of his audience.

⁶⁶ “Editorial Points,” *Boston Daily Globe*, July 21, 1904; “Forecasting the Weather,” *Los Angeles Times*, August 10, 1904; “Weather Fakirs,” *Grand Forks (ND) Daily Herald*, September 24, 1904; “Called Charlatans,” *Los Angeles Times*, September 22, 1904; “Unauthorized Weather Forecast,” *Wilkes-Barre (PA) Times*, October 21, 1904; J. W. Bauer, “Long Range Weather Forecasts,” *South Carolina State*, November 15, 1904; “The Weather,” *Lexington (KY) Herald*, November 4, 1904; “Topics of the Times,” *New York Times*, December 29, 1904.

⁶⁷ “Scientist as Prophet,” *Washington Post*, August 3, 1902.

in so doing, to defend it against the popular vernacular traditions of weather prediction. By the early twentieth century, the circulation of long-range weather forecasts had “reached such proportions,” according to Moore, that it warranted an official Weather Bureau response. Weather prophets had a sizeable clientele, Moore lamented, who paid subscription fees for their forecasts. Moore saw this constituency as one easily duped, comparing long-range forecasts to advertisements for quack medicine and alleging that both were “harmful in the extreme.” Moore clearly delineated the boundary between quackery and reputable science, alleging that the popularity of long-range weather prophets threatened to “bring the science of meteorology into disrepute,” while also acknowledging that his band of government meteorologists did not begrudge “honest, well-directed efforts” at long-range forecasting—they renounced only those who pretended to see far into the future “for notoriety or profit.”⁶⁸

Moore’s distinction between science and prophecy was echoed in the popular press. In a 1904 article featuring Moore’s crusade against long-range weather forecasting, the *New York Times* noted that “[w]here the scientists fear to tread the seers enter boldly.”⁶⁹ And in September of the same year, a North Dakota paper drew a similar semantic distinction when it noted the stark contrast between “weather forecaster” and “weather fakir.”⁷⁰ This opposition between scientists and seers was not only rhetorical: weather prophets challenged the Weather Bureau meteorologists to a long-range forecasting contest with a five thousand dollar prize, which Moore indignantly refused, insisting that “such a contest would only result in deceiving the public” since no Weather Bureau meteorologists were capable of accurate weather predictions a month ahead of time. Moore dismissed the challenge as “simply a guessing contest, in which the

⁶⁸ “How ‘Fake’ Weather-Forecasters Fool Farmers,” *New York Times*, December 11, 1904; “Not Official Sharps,” *Washington Post*, July 12, 1904; U.S. Weather Bureau, *Report of the Chief of the Weather Bureau, 1903-1904* (Washington, DC: Government Printing Office, 1905), xiii-xvii.

⁶⁹ “How ‘Fake’ Weather-Forecasters Fool Farmers,” *New York Times*, December 11, 1904.

⁷⁰ “Weather Fakirs,” *Grand Forks (ND) Daily Herald*, September 24, 1904.

most ignorant man would be as likely to win as the most eminent scientist.” Moore went on to say that any weather forecast a month ahead of time “is only a guess” that “a ten-year-old boy can make . . . as well as an alleged weather prophet.”⁷¹

Rather than engage in such a “guessing contest” to prove to the public the superiority of scientific meteorology, Moore aimed instead to discredit weather prophecy. In July 1904 the Weather Bureau disseminated two circulars among local Bureau officials with the goal of, as the *Washington Post* put it, “counteracting the influence of the false prophets.”⁷² And six months later, a *New York Times* headline read, “Break Up the Illegitimate Business of the Pseudo Prophets Who are Growing Rich Through the Credulity of Our Agricultural Population.” The article centered on Moore’s efforts to protect the American public from this “species of meteorological soothsaying.”⁷³

The American public needed protection, Moore believed, from the economic and social risk exacerbated by the uncertainty of six- and seven-day forecasts. In his annual report as well as his *New York Times* interview in December 1904, Moore warned of the economic risk to agricultural, commercial, maritime, and industrial populations who orchestrated their activities according to inaccurate long-term weather forecasts. Moore cited extensive correspondence from farmers, shippers, manufacturers, and businessmen who “control[led] their business operations by these [long-range] predictions,” but argued that those “farmers, merchants, and mariners who keep pace with modern progress” did not put their faith in long-range forecasts.⁷⁴

⁷¹ “How ‘Fake’ Weather-Forecasters Fool Farmers,” *New York Times*, December 11, 1904. The forecasting contest proposed to Moore in 1904 was neither the first nor the last of its kind. In 1896 Missouri weather prophet W. T. Foster publicly challenged Weather Bureau officials to a seven-day forecasting contest, and in late 1907, Horace Johnson, Connecticut’s well-known weather prophet, challenged Moore, who rebuffed him in the press. “A Challenge to Forecasters,” *Washington Post*, June 29, 1896; “Spurns Weather Test,” *New York Times*, October 21, 1907.

⁷² “Not Official Sharps,” *Washington Post*, July 12, 1904.

⁷³ “How ‘Fake’ Weather-Forecasters Fool Farmers,” *New York Times*, December 11, 1904.

⁷⁴ *Ibid.*; U.S. Weather Bureau, *Report of the Chief of the Weather Bureau, 1903-1904*, xiii-xvii.

According to Moore's logic of "modern progress," there was no place for the uncertainty of long-range forecasts in a modern capitalist market—itsself as unpredictable as weather.

Of all those who relied on long-range weather prophecy, farmers had the most to lose, according to the Weather Bureau and the popular press. Moore warned that weather prophets had insinuated themselves into the rural press and were handsomely paid for their forecasts.⁷⁵ E. B. Garriott, head of the forecasting division, issued a 1904 circular that impressed upon Bureau personnel their role in protecting ostensibly naïve rural populations from the fraud of weather prophets. Garriott instructed Bureau section directors to communicate the threat of long-range forecasting to their local rural press, and to encourage "the newspapers of their State . . . [to] print articles that will teach people the truth about forecasts and storm warnings, instead of misleading their readers by publishing the predictions of fakirs."⁷⁶ And some newspapers characterized long-range weather prophecy as an explicitly rural problem. In 1902 the *Washington Post* lauded Moore's efforts to disabuse rural populations of their faith in vernacular weather wisdom:

by making science bear directly on the most prevalent superstitions, by showing that weather forecasting is a matter of science and not of religion, by convincing the rural population that when the bureau predicts rain for the day following, the fact that all the roosters in the country are perching upon the top fence rail will not change it, Prof. Moore has done more for the advancement of intelligence than any other scientist in Washington.⁷⁷

The *Post's* account underscored the two-part epistemological agenda of Moore's anti-prophecy campaign, which sought to redefine forecasting as a modern, rational, scientific practice in opposition to prophecy as a premodern belief system predicated on folk wisdom, and to teach farmers to distrust their experiential knowledge of the natural world so as to transform

⁷⁵ "Not Official Sharps," *Washington Post*, July 12, 1904.

⁷⁶ *Ibid.*

⁷⁷ "Scientist as Prophet," *Washington Post*, August 3, 1902.

their faith in natural signs into trust in a government bureaucracy. Moore himself acknowledged the first aspect of the campaign in a subsequent interview in which he said, in response to a question about the potentially divine origins of the rainbow, “I will not drag theology into the weather.”⁷⁸ The Weather Bureau furthered the second aspect of the campaign in a 1903 bulletin by forecaster E. B. Garriott entitled *Weather Folk-lore and Local Weather Signs*, a book that denounced long-range forecasting based on three popular methods: past trends and seasonal averages in local weather conditions, planetary meteorology (planetary motion, moon phases, “stellar influences”), and natural observation (characteristics of plants and animals).⁷⁹ A review in the *San Jose Mercury News* found Garriott’s assessment of weather proverbs “condescending” and termed the bulletin and a traditional almanac “Japs and Russes in their mutual hatred.”⁸⁰ The *Farming* magazine called the Bureau’s bulletin “iconoclastic,” noting that “[t]his all means that the traditional ground hog, goose bone, changes of the moon, and other time-honored weather indicators as a matter of fact have nothing to do with the weather, and therefore must be eliminated from the calculations of the farmer who wants to be up-to-date.”⁸¹

To prove that effective weather prediction was a modern, rational scientific practice and to discredit weather prophecy as consistently inaccurate, Moore conducted public verifications of vernacular forecasters. He provided illustrations of both forecasting systems in a series of comparative charts that were published in the Weather Bureau’s 1903-04 annual report as well as in the *New York Times* in December 1904. Moore’s charts—which the *Times* billed as the “Humbug Exposed in Diagrams”—compared weather predictions to weather experience,

⁷⁸ James B. Morrow, “The Man Who Chases Cyclones,” *Boston Daily Globe*, September 5, 1909.

⁷⁹ Garriott, *Weather Folk-Lore and Local Weather Signs*.

⁸⁰ “Modern Weather Man Discusses Wise Saws,” *San Jose Mercury News*, March 20, 1904.

⁸¹ “Good-by to the Ground Hog,” *Washington Post*, November 4, 1906.

superimposing the Bureau's recorded temperature variations for a given month on the long-range weather predictions (see Figure 6).⁸²

CHARTS PREPARED BY CHIEF MOORE SHOWING THE FAILURE OF THE "PROPHETS" TO FORECAST THE WEATHER.

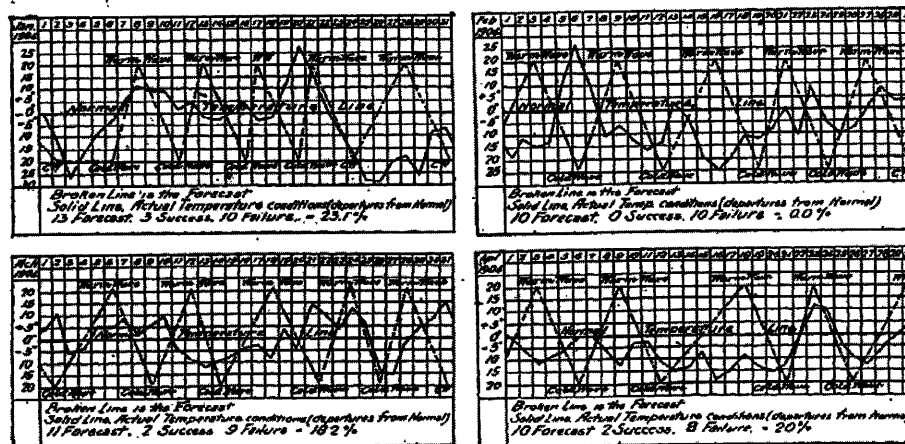
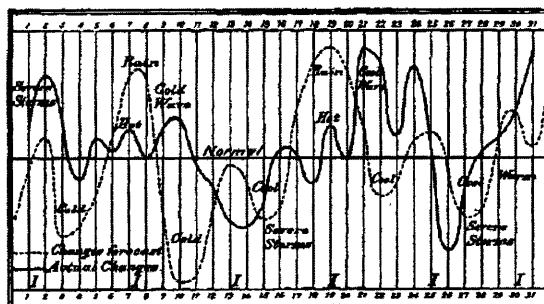


Figure 6: Weather forecast verification charts of 1904. Reprinted from "How 'Fake' Weather-Forecasters Fool Farmers," *New York Times*, December 11, 1904.



MARCH, 1904, WEATHER CHART: The solid black wavy line, the word "normal," and the explanation in the lower left-hand corner were put upon the above chart by the Weather Bureau. All other matter, including the words "severe storms," "cold," "rain," "cold wave," "hot," "cool," etc., were copied from the original chart issued by this particular long-range forecaster. The dotted wavy line represents the temperatures predicted by him; the solid black wavy line the actual temperatures as recorded at St. Louis, Mo., a city on the ninetieth meridian.

The long-range forecaster says:

"In the above chart the letter I indicates the dates about which storm waves, moving eastward, will reach meridian 90, which is about the same as the general course of the Mississippi River. All weather events move eastward across the continent and those marked on the chart are expected to reach meridian 90 about the dates indicated. The straight, treble, horizontal line, running through middle of chart, is the average temperature of March for many years past and the wavy line is temperature forecast for March, 1904, showing where temperature is expected to go above or below normal, indicating how warm or how cold it will be.

"These weather charts are \$1.50 a year; Weekly Bulletins \$1.50 a year; 'What and When to Plant and Sow,' \$6.00 a year gives complete weather forecasts and advice; Probable effects of weather on Chicago and New York market prices of grain and cotton \$3.00 a month."

Figure 7: Reprinted from U.S. Weather Bureau, *Report of the Chief of the Weather Bureau, 1903-04* (Washington: Government Printing Office, 1905), xv.

⁸² "How 'Fake' Weather-Forecasters Fool Farmers," *New York Times*, December 11, 1904. Moore was not the first to publish weather verification charts. In 1864, the British Board of Trade requested verification charts of former *H.M.S. Beagle* captain Robert FitzRoy's weather forecasts. Anderson, *Predicting the Weather*, 151.

The Bureau's annual report reproduced a weather chart sold by a popular long-range forecaster and superimposed the actual temperatures for March 1904 (see Figure 7). On this chart the dotted line is predictive—representing a weather prophet's long-range predictions of colder and warmer temperatures—and the solid line is retrospective—representing the actual changes in temperature over the course of the month as recorded by the Weather Bureau.

Moore found much to fault in the forecast: no numerical temperatures were listed on the vertical axis, which, in his estimation, “conveniently” left it to the reader to figure out just how hot or cold the weather would be; another complaint was that the “normal” horizontal axis was originally printed as three separate lines, which Moore called “another artifice of the long-range forecaster to avoid being specific;” finally, according to Moore, the long-range forecaster warned of storms and high winds that never materialized.⁸³ Moore based his charges on Bureau forecasting official E. B. Garriott's extensive analysis of long-range forecasting that critiqued the prophets' “storm periods,” two- or three-day intervals in which storms were forecast in some locality. With a net cast so wide—both geographically and temporally—Garriott observed, a storm was bound to occur somewhere and thus verify the forecast. Such a “system of forecasts and verifications,” Garriott wrote, “admits no failures.”⁸⁴ Moore's charts depicted not only the failures but also the distinct boundary between short- and long-term forecasting, implicitly legitimizing the former by explicitly discrediting the latter. Thus Moore's charts represent in visual terms the Bureau's self-fashioning as the institutional embodiment of professional scientific meteorology (see Figure 8).

⁸³ U.S. Weather Bureau, *Report of the Chief of the Weather Bureau, 1903-1904*, xv-xvi.

⁸⁴ Garriott, *Long-Range Weather Forecasts*, 9.



Figure 8: “How ‘Fake’ Weather-Forecasters Fool Farmers,” *New York Times*, December 11, 1904.

The montage beneath the headline positions Willis Moore between an interior photograph of the well-equipped forecaster’s office and the imposing edifice of the Weather Bureau headquarters. Weather prophets, almanac readers, and bird watchers—all discredited by Moore and the Bureau—are depicted, literally and figuratively, on the margins of professional meteorological science.

Not everyone within the Weather Bureau agreed that the war on the long-range weather prophets should be waged in the press. At the 1904 Peoria Convention, Bureau official J. Warren Smith had argued that the Bureau’s “campaign of education” in the popular press and scientific journals was less effective than his method: visiting a local newspaper office with weather maps and long-range forecasts in hand in order to illustrate the greater accuracy and value of short-term forecasts and to persuade the managing editor to discontinue the long-range

predictions.⁸⁵ When Smith conducted these verifications, he did more than expose the ostensible quackery of long-range forecasting; he adhered to the Weather Bureau's instructions to its officials that "they will best service the public interest when they teach the communities they serve the limitations of weather forecasting." The Bureau's logic of forecasting was a conservative one: privileging more accurate short-term forecasts while refusing to speculate about less certain long-term weather conditions. Still, despite Smith's and the Bureau's attempts to reeducate the public in this vein, demand for long-range forecasts remained high. As Smith recounted, a common response from the newspaper editors he tried to convert was that "[t]he public wants something of this kind; the Bureau does not furnish it and these long-range fellows do."⁸⁶

On March 27, 1906, Willis Moore surprised the crowd at a Maritime Association dinner at New York's Waldorf-Astoria with an announcement that the Weather Bureau was about to begin forecasting the weather a month ahead of time. Moore, who had just delivered an address on the history of the weather service, was subjected to ridicule from a man at his table who mocked the Bureau's accuracy record. Moore stood up and retorted with this statement: "The Weather Bureau believes that for the first time in the history of meteorological science it has within its grasp the scientific basis of long-range weather forecasting—that is forecasting of the character of the month to come." The details were still to be worked out, and the forecasting system was months from operational, Moore allowed, but the Bureau had committed itself to an experimental program of monthly forecasts based on new sources of meteorological data: upper-air kite and balloon observations, isobaric charts spanning the northern hemisphere (based on

⁸⁵ U.S. Weather Bureau, *Proceedings of Peoria Convention*, 43, 249. For examples of other efforts by Bureau personnel to conduct verifications in person, see U.S. Weather Bureau, *Proceedings of Peoria Convention*, 44; U.S. Weather Bureau, *Proceedings of Omaha Convention*, 159.

⁸⁶ U.S. Weather Bureau, *Report of the Chief of the Weather Bureau, 1903-1904*, xiii; U.S. Weather Bureau, *Proceedings of Peoria Convention*, 248.

telegraphed reports from an extensive network of stations), and possibly data from solar radiation studies. Observations of temperature, moisture, pressure, and wind direction and velocity at an altitude of one mile high were telegraphed from the Mt. Weather, Virginia meteorological research complex to Washington daily beginning in June 1907.⁸⁷ Thus began the Bureau's shift from ground to air, away from its empirical focus on tracking observable surface conditions and toward exploration of the heavens for the secret to long-range forecasts.

Moore's announcement surprised the Waldorf-Astoria crowd in 1906—and immediately drew a storm of public skepticism—but behind the bluster of the Bureau's anti-prophecy campaign was a history of quiet experimentation with the theory and practice of long-range forecasting dating back to the last years of the nineteenth century.⁸⁸ Public demand for long-term predictions had long existed, and professional and amateur meteorologists had long sought a method of accurate long-range forecasting.⁸⁹ At the 1898 Omaha Convention, Bureau official Patrick Connor of Kansas City, Missouri—a neighbor of long-range prophets W. T. Foster and Rev. Israel Hicks—explained his occasional and partial success in long-range forecasting based on F. H. Bigelow's theory of solar magnetism. His colleague B. S. Pague of Portland, Oregon was more successful, having spent the last two years regularly making forecasts for three to seven days that were used by farmers, fruit growers, boatmen, and shippers. Pague attributed his success to the geography of his north Pacific region and the “distinct and well-defined

⁸⁷ “Forecasts for a Month,” *New York Times*, March 28, 1906; “Long-Range Weather Forecast,” *Macon (GA) Daily Telegraph*, March 30, 1906; “Rival of Hicks,” *Aberdeen (SD) Daily News*, April 5, 1906; U.S. Weather Bureau, *Report of the Chief of the Weather Bureau, 1907-1908* (Washington, DC: Government Printing Office, 1909), xiv-xv.

⁸⁸ In response to Moore's Waldorf announcement, the *New York World* noted, “Prof. Moore has the proud distinction of having missed the weather more often than any man of his inches. His guesses have kept the entire nation guessing.” “Foster's Weather Bulletin,” *Los Angeles Times*, April 16, 1906. For criticism of the Bureau's long-range forecasting project, see also “Long-Range Weather Forecast,” *Macon (GA) Daily Telegraph*, March 30, 1906; Frank Waldo, “Long-Range Prediction Impossible,” *Boston Daily Globe*, May 26, 1907; “Next Year's Weather,” *Chicago Daily Tribune*, January 27, 1907.

⁸⁹ “Forecasting the Weather,” *Omaha World Herald*, September 25, 1892; Moore, “Weather Forecasting,” *Forum* 25:351.

movements” of high and low pressure areas across his region. Later in the convention, A. B. Crane of Pensacola, Florida echoed the Bureau’s skepticism regarding the feasibility and value of long-range forecasts but allowed that local periodicities—repetitions in weather patterns over time for a particular region—occasionally made long-range predictions possible. But such a method was hit or miss, Crane stressed, and according to his deterministic vision of science, meteorology was not yet sufficiently developed to enable reliable long-range forecasts: “Science is defined as consisting simply of the systematic arrangement of facts, and more facts are needed before the artist, however energetic or skillful, can unfold that intricate study, long-range weather predictions.”⁹⁰

The science and art of long-range forecasting were combined in perhaps the most popular theory of long-range forecasting at the turn of the century—solar radiation—which drew upon traditional understandings of planetary meteorology as well as modern scientific study of astrophysics. The logic behind all sun spot and solar radiation theories was one of correlation: terrestrial conditions and solar conditions were interrelated, so analyzing periodicity in sun-spot cycles would enable long-range forecasting of a variety of terrestrial phenomena. The discovery of sun-spot periodicity drew great enthusiasm from scientific and popular publications, and some envisioned a kind of meteorological utopia in which sun-spot cycles would enable forecasting of much more than temperature and precipitation: “[m]agnetic and electrical conditions (including the aurora borealis), ... barometric pressure, humidity, the winds, cloudiness, ... depth and quantity of discharge of rivers, retreat and advance of glaciers, number of shipwrecks, bank

⁹⁰ U.S. Weather Bureau, *Proceedings of Omaha Convention*, 43-48, 157-60.

failures and commercial crises, the crops, prices of grain, famines, wars, and even flights of butterflies.”⁹¹

The Weather Bureau’s initial vision of long-range forecasting was far more modest, and, compared to its strident critique of vernacular weather prophets in the early years of the twentieth century, its entry into the long-range forecasting business was surprisingly quiet. The Bureau first published general weekly, not monthly, forecasts on an experimental basis in April, May, and June 1908 and then made them a regular feature beginning in late March 1910, after the success of special forecasts like the one for Sunday, February 13, 1910:

During the present week a general storm, followed by a cold wave, will cross the United States. The center of this storm will appear over the Pacific States within the next two days, cross the Rockies, Plains States, and central valleys during the middle days of the week, and reach the Atlantic seaboard by Friday. The cold wave promises to be rather severe. It will overspread the North Pacific States by Tuesday morning, the middle and northern Plains States and Central Valleys by Thursday, and reach the Atlantic seaboard by Friday or Friday night.⁹²

Public reception of the Bureau’s forecast of this blizzard was far more favorable than it had been in March 1888. On February 17, an Oklahoma newspaper celebrated “[t]he remarkable accuracy” of the Bureau’s long-range forecast and deemed it “the story of a prediction and its fulfillment.”⁹³

But despite these accolades, the Bureau’s predictions for the week ahead were not substantively different from the long-range prophecies Moore and his colleagues had so fervently denounced six years earlier. As an assessment of long-range weather forecasting observed in 1926, the Bureau’s weekly “weather outlook” was not a precise forecast but rather “a broad

⁹¹ C. G. Abbot, “The relation of the sun-spot cycle to meteorology,” *Monthly Weather Review* 30, no. 4 (1902): 178-81, quoted in Garriott, *Long-Range Weather Forecasts*, 45.

⁹² U.S. Weather Bureau, *Report of the Chief of the Weather Bureau, 1907-1908*, xiv; Hughes, *A Century of Weather Service*, 39-41; U.S. Weather Bureau, *Report of the Chief of the Weather Bureau, 1909-1910* (Washington, DC: Government Printing Office, 1911), 16.

⁹³ Quoted in U.S. Weather Bureau, *Report of the Chief of the Weather Bureau, 1909-1910*, 16.

generalized statement.”⁹⁴ A sample outlook for the North and Middle Atlantic states predicted a “[p]eriod of snows over North and rains and snows over South portion about middle of week; temperatures near or below normal.”⁹⁵ The Bureau’s weekly outlook was characterized by the same temporal and geographic uncertainty the Bureau had formerly critiqued in the vague “storm periods” of long-range weather forecasters.⁹⁶

Under Charles F. Marvin, Willis Moore’s successor as Weather Bureau Chief, the Bureau once again publicly denounced long-range weather forecasting as false and unscientific.⁹⁷ The Bureau’s own investigations into the application of solar radiation and sun-spot periodicity to long-range forecasts, buttressed by leading opinions within the international meteorological community, found no definitive causal link between solar conditions and terrestrial climate and thereby classified the sun as part of the unscientific realm of planetary meteorology and astrology. The moon, the planets, and now sun spots and solar radiation were merely “picturesque frameworks upon which to display weather forecasts for sale,” the Bureau declared in a well-publicized bulletin in 1916.⁹⁸

⁹⁴ Robert DeC. Ward, “The Present Status of Long-Range Weather Forecasting,” *Proceedings of the American Philosophical Society* 65, no. 1 (1926): 6.

⁹⁵ *Ibid.*

⁹⁶ Garriott, *Long-Range Weather Forecasts*, 8.

⁹⁷ Moore’s tenure as Weather Bureau Chief ended in political disgrace. He weathered public allegations of improper spending, critiques of his management style from within the Bureau, a congressional investigation of the Bureau in 1912, and President Wilson’s rejection of his requests for increased appropriations in 1912. Moore’s ultimate undoing, however, came as a result of his overt political maneuvering for the office of Secretary of Agriculture. Congressman Theron Akin of New York authored a resolution that called for Moore to “at the proper time receive the toe-end of Woodrow Wilson’s copper-toed boot and be relegated to the political scrap heap.” HR 858, 62d Cong., 3d sess. (February 21, 1913), 5. Akin’s wish came to fruition when Wilson dismissed Moore on April 16, 1913, well before Moore’s resignation was scheduled to go into effect on July 31. Whitnah, *A History of the United States Weather Bureau*, 115-30; “Akin Attacks Chief Moore,” *New York Times*, February 22, 1913.

⁹⁸ “Forecasting of Weather is ‘Faked,’” *Idaho Daily Statesman*, March 30, 1916; “Warning Against Forecasters,” *Aberdeen (SD) Daily News*, March 30, 1916; “Denies Credit to Prophets,” *Los Angeles Times*, April 9, 1916; “Fake Weather Prophets and Long Prognostications Taboo,” *Columbus (GA) Ledger*, April 19, 1916; “Long-Range Weather Forecasts,” *Scientific Monthly*, May 1916, 519-20. Quotation in “Forecasting of Weather is ‘Faked,’” *Idaho Daily Statesman*, March 30, 1916.

Although solar radiation theories passed in and out of vogue and debates over fraudulent long-range forecasting waxed and waned in the first third of the twentieth century, the scope of the Bureau's weekly forecast remained essentially unchanged until 1940, when the Bureau introduced a five-day forecast that was more specific than the previous weekly outlook, and then in 1950 published thirty-day outlooks for the first time. The Bureau was able to refine its long-range forecasting as a result of three developments in twentieth-century meteorology: the emergence of Jacob Bjerknes's front theory in 1937, intensified long-range forecasting research during World War II, and innovations in mathematical atmospheric modeling in the mid-1960s.⁹⁹ But despite these advances, the problem of the long-range forecast—called a “will-o’-the-wisp” in the late nineteenth century and an “academic problem” in the early twentieth century—persisted, and Moore's war on the weather prophets echoed throughout the twentieth century, as government, academic, and private long-range forecasters squared off time and again in debates over the accuracy and authenticity of long-range forecasting.¹⁰⁰ At the same time, public demand for seasonal and even yearly forecasts persisted, and the promise of the long-range prediction bordered on an industrial utopia.

In 1904, at the height of Moore's anti-prophecy campaign, Professor C. M. Woodward concluded his refutation of weather prophet John H. Tice's forecasting theory of planetary equinoxes by declaring that his aim was to “help clear the way for the coming of the true science of meteorology which the future certainly has in store for us.”¹⁰¹ In his turn-of-the-century

⁹⁹ Hughes, *A Century of Weather Service*, 39-41, 69, 71, 138. On the history of twentieth-century meteorology, see Robert Friedman, *Appropriating the Weather: Vilhelm Bjerknes and the Construction of a Modern Meteorology* (Ithaca: Cornell University Press, 1989); Frederik Nebeker, *Calculating the Weather: Meteorology in the Twentieth Century* (San Diego: Academic Press, 1995); Kristine C. Harper, *Weather by the Numbers: The Genesis of Modern Meteorology* (Cambridge, MA: MIT Press, 2008).

¹⁰⁰ “Forecasting the Weather,” *Omaha World Herald*, September 25, 1892; Charles Fitzhugh Talman, “Weather Forecasters Take On New Duties,” *New York Times*, November 21, 1926.

¹⁰¹ Prof. C. M. Woodward, “The Planetary Equinoxes—An Examination of Mr. Tice's Theory,” in Garriott, *Long-Range Weather Forecasts*, 31.

campaign against long-range weather prophecy, Willis Moore did exactly that—“clear the way” for modern meteorology. The Weather Bureau’s entry into long-range forecasting signaled that its “true science of meteorology,” based on data from the upper atmosphere and the northern hemisphere, was a more uncertain and probabilistic enterprise than was suggested by the empiricism of late-nineteenth-century meteorology, which based its short-term predictions on geographical projections of observable surface conditions.

Willis Moore’s and the Weather Bureau’s work to define a modern professional meteorological science at the turn of the twentieth century at once discredited and acknowledged the persistence and cultural authority of vernacular long-range weather prophecy. Moore’s work, and the previous work of the U.S. Army Signal Service between 1870 and 1891, to build an institutional “temple of reputation” for the national weather service was necessary not only because the weather service was one of many fledgling institutions professionalizing in the late nineteenth century but also because the very question of whether the weather was predictable at all was posed to the public on a daily basis in the form of the published “probabilities.”

As I will illustrate in the second half of “Propheteering,” the “probabilities” and economic consequences of the next day’s weather and the next harvest’s yield commanded such public attention at the same time that the “probabilities” of the future animated the literary and cultural marketplace. As we shall see in the next chapter, Edward Bellamy’s literary work explored both the promise and peril of foresight well before he published what became the most famous prophecy of the nineteenth century, *Looking Backward*.

Chapter 5: Bellamy's Futures

Edward Bellamy's utopian novel *Looking Backward* was published in 1888 and became an overnight sensation. Often cited as the second best-selling nineteenth-century American novel (after Harriet Beecher Stowe's *Uncle Tom's Cabin*), *Looking Backward* inspired a sudden outpouring of literary responses, imitations, and critiques. Bellamy's romance, which chronicled the adventures of Julian West, a wealthy Bostonian who falls asleep in 1888 and wakes up in the year 2000, had an enormous influence on the American popular and political imagination in the 1890s and beyond, as well as a well-documented international influence.¹ Bellamy's best-selling prophecy of a cooperative commonwealth in the year 2000, basically a socialist program that he termed "nationalism," had instant and widespread appeal. *Looking Backward* inspired the formation of several hundred Nationalist clubs by 1891 that discussed and disseminated Bellamy's vision of a nationalized, rationalized industrial utopia. And the Nationalist movement ultimately brought Bellamy's principles and proponents into the sphere of Populist politics in the 1890s.

Literary critics and historians are fond of citing Edward Bellamy's own characterization of *Looking Backward* as "intended, in all seriousness, as a forecast, in accordance with the principles of evolution, of the next stage in the industrial and social development of humanity," but they have not acknowledged just how seriously Bellamy took the themes of prediction and foreknowledge long before he began work on *Looking Backward*, what quickly became the most famous prophecy of the late nineteenth century after its publication in 1888.² Bellamy's first

¹ On Bellamy's international reception, see Sylvia E. Bowman, *Edward Bellamy Abroad: An American Prophet's Influence* (New York: Twayne, 1962); Carl J. Guarneri, "An American Utopia and Its Global Audiences: Transnational Perspectives on *Looking Backward*," *Utopian Studies* 19, no. 2 (2008): 147-87.

² Edward Bellamy, *Looking Backward, 2000-1887* (1888; reprinted New York: Penguin, 1960), 220. This quotation is from Bellamy's postscript to the second edition of *Looking Backward*.

journal entry, which he made in July 1871 at the age of twenty-one, reveals a young man gazing far into his own future and watching an elderly Edward Bellamy looking backward over his own life: ““Even as I sit here in the study . . . there comes before my dreaming eyes a vision of an old man who looks like me holding in shrivelled hands these pages grown yellow with the lapse of many years . . .””³ Bellamy’s characterization of himself in this first journal entry was indeed prescient: from the start of his literary career in the early 1870s to the publication of *Looking Backward* in 1888 and the explosion of the Nationalist movement immediately thereafter, he remained fixated on the future. The “Great American Prophet,” as John Dewey later called Bellamy, got his start at a very young age.⁴

In this chapter I demonstrate that Edward Bellamy’s work as a writer of imaginative fiction was indeed a labor of prospection. His literary production from the 1870s and 1880s reveals a writer grappling with not only the broader economic and cultural crisis of certainty I describe in chapter 1 but also a personal intellectual and spiritual crisis of certainty. In his journal Bellamy yearned for ““that heavenly quality of constancy. Heavenly, I call it, because it is so oddly ill-suited in this world where there is so much change in circumstances and characters.””⁵ I consider Bellamy’s writing from this period to be a series of literary experiments devoted to three primary aims: investigating the psychological dimensions of the predictive imagination, exploring the problem of uncertainty on both an individual and a collective level, and ultimately searching for a way to insulate the individual and society against an unpredictable future and approximate his elusive “heavenly quality of constancy.”

³ Edward Bellamy Papers, quoted in Thomas A. Sancton, “Looking Inward: Edward Bellamy’s Spiritual Crisis,” *American Quarterly* 25, no. 5 (1973): 539.

⁴ John Dewey, “The Great American Prophet,” *Common Sense* 3, no. 4 (1934): 6-7.

⁵ Bellamy Papers, as quoted in Sancton, “Looking Inward: Edward Bellamy’s Spiritual Crisis,” 540.

This chapter and the next constitute a literary history of Bellamy's work from the publication of his first short story in 1875 to the publication of *Looking Backward* in 1888 that is based on Bellamy's published short stories and novels as well as his notebooks, letters, and unpublished manuscripts. Historians and literary critics—with a few recent exceptions—have paid such singular attention to the internationally acclaimed *Looking Backward* that Bellamy's earlier literary production still remains unknown to many. I echo the recent laments of literary critics that Bellamy's short stories and manuscripts have been unfortunately neglected in favor of a single-minded focus on *Looking Backward* and a narrow definition of Bellamy as a social critic and utopian writer.⁶ Following literary critic Franklin Rosemont, I emphasize Bellamy's identity as a writer of imaginative literature, and more specifically, a writer of romances. And as Rosemont points out, Bellamy considered himself primarily a “romancer,” not a utopian social reformer.⁷ By tracing the evolution of Bellamy's predictive imagination through his earlier texts, I underscore the continuity between Bellamy as romancer and Bellamy as utopian. Rather than distinguishing between *Looking Backward* and Bellamy's earlier “minor work,” as critics commonly have, I consider his novels, short stories, and manuscripts of equal import in understanding the relationship between his conception of the predictive imagination and his utopianism.

In this section I argue that Bellamy's utopianism originated in his earlier literary experiments, in what Bellamy called the “psychologic studies and speculations” of his early short fiction, in his keen interest in spiritualism and occult ways of knowing, and in his lifelong

⁶ For recent critiques of the widespread perception of Bellamy as a “one-book wonder,” see Rosemont, “Bellamy's Radicalism Reclaimed,” 147; Franklin Rosemont, introduction to *Apparitions of Things to Come: Tales of Mystery and Imagination* (Chicago: Charles H. Kerr Publishing Company, 1990), 14.

⁷ Franklin Rosemont, “Bellamy's Radicalism Reclaimed,” in *Looking Backward, 1888-1888: Essays on Edward Bellamy*, ed. Daphne Patai (Amherst: University of Massachusetts Press, 1988), 148. For a contemporary assessment of Bellamy the romancer, see William Dean Howells's introduction to Bellamy's *The Blindman's World, and Other Stories* (Boston: Houghton, Mifflin, 1898), in which Howells asserts that Bellamy's “romantic imagination” is second only to Hawthorne's (xiii).

fascination with the predictive imagination.⁸ Simply put, Bellamyite politics had their roots in prophecy. What follows is a literary history of Bellamy's experiments with the possibilities and limitations of the predictive imagination that illustrates how Bellamy worked out in his earlier writings the beginnings of *Looking Backward's* utopian vision of economic certainty.⁹

Bellamy's concern with the future emerged from his biographical experience, his intellectual and religious convictions in the wake of his renouncing his Calvinist upbringing, and his literary aesthetic. Born in Chicopee Falls, Massachusetts on March 26, 1850, Bellamy witnessed first-hand the dramatic economic and social transformations wrought by the industrialization of the countryside. Chicopee saw its most intense changes from an agrarian to an industrial economy between 1820 and Bellamy's birth in 1850. As economic historian Vera Shlakman has observed,

. . . there was no smooth economic progression from stage to stage. . . . The few farmers and the foundrymen of the neighborhood looked upon a kind of industrial activity of which they have never seen the like. . . . Rows of tenements arose alongside the [cotton] mill . . . looking as though a section of a distant city had been lifted and transplanted bodily to Chicopee Falls. . . . The village was now the home of a corporation.¹⁰

The Chicopee River powered Chicopee's first cotton mills in the 1810s, and by the late 1880s, the cotton mills boasted a larger workforce than any other Chicopee industry. Alongside the cotton mills the Ames Manufacturing Company turned out swords, bayonets, and other

⁸ Edward Bellamy to Horace Scudder, 25 August 25 1890, as quoted in Bowman, *The Year 2000*, 44.

⁹ My historiographical aim is not to depoliticize Bellamy's social criticism. To be sure, Bellamy was profoundly affected by the social questions of his day, including the poverty and deplorable working conditions facing industrial laborers and the escalating conflict and violence between labor and capital. And he wrote many a newspaper commentary on topics including railroad workers, woman suffrage, childhood education, and so on. But Bellamy considered himself primarily a "romancer," not a utopian social reformer. I aim to show how the utopian vision that inspired Bellamyite politics grew out of Bellamy's writerly concern with the predictive imagination.

¹⁰ Vera Shlakman, *Economic History of a Factory Town: A Study of Chicopee, Massachusetts*, (Northampton, MA: Smith College Studies in History, vol. 20, nos. 1-4 (Oct. 1934-July 1935), 25, 48, quoted in Joseph Schiffman, introduction to *Selected Writings on Religion and Society*, ed. Joseph Schiffman (Westport, CT: Greenwood Press, 1974 [1955]), xiv.

armaments, the Overman Wheel Company produced bicycles, and other companies made needlecraft machines, agricultural tools, and hunting rifles.¹¹ And the federal armory in the nearby city of Springfield—where some of the female mill workers’ fathers worked—circulated workers, their tools, and their technical expertise through industrial Chicopee.¹² Edward Bellamy grew up in close proximity to not only bustling cotton mills and bleak factory housing but also the impressive homes of Chicopee’s wealthy industrialists.¹³ Such a vantage point, perched between labor and capital, clearly shaped Bellamy’s own ambivalence toward technology and industrial change.

Although historians have long considered Bellamy’s celebrated vision of the year 2000 a technocracy, Bellamy himself hardly embraced the ideology of American progress powered by technical innovation and industrial development.¹⁴ On an extended stay in Germany with his cousin in 1868-69, the teenaged Bellamy suddenly saw the social costs of rapid industrialization in sharp relief. As he later recalled,

Although it had required the sights of Europe to startle me to a vivid realization of the inferno of poverty beneath our civilization, my eyes having once been opened, I had now no difficulty in recognizing in America, and even in my own comparatively prosperous village, the same conditions in course of progressive development.¹⁵

¹¹ Sylvia Bowman, *Edward Bellamy* (Boston: Twayne Publishers, 1986), 1.

¹² Milton Cantor, “The Backward Look of Bellamy’s Socialism,” in *Looking Backward, 1888-1888: Essays on Edward Bellamy*, ed. Daphne Patai, 21-26, quotation on 22. On the role of the federal armories in Harpers Ferry and Springfield as innovators of an American mass-production system based on interchangeable parts, see Merritt Roe Smith, *Harpers Ferry Armory and the New Technology: The Challenge of Change* (Ithaca: Cornell University Press, 1977).

¹³ Bowman, *Edward Bellamy*, 1.

¹⁴ For a sustained analysis of the role of technology in the work of Edward Bellamy, see Howard P. Segal, *Technological Utopianism in American Culture* (Chicago: University of Chicago Press, 1985); Howard P. Segal, “Bellamy and Technology: Reconciling Centralization and Decentralization,” in Patai, ed., *Looking Backward, 1888-1888: Essays on Edward Bellamy*, 91-105; Howard P. Segal, *Future Imperfect: The Mixed Blessings of Technology in America* (Amherst: University of Massachusetts Press, 1994). For an interpretation of Bellamy’s utopian society as a technocracy, see John F. Kasson, *Civilizing the Machine: Technology and Republican Values in America, 1776-1900* (New York: Penguin Books, 1976), chap. 5.

¹⁵ Edward Bellamy, “How I Wrote ‘Looking Backward,’” *Ladies Home Journal*, April 1894, reprinted in *Edward Bellamy Speaks Again!* (Kansas City, MO: Peerage Press, 1937), 218.

During his tenure as editorialist and reviewer for the *Springfield Union* (1872-77) and then as co-founder and co-editor of the *Springfield Daily News* (1880-84), Bellamy pointed to the harsh conditions faced by industrial laborers.¹⁶ At age twenty-two Bellamy made his first public speaking appearances as part of the Chicopee Village Lyceum, lecturing in his second appearance on “The Barbarism of Society” in 1872 and railing against the imposition of wage slavery on a subjugated labor force.¹⁷ And the Bellamy who confessed in his journals to possessing a ““deep-seated aversion to change”” created in his 1884 novel *Miss Ludington’s Sister* a title character who, desperately clinging to her notion of a past frozen in time, builds a memorial to preindustrial Massachusetts.¹⁸ When Miss Ludington inherits a Long Island farm, she builds an exact replica of her childhood village and family home absent the telltale signs of commercialism and industrial development—what her neighbors had called ““the rage for improvement.””¹⁹ In erasing the railroad, shops and storefronts, and new houses from her carefully restored village landscape, Miss Ludington creates a permanent pastoral, a place without a future.²⁰

Upon becoming a father—to son Paul in 1884 and daughter Marion in 1886—Bellamy became newly troubled by the limitations of his own predictive imagination. As friend and literary mentor William Dean Howells recalled after Bellamy succumbed to tuberculosis in 1898, Bellamy worried openly about the uncertain future of his children and indeed everyone’s children, lamenting to Howells that he was powerless to protect his own children from the

¹⁶ Rosemont, “Bellamy’s Radicalism Reclaimed,” 159; Schiffman, introduction to *Selected Writings on Religion and Society*, xiv-xv.

¹⁷ Bowman, *Edward Bellamy*, 8-9; Schiffman, introduction to *Selected Writings on Religion and Society*, xiv-xv.

¹⁸ Quoted in Bowman, *Edward Bellamy*, 4.

¹⁹ Edward Bellamy, *Miss Ludington’s Sister: A Romance of Immortality* (Upper Saddle River, NJ: Literature House, 1970 [1884]), 9-17, quotation on 10.

²⁰ For the most important account of the pastoral tradition in American literature, see Leo Marx, *The Machine in the Garden: Technology and the Pastoral Ideal in America* (New York: Oxford University Press, 1967).

possibility of penury. As Howells wrote in his 1898 introduction to Bellamy's *The Blindman's World and Other Stories*, a posthumous short story collection, Bellamy

told me that he had come to think of our hopeless conditions suddenly, one day, in looking at his own children, and reflecting that he could not place them beyond the chance of want by any industry or forecast or providence; and that the status meant the same impossibility for others which it meant for him.²¹

Indeed, Bellamy widely acknowledged that parenthood set his sights firmly on the future. The birth of one's children, Bellamy wrote in the unfinished and thinly veiled autobiographical novel *Eliot Carson*, demonstrate to the father "his oneness with posterity."²² Bellamy recalled in an 1894 essay titled "How I Came to Write 'Looking Backward'" that it was the birth of his children that directly inspired him to consider seriously the socioeconomic conditions facing "the future of [the] race" and to grapple with the problem all parents face, namely, "how to provide for and safeguard their [children's] future" after their own death.²³

Just as watching the forces of industrialization play out in Chicopee and the nearby city of Springfield and watching his children play gave Bellamy reason to be especially concerned about what the future might hold, Bellamy's personal spiritual crisis made him especially concerned about the dangers of living a religious life rooted in the past. As scholars have commonly observed, religion was at the core of Bellamy's childhood experience: his father Rufus was a popular and kindly Baptist minister who in 1874 took in a needy child (Emma Sanderson, Edward Bellamy's future wife), and his mother Maria was a formal and stern woman

²¹ William Dean Howells, "Biographical Sketch," in *The Blindman's World, and Other Stories* (Boston: Houghton Mifflin, 1898), xi-xii.

²² Edward Bellamy, "Notebook VII," 189?, 16-17, quoted in Bowman, *Edward Bellamy*, 15. Bellamy worked on his Eliot Carson story, which had a variety of slightly different titles, on and off for almost twenty years. Bowman, *The Year 2000*, 42.

²³ Bellamy, "How I Wrote 'Looking Backward,'" 222. Bellamy's wife Emma Sanderson Bellamy later recalled that "the experience of parenthood moved Mr. Bellamy to the depths" and confirmed that his concern for their children's future oriented him toward social criticism and reform and directly inspired the writing of *Looking Backward* and *Equality*. Emma Bellamy, "Edward Bellamy As I Knew Him," undated manuscript, series 5, drawer 1, folder 2, Edward Bellamy Memorial Archives, Edward Bellamy Homestead, Chicopee, MA.

who adhered to a rigidly Puritanical way of life.²⁴ Every Sunday, Bellamy and his three brothers were required to attend two church services in addition to their Sunday religious instruction.²⁵ Although Bellamy's father was less rigid both as a parent and as a minister—he did not wholeheartedly subscribe to the Calvinist dogma of eternal damnation—it was Bellamy's mother who exerted the greater formative influence on her son. And almost all of Maria's conversations with Edward focused on religion and spirituality.²⁶ As Bellamy's principal biographer, Sylvia Bowman, noted, Bellamy—who had a masterful command of Biblical quotations—later recalled the “Calvinistic indoctrination” of his youth.²⁷ In the 1870s Bellamy renounced the religious orthodoxy of his childhood, rejecting most vehemently what he deemed a crippling Calvinist guilt over past sins. The title of Bellamy's second novel, *Dr. Heidenhoff's Process* (serialized in 1878-79 in the *Springfield Union* and published in its entirety in 1880), refers to an imaginary memory-erasing process (that one twentieth-century critic has likened to electroshock therapy), a process that is necessary to counteract the power of “[r]emembered sin . . . the most utterly diabolical influence in the universe.”²⁸

Bellamy's own religious philosophy, which he outlined as a twenty-three-year-old in the essay “Religion of Solidarity” (unpublished during his lifetime), turned away from the “diabolical influence” of sins past in favor of what he saw as “the glories of future ages.”²⁹ Bellamy's philosophical essay, what one critic has labeled “his basic treatise on anti-individualism,” elevates the ideal of solidarity as the key to a universal, eternal, transcendent

²⁴ Bowman, *Edward Bellamy*, 2; Bowman, *The Year 2000*, 66.

²⁵ Bowman, *Edward Bellamy*, 3.

²⁶ Schiffman, introduction to *Selected Writings on Religion and Society*, xi.

²⁷ Bowman, *The Year 2000*, 24; Bowman, *Edward Bellamy*, 3-4.

²⁸ Schiffman, introduction to *Selected Writings on Religion and Society*, xxiii; Edward Bellamy, *Dr. Heidenhoff's Process* (New York: D. Appleton, 1880), 117-20.

²⁹ Edward Bellamy, “The Religion of Solidarity,” in *Selected Writings on Religion and Society*, 5.

state of being.³⁰ Implicit in Bellamy's new brand of faith was a faith in the future, an Emersonian conviction that "man's spiritual tendency toward universal experience was to find satisfaction in future development of his potential."³¹ Another facet of Bellamy's religious futurism was his appreciation of the millennial prophecy that found something of a revival in the late nineteenth century (one element of religious orthodoxy that Bellamy did not renounce).³² Indeed, Bellamy, whom literary critic Joseph Schiffman has characterized as "an apocalyptic progressive," professed a profound admiration for the Biblical prophets who foresaw a time—sometimes the aftermath of a cataclysmic event, sometimes not—of universal peace, comfort, and virtue.³³ And Bellamy would later couch his own description of Nationalism (his brand of democratic Christian socialism) in millennialist rhetoric, noting in an 1891 essay that "[t]he world is on the verge of the realization of the vision of universal peace, love, and justices, which the seers and poets of all ages have more or less dimly foreseen."³⁴

The futurism we find in Bellamy's religious thought found even stronger expression in his literary production. Bellamy's novels, short stories, and unpublished manuscripts and notebooks reveal his deep-seated concern with the future, a future Bellamy rendered at times predictable and at others unpredictable. In addition to his thematic futurism, Bellamy also espoused a literary aesthetic based on the future projections of hypothetical situations, characterizing his pre-*Looking Backward* work thusly: "The stories that I had written before 'Looking Backward' were largely of one sort, namely the working out of problems, that is to say,

³⁰ Sancton, "Looking Inward: Edward Bellamy's Spiritual Crisis," 542.

³¹ Schiffman, introduction to *Selected Writings on Religion and Society*, xvii.

³² *Ibid.*, xxxiii. For an account of an increasingly pessimistic late-nineteenth-century premillennialism and a burgeoning prophecy culture, see Boyer, *When Time Shall Be No More*, chap. 3.

³³ Edward Bellamy, *Talks on Nationalism* (Chicago: Peerage Press, 1938), 66-67, quoted in Schiffman, introduction to *Selected Writings on Religion and Society*, xxxiii-xxxiv.

³⁴ *New Nation* 1 (1891), 144, quoted in Edward K. Spann, *Brotherly Tomorrows: Movements for a Cooperative Society in America, 1820-1920* (New York: Columbia University Press, 1989), 197.

attempts to trace the logical consequences of certain assumed conditions.”³⁵ One of Bellamy’s characters in the short story “Two Days Solitary Imprisonment” (1878), a man confined to his house with an illness, mimics Bellamy’s method of playing forward a given situation:

[He] had an unprofitable habit of taking every incident of possible embarrassment or danger that occurred to his mind as the suggestion for imaginary situations of inconvenience or peril, which he would then work out, fancying how he would feel and what he would do, with the utmost elaboration, and often with really more nervous excitement than he would be likely to experience if the events supposed should really occur.³⁶

Yielding to his predictive literary imagination was in fact a rather profitable habit for Bellamy the romancer, who planned, but did not write, numerous other stories that hinged on the possibility of a predictable future, as evidenced by the list of story ideas he kept in a series of notebooks. A plot outline entitled “Might-Have-Been-Land” centers on the gap between present and future, between one’s “real and potential self.” Bellamy intended the narrator of “Might-Have-Been-Land” to predict incorrectly—but with complete confidence—a particular event, and to become so dismayed at his inaccurate predictive imagination that his soul splits in two and “the balance of [his] nature goes over to the potential world and [he goes] to Might-Have-Been-Land.”³⁷ Another plot outline referred to the “Soul Prophecy idea” in which characters could swap identities in order to make a present problem disappear, thereby ensuring a more hopeful

³⁵ Bellamy, “How I Wrote ‘Looking Backward,’” 224. As Sylvia Bowman and other critics have noted, Bellamy’s novels and short stories were the vehicles for his experimentation with hypothetical situations, allowing him to play with ideas and attempt to solve various problems of circumstance. Bellamy based his fiction not on his observations of daily life but rather on the running list of hypothetical situations and story ideas he kept in a series of notebooks. The primacy of the situation in Bellamy’s fiction resulted in limited character development, spare plots, and expository dialogue—characteristics that have historically resulted in a critical perception of Bellamy as less literary than other canonical nineteenth-century authors. Bowman, *The Year 2000*, 59-60; John L. Thomas, introduction to *Looking Backward, 2000-1887* (Cambridge: Belknap Press, 1967 [1888]), 23-24.

³⁶ Edward Bellamy, “Two Days’ Solitary Imprisonment,” in *The Blindman’s World, and Other Stories*, 106.

³⁷ Reprinted in Rosemont, ed., *Apparitions of Things to Come*, 173. Cultural historian John Kasson ascribes considerable significance—I think too much—to this particular plot out of hundreds of plot outlines in Bellamy’s notebooks when he pronounces “Might-Have-Been-Land” emblematic of a broader late-nineteenth-century republicanism. Kasson, *Civilizing the Machine*, 233.

future.³⁸ Bellamy also planned a story centered around a time capsule and a visitor from one hundred years hence whom he described as a “broken down fellow who lives and dreams in the future. Bellamy intended to describe the future in what he termed ““different chapters”” and to explore various social and economic implications of foresight. As Bellamy’s biographer Sylvia Bowman notes, this story is conceptually very similar to “The Blindman’s World” (1886), which I discuss at length in the next chapter.³⁹

Bellamy also sketched out the plot for a futuristic eugenicist fantasy in which a state-controlled system of marriage and reproduction ensured that young men and women would not be subject to the fickle winds of uncertain courtships but rather would enter into marriage absolutely certain of their mutual compatibility. According to this scheme of “an enlightened sort of stock raising,” as Bellamy termed it, young men and women would undergo a psychological examination that assessed their temperaments, and then find themselves classified and color-coded accordingly. (A person with a bilious temperament, for example, would wear a yellow badge and be permitted to marry a lymphatic lover designated by his or her white badge.) The short-term value of this color-coded classification scheme, which Bellamy spelled out in some detail, lay in its efficient management of marriage: anyone looking for love would find the pool of prospects statistically narrowed by anywhere from 80 to 98 percent. The long-term value of state-controlled romance, as Bellamy declared at the outset, was “the improvement of the species.”⁴⁰ It is important to note that Bellamy’s interest in the relative predictability of human reproduction ranged beyond this unexecuted short story plot. Bellamy, who termed Darwin’s evolutionary theory ““the most original and noteworthy philosophic idea of the nineteenth

³⁸ Reprinted in Rosemont, ed., *Apparitions of Things to Come*, 175.

³⁹ Edward Bellamy, notebooks, Bellamy Papers, Houghton Library, quoted in Bowman, *The Year 2000*, 110.

⁴⁰ Edward Bellamy, “Plots for Stories #1,” reprinted in *Revisiting the Legacy of Edward Bellamy (1850-1898), American Author and Social Reformer: Uncollected and Unpublished Writings, Scholarly Perspectives for a New Millennium*, ed. Toby Widdicombe and Herman S. Preiser (Lewiston, NY: Edwin Mellen Press, 2002), 234.

century,”⁴¹ wrote approvingly of stirpiculture and farmers’ scientific stock breeding in *Springfield Union* editorials in the early 1870s.⁴²

“Time-Buying Business,” to my mind the most interesting of Bellamy’s unexecuted plots about predictability, centers on the agency established by a time speculator who buys unwanted bits of time (e.g., hours from prison sentences, hours that hungry people have to wait until dinner) from those who wish time to pass swiftly and sells them at significant profit to those who wish time to slow down (e.g., lovers, generally contented people).⁴³ Bellamy never wrote this story, but his time speculator would have been quite wealthy: he never would have confronted an unpredictable market like grain or cotton speculators, for example, since his commodity’s value to prisoners, lovers, and the like would remain absolutely predictable.

Bellamy’s own brand of futurism, then, emerged from his formative experiences in the 1850s and 1860s as a child of industrial Chicopee, a disaffected and soon-to-be-former Calvinist, and a budding socialist who had witnessed grim poverty at home and abroad. His literary endeavors in the 1870s, as I shall illustrate in what follows, afforded him the opportunity to experiment with the psychological dimensions of the individual predictive imagination.

Edward Bellamy spent the beginning of his adult life, from the age of seventeen to the age of twenty-five, pursuing a series of different intellectual endeavors that contributed to his literary self-fashioning. At the age of seventeen, having failed West Point’s required physical examination, Bellamy went instead to Schenectady in the fall of 1867, accompanying his brother Frederick to Union College, where he embarked upon a year of largely self-directed, intensive reading that focused on ancient and modern history, geography, legal theory, political economy,

⁴¹ Quoted in Bowman, *The Year 2000*, 25.

⁴² “Who Should Not Marry,” *Springfield (MA) Union*, September 20, 1873; “Stirpiculture,” *Springfield (MA) Union*, October 2, 1875, as cited in Bowman, *Edward Bellamy*, 103. For a discussion of Bellamy’s planned stirpiculture story in the context of his utopianism, see Bowman, *The Year 2000*, 109.

⁴³ Reprinted in Rosemont, ed., *Apparitions of Things to Come*, 175.

military science, and romance languages.⁴⁴ He then spent the following year studying abroad in Germany with his cousin William Packer, after which he returned to Springfield, Massachusetts for legal study and preparation for the bar exam, which he passed with distinction in 1871. But Bellamy closed his private law practice in Chicopee Falls, Massachusetts after trying just one case, a case in which—thanks to his efforts—a widow was evicted for not paying her rent.⁴⁵

The disillusioned Bellamy next tried his hand at social commentary, writing editorials on “Woman Suffrage,” “Railroad Disasters,” and “National Education” and moving to New York in 1872 to write for the *Evening Post*.⁴⁶ Bellamy returned to Springfield within the year—at his father’s suggestion—to write editorials and book reviews for the *Springfield Union* and write his “Religion of Solidarity” (1873). Bellamy officially began his career as a writer of imaginative fiction in September 1875 with the publication of “The Cold Snap,” which was followed by nine more short stories from 1876 to 1877. In late 1877 Bellamy—who was afflicted with mysterious fainting spells—quit writing for the *Springfield Union* and left for a Hawaiian Islands excursion with his brother Frederick.⁴⁷ This early stage of Bellamy’s literary career (1872-1877) produced two short stories, “The Cold Snap” (1875) and “The Old Folks’ Party” (1876), that are particularly significant as examples of Bellamy’s early thematic concern with prospection.

“The Cold Snap” (1875), the first of the twenty-three short stories Bellamy published between 1875 and 1889, chronicles the despair and disorientation of a New England family suffering a particularly harsh and unrelenting cold wave. Trapped in their traditional farmhouse, a family of seven, along with their two Irish servant girls, is buffeted not only by freezing winds but also the numbing uncertainty of how long the frigid spell will last and whether they will

⁴⁴ Bowman, *Edward Bellamy*, 5.

⁴⁵ *Ibid.*, 7.

⁴⁶ *Ibid.*, 8.

⁴⁷ *Ibid.*, 16.

survive. One of Bellamy's central themes in this story—and many subsequent stories, as illustrated by Sue Gordon McCord's study of Bellamy's short fiction—was the solidarity of shared experience, but here I am concerned with the extent to which “The Cold Snap” hinges on a problem of the predictive imagination: how to deal with the unforeseen and unforeseeable conditions of the natural world.⁴⁸

The opening lines of Bellamy's first published short story reveal the first-person narrator's discomfort not with the extreme cold but with his uncertainty about the coming weather and its potentially ruinous implications. His predictive imagination already hard at work, the narrator wonders about the possible, if not entirely probable, disaster that continued cold temperatures could bring. What if the current winter extremes were exacerbated by “any slight hitch in the machinery of the universe?” the narrator muses.⁴⁹ Would such a hitch be enough to eradicate human life? Bellamy thus opens his story with the most ponderous question the predictive imagination can muster—will human life continue?—and links this profound question about the fragility of human life to the more mundane circumstances of temperature fluctuations during seasonal extremes. Indeed, the entire story revolves around the psychological uncertainties wrought by the harsh physical realities of the cold snap.

It is worth noting that the precipitating events in “The Cold Snap” are a result of uncertainties not of the natural world but of the business world: the narrator and his wife are at his family's New England house in the dead of winter only because the narrator's vacation time is dictated by “the fluctuations of a rather exacting business.”⁵⁰ The first ten days of their two-week stay are extremely frigid, and the eleventh day, the day of narration, promises no

⁴⁸ Sue Gordon McCord, “The Utopian Consciousness in Edward Bellamy's Short Fiction” (PhD diss., University of South Florida, 1979), 6-20.

⁴⁹ Edward Bellamy, “The Cold Snap,” in *The Blindman's World, and Other Stories*, 89.

⁵⁰ *Ibid.*, 89.

difference. As dusk and the temperature fall, after the narrator's father and two younger brother return from their offices, his sister Ella begins to page through the newspaper one of them had stuffed in his overcoat. Ella comes upon the "probabilities," the daily weather forecast, and reads aloud to her family:

Old Prob. reports another cold wave on the way East. It will probably reach the New England states this evening. The thermometers in its course range from 40° Cleveland. Numerous cases of death by freezing are reported. Our readers will do well to put an extra shovelful on the furnace overnight.⁵¹

Ella reads the probabilities but does not heed them, as she and a gentleman caller leave for a concert but soon turn back from a "shockingly cold" journey through empty streets.⁵² Upon her return, she finds the family huddled around a fire that does little to warm them.

The outsider in the group, the narrator's southern wife, is the first to be seized by the terrors of her predictive imagination. As "the signs and portents of the weather accumulated"—what exactly they are the narrator does not say—her anxiety accumulates as well, culminating in a fearful question that binds the uncertainty of the weather to the uncertainty of the shivering family's fate: "Aren't you afraid it will get so cold it will never be able to get warm again,—and then what would become of us?" The hardy New Englanders scoff at the southerner's fear, but, her husband admits, "her fears infected me with a slight, vague anxiety" as the cold snap only intensifies. The family members reluctantly trudge off to bed with "an anticipatory shiver over the register," no doubt uncertain as to whether they will survive the night in unheated bedrooms. Once under the covers, the narrator is kept awake by his own discomfort, the sounds of the house creaking in the cold, and his own predictive imagination.⁵³

⁵¹ Ibid., 92.

⁵² Ibid., 93.

⁵³ Ibid., 94.

The narrator is, by his own admission, given to flights of predictive fancy, but not out of sheer whimsy or idleness. Rather, he admits, “[b]eing of an imaginative temperament, not to feel prepared for possible contingencies is for me to feel guilty and miserable.” The narrator and his wife lie awake, fearful of freezing to death overnight, and suffer the physically and mentally paralyzing effects of an extraordinarily punishing cold snap. When the narrator and his wife finally seek refuge downstairs around the gas-heated register with the rest of the family, the narrator discovers that his entire family is also in the throes of their dire predictive imaginations, noting that “the extraordinary nature of the [cold snap] filled every mind with nameless forebodings and a great, unformed fear.”⁵⁴

After the narrator scrapes frost off the inside of the window and the men feel the frost forming on their mustaches, the family’s thoughts turn to the coming dawn as they make ostensibly hopeful (but more likely desperate) predictions of a morning thaw. As the narrator recounts, “The morning, we said, would bring relief, but none of us fully believed it, for the strange experience we were enduring appeared to imply a suspension of the ordinary course of nature.”⁵⁵ But immediately the cold snap turns unimaginably colder, leaving frost on the doorknobs, doorframes, and even on the cobwebs in the corners.

Just when the cold snap exacts its most severe physical and psychological toll, with the weakening beams of the house cracking and human voices fading, the family turns, at the father’s suggestion, to communal prayer as both familiar ritual and last resort.⁵⁶ Despite an overpowering despair and an increasing belief that their faith was futile in extreme cold—“we had a sort of dim apprehension that even [God] could not do anything in such weather”—the

⁵⁴ Ibid., 95, 98.

⁵⁵ Ibid., 99.

⁵⁶ For a brief discussion of the significance of the prayer ritual in “The Cold Snap,” see Thomas, “Introduction,” 21-22.

family finds renewed strength in the solidarity of prayer. Bellamy's own "Religion of Solidarity" finds clear expression in "The Cold Snap," as the family must come down from their separate bedrooms and endure the night together, huddled together for physical warmth and psychological comfort.⁵⁷

The family's sustenance from prayer is augmented by the sustenance they draw from beefsteak and bread, whiskey, and, at last, the sunrise. The sunlight streaming through the morning air laced with ice particles appears to the narrator as though it is "shining through a mist of diamond dust," and indeed the morning is a treasure to behold, like the sight of homeland to exhausted travelers, concludes the narrator. The cold snap has broken with the morning, and the family's journey through the physical and existential uncertainties of the freezing night ends without disaster. The narrator's opening questions about the potentially calamitous consequences of extreme temperatures are implicitly answered by the story's concluding testament to the saving power of community.⁵⁸

In "The Cold Snap" the strength of solidarity comes from the certainty of community. That is, the uncertainties and apprehensions born of individuals' predictive imaginations are ameliorated by the predictable ritual of group prayer. Individual forecasts—from the narrator's initial doomsday sentiments to the daily weather "probabilities" read aloud from the newspaper to the narrator's frantic imaginings in the dead of night—only compound the fundamental uncertainty inherent in the winter weather: will the cold spell continue, or will human life continue? Only the predictability of communal prayer and the certainty of the family's religious faith prove effective defenses against the uncertainty and anxiety brought by unpredictable weather.

⁵⁷ For a discussion of the manifestation of Bellamy's "The Religion of Solidarity" in "The Cold Snap," see Bowman, *The Year 2000*, 30; McCord, "The Utopian Consciousness in Edward Bellamy's Short Fiction," 119-27.

⁵⁸ Bellamy, "The Cold Snap," 93.

A year after he published “The Cold Snap,” Bellamy published “The Old Folks’ Party” (1876), a short story that has as its central premise the playful experimentation of the predictive imagination. Six young members of an informal social club struggle to come up with a suitable activity for their next meeting until the boring but thoughtful Henry Long proposes an idea that turns out to be anything but boring: project themselves fifty years into the future by holding an “old folks’ party.” The six teenagers shall, according to Henry’s plan, dress up as the almost-seventy-year-old versions of themselves and then reminisce about the days of their lost childhoods. The object of the experiment, Henry explains, is prospection for the sake of retrospection. The friends are to project themselves into the future—by affecting older appearances and personalities—in order to look back on the past.

Henry’s proposal is met with confused silence until Jessie Hyde asks whether Henry intends to have “a sort of ghost party . . . ghosts of the future, instead of ghosts of the past.”⁵⁹ Henry’s response encapsulates not only the central theme of the story but also Bellamy’s conviction that the future—more so than the past’s burdens of memory and history—could have a powerful and salutary effect on the present: “That’s it exactly Ghosts of the future are the only sort worth heeding. Apparitions of things past are a very unpractical sort of demonology, in my opinion, compared with apparitions of things to come.”⁶⁰

As preparations for the “old folks’ party” get underway, the friends’ discussion focuses on the central problem of the story: the difficulties of confronting an inscrutable future. Initially Bellamy’s characters discuss the problem of the lack of foreknowledge and its implications for the individual and theories of selfhood, but as the party planning continues, their discussion spirals outward to encompass the semantic and epistemological implications of an unforeseeable

⁵⁹ Edward Bellamy, “The Old Folks’ Party,” in *The Blindman’s World, and Other Stories*, 61.

⁶⁰Ibid.

future. Three of the young folks point to the consistent failure of the predictive imagination when they—and people in general—try to envision their elder selves, at which point Henry interjects his—and Bellamy’s—theory of the serial self. As Henry explains, each person has between six and twelve distinct selves, one for each major stage in life. A person does not retain a fixed personality that ages with time but rather changes from one personality to the next. Each self and each era, according to Henry, “‘is foreign and inconceivable to the others, as ourselves at seventy now are to us.’”⁶¹

Two years earlier, Bellamy put forth his theory of “successive personalities” in his essay “The Religion of Solidarity” (1874), an essay that was unpublished during his lifetime but contained, as Bellamy put it in 1887, “the germ of what has been ever since my philosophy of life.”⁶² Furthermore, “The Religion of Solidarity” was essentially his philosophy of literature: Bellamy’s principal biographer sees this essay as central to “the ideological basis of Bellamy’s fiction.”⁶³ His thinking inflected by Emersonianism and Swedenborgianism, Bellamy spends much of the essay drawing philosophical distinctions between the particular and the universal, the finite and the infinite, the individual and the collective, before arriving at the fundamental principles of the religion of solidarity: selflessness and self-sacrifice are the foundations of a moral life.⁶⁴ On the way to this definition, Bellamy faults those who consider the “personality as

⁶¹ Bellamy, “The Old Folks’ Party,” 64. For a brief discussion of Bellamy’s theory of serial identities in “The Religion of Solidarity” and “The Old Folks’ Party,” see McCord, “The Utopian Consciousness in Edward Bellamy’s Short Fiction,” 147-49.

⁶² Bellamy, “The Religion of Solidarity,” 26.

⁶³ Bowman, *The Year 2000*, 36. For an argument against reading “The Religion of Solidarity” as the most accurate reflection of Bellamy’s religious philosophy, see Sancton, “Looking Inward: Edward Bellamy’s Spiritual Crisis,” 538-57. Sancton critiques Bellamy biographers Arthur Morgan and Sylvia Bowman, and to a lesser extent literary historian Joseph Schiffman, for considering this essay written by the twenty-four-year-old Bellamy as the intellectual framework for all his subsequent literary production, but I concur with their assessment. Most importantly, as I note above, Bellamy himself at age thirty-seven (thirteen years from his death) maintained that the essay was indeed a clear articulation of his guiding philosophy.

⁶⁴ On Bellamy’s intellectual influences in “The Religion of Solidarity,” see Bowman, *The Year 2000*, 36.

an ultimate fact” when it is in fact “a mere temporary affection of the universal.”⁶⁵ The individual self, in Bellamy’s formulation, is not a fixed, singular entity but rather an orderly parade of multiple historical selves, each essentially a separate chapter in one’s life. As Sue Gordon McCord has observed in her study of Bellamy’s short fiction, Bellamy used “The Old Folks’ Party,” and indeed many of his short stories, to try out the theory of successive personalities and other abstract principles of his religion of solidarity.⁶⁶

As the six members of the social club continue to plan their “old folks’ party,” their deliberations about the implications of their experiment in foresight take on a broader scope. Henry and his friends become convinced that their experiment in imagining their seventy-year-old selves will test the limitations of spoken language. Henry argues that the phenomenon of successive personalities so confounds the grammatical rules of pronoun case that a fourth pronoun case is necessary to make clear distinctions between successions of past, present, and future selves. A thornier problem arises out of Henry and Frank’s offhanded remarks about the impossibility of foreseeing whether science or religion will hold sway in A. D. 1925, as they refer to their future fifty years hence. Henry wonders, after specifying the date, whether “the scientists leave us any A. D. by that time,” whereupon his friend Frank jokes that “A. D. would answer just as well as *Anno Darwinis*, if worst came to worst.”⁶⁷ The boys’ banter over the meaning of *A. D.* reveals the epistemological uncertainty inherent in their predictive experiment, as the friends realize they can no better predict the future fashions of scientific or religious epistemology than they can the clothing fashions of 1925.

⁶⁵ Bellamy, “The Religion of Solidarity,” 13.

⁶⁶ McCord, “The Utopian Consciousness in Edward Bellamy’s Short Fiction,” chaps. 1, 7. For an analysis of “The Old Folks’ Party” and a more indirect treatment of Bellamy’s theory of serial selves, see Bowman, *The Year 2000*, 54.

⁶⁷ Bellamy, “The Old Folks’ Party,” 65.

Whatever doubts the friends harbor about the logistics and the broader implications of their “old folks’ party”—Mary feared it was “like tempting Providence to . . . masquerade with uncreated things like their own yet unborn selves”—are overshadowed by their merry anticipations of trying on the costumes and mannerisms of fifty years hence.⁶⁸ As a week of excited planning draws to a close, the friends, whose predictive imaginations have been singularly focused on the year 1925, begin to take on a double consciousness, a simultaneous awareness of both present and future: “They began to regard every event and feeling from a double standpoint, as present and as past, as it appeared to them and as it would appear to an old person.”⁶⁹

The party begins at eight o’clock on Wednesday evening, and the young folks arrive physically transformed into old folks, thanks to their carefully chosen array of spectacles, caps, gloves, ornate canes, mustaches and beards, as well as their affected gaits and stooped postures. The ensuing conversation reveals the extent of the friends’ psychological transformation into their future selves, as they speak fondly of their imagined children and grandchildren, commiserate about their affected rheumatism, and trade nostalgic accounts of 1875, which their pretend retrospection reveals to be a time of more simplicity, authenticity, modesty, and heroism. Their affected memory lapses when trying to summon the details of the social club’s membership become increasingly genuine, and shortly after peering at a photograph of themselves as young folks and trying in vain to attach names to faces, the illusion of the “old folks” experiment becomes frighteningly real:

Their acting had becoming spontaneous. They were perplexed and bewildered as to their identity, and in a manner carried away by the illusion their own efforts had created. . . . The pathos and melancholy of the retrospections in which they were indulging became

⁶⁸ Ibid., 63.

⁶⁹ Ibid., 72.

real. All felt that if it was acting now, it was but the rehearsal of a coming reality. . . . The sense of age was weighing on them like a nightmare.⁷⁰

When the “old” women begin to cry over their current plight, mourning their vanished youth, Henry rips off his wig, abruptly ending the old folks’ party and concluding his own experiment. The old folks escape their nightmarish excursion fifty years into the future by following Henry’s lead and unmasking their future selves to become young folks again. With hair unfurled, concealing powder wiped off youthful cheeks, and sturdy postures replacing frail ones, the young folks dance around the room impelled by the wild, liberating energy of youth with a future as yet unmade:

There was a reckless abandon in their glee, as if the lust of life, the glow and fire of youth, its glorious freedom, and its sense of boundless wealth, suddenly set free, after long repression, had intoxicated them with its strong fumes. It was such a moment as their lifetime would not bring again.⁷¹

This transformative moment of youthful renewal amounts to an awakening to the vibrant life-force of youth, an appreciation of the present made possible only by Henry’s experimental combination of prospection and retrospection. And Henry’s is in the end a tightly controlled experiment, confined to six friends (and their relatives in the know), two houses, and one week. Bellamy has his characters experiment with foresight as play, in the context of dramatic performance.⁷² The results of the experiment are quite clear. The young folks’ predictive experiment has enlivened their present.

Bellamy concludes “The Old Folks’ Party” in a predictably sentimental fashion: characters young and old join together in a tearful embrace, tastefully overwhelmed by the experiment’s poignant outcome. Despite this sentimentality, entirely characteristic of Bellamy’s

⁷⁰ Ibid., 86.

⁷¹ Ibid., 87.

⁷² McCord, “The Utopian Consciousness in Edward Bellamy’s Short Fiction,” 149, 151.

early work, the purpose of “The Old Folks’ Party” is not didactic but rather experimental. In this story Bellamy establishes a hypothetical situation—young folks imagining themselves as old folks fifty years in the future—and then lets it play out, “trac[ing] the logical consequences of certain assumed conditions,” as he later characterized the method of his early short fiction.⁷³

“The Old Folks’ Party,” which I consider Bellamy’s first major literary experiment with the predictive imagination, clearly demonstrates the power of foresight to reframe the past and the present. The only actual septuagenarian attending the “old folks’ party” is the grandmother of social club member Mary Fellows, who provides this bit of wisdom that foreshadows Bellamy’s famous title of 1888: “Just think rather how dull life would be, looking forward or backward, if past or coming experiences seemed as uninteresting as they mostly are when right at hand.”⁷⁴ But Bellamy also notes the dangers of light-hearted prospection, as evidenced by Mary’s apprehension that the young folks are engaging in some kind of ill-advised play and the nightmarish results of the illusion-turned-reality. Bellamy in this story reveals the liberating potential of foresight—its salutary effect on the present—as well as its potential psychological risks.

Taken together, Bellamy’s “The Cold Snap” (1875) and “The Old Folks’ Party” (1876) reveal the human propensity for prospection, but also underscore the limitations of the individual predictive imagination. “The Cold Snap” reveals the psychological impulse for prospection, particularly in times of adversity, but also shows the insufficiency of the individual predictive imagination. “The Old Folks’ Party” offers a less dire setting in which to examine the predictive imagination, but ostensibly light-hearted play becomes nightmarishly real. The thematic center

⁷³ Bellamy, “How I Wrote ‘Looking Backward,’” 224.

⁷⁴ Bellamy, “The Old Folks’ Party,” 85.

of each story is the unforeseeable future—whether of weather conditions or old age—and the psychological responses of the predictive imagination.

Edward Bellamy’s short fiction, which touches on mesmerism, spiritualism, telepathy, mind-reading, and dream states, provides clear evidence of his interest in, and ambivalence toward, the psychology of the occult.⁷⁵ He wrote publicly as a journalist and romancer about what he and many others deemed the “humbug” of spiritualism’s claims to occult knowledge and foreknowledge, a topic I will discuss at length in chapter 7—and he wrote privately in his notebooks about his own dreams and the social value of spiritualism in a post-Darwinian culture in which traditional religious beliefs in the afterlife were increasingly coming into question.⁷⁶ In his writings of the 1870s and 1880s, Bellamy was clearly engaged with the epistemological implications of parapsychology, as were countless other spiritualist organizations, spirit researchers, and of course the American Society for Psychical Research, founded by William James and others in 1885.⁷⁷ In what follows I discuss Bellamy’s changing conceptions of occult foreknowledge from the 1870s to the mid-1880s, and I illustrate that Bellamy’s estimation of spiritualism was neither as single-minded nor as skeptical as literary historians have claimed.

To be sure, Bellamy—as a student and then a journalist in the early 1870s—did espouse a seemingly straightforward rejection of occult foreknowledge as utterly fraudulent. In an unpublished short essay entitled “The Gypsies,” which archivists date to the 1870s, a young

⁷⁵ Bowman, *The Year 2000*, 60; Rosemont, “Introduction,” 5.

⁷⁶ “Last Phase of the Philadelphia Sensation,” *Springfield (MA) Daily Union*, December 22, 1974.

⁷⁷ The scholarly literature on spiritualism is extensive; works I have found most helpful include Ann Braude, *Radical Spirits: Spiritualism and Women’s Rights in Nineteenth-Century America* (Bloomington: Indiana University Press, 2001); Howard Kerr, *Mediums, and Spirit-rappers, and Roaring Radicals: Spiritualism in American Literature, 1850-1900* (Urbana: University of Illinois Press, 1972); Howard Kerr and Charles L. Crow, eds., *The Occult in America: New Historical Perspectives* (Urbana: University of Illinois Press, 1983); Molly McGarry, “Spectral Sexualities: Nineteenth-century Spiritualism, Moral Panics, and the Making of U.S. Obscenity Law,” *Journal of Women’s History* 12, no. 2 (2000): 8-29; Robert Laurence Moore, *In Search of White Crows: Spiritualism, Parapsychology, and American Culture* (New York: Oxford University Press, 1977).

Bellamy observes that women are the primary wage-earners in a gypsy community thanks to their “guile” and the readiness of “superstitious folk” to trade money, clothing, and finery for a chance to hear their fortunes or to receive charms, amulets, love potions, and the like.⁷⁸ There is no question in Bellamy’s mind that the work of gypsy fortune-tellers is duplicitous, but he notes with a hint of nostalgic regret that the new industrial order renders such labor obsolete:

But the progress of education, and the systematization of industry, which is so rapid at this day, leaves no function for the Gypsy to perform. His occupation is indeed gone; The proverbial dishonesty and thievish cunning of his race have ceased, in this commercial age, to distinguish him from his gentile neighbors, while the schoolhouse and the press are diminishing the profits of sorcery, and destroying the market for love-philters, amulets and charms. In the United States the prospects of the Gypsies are peculiarly disheartening.⁷⁹

Bellamy did not evince the same sympathy for spirit mediums as he did gypsy fortune-tellers, however, in a series of editorials he wrote anonymously for the *Springfield Daily Union* in late 1874. These editorials centered on the infamous Katie King episode of that same year, a scandal in which a well-known spirit medium who had won the confidence of many, including England’s Royal Society and the *Atlantic Monthly*, was revealed to be a fraud. Bellamy in these articles dismissed spiritualism as “humbug” and a “joke” worthy of hearty laughter, nothing more.⁸⁰ But he did acknowledge and condemn the widespread public fascination with spirit mediums and the allure of “miracles,” constantly proliferating and circulating, like “a drug in the market.”⁸¹ Bellamy continued to explore in his unpublished writings the public’s seemingly unbreakable habit of consuming the ostensibly mind-altering utterances of spirit mediums.

⁷⁸ “The Gypsies” was most likely written in the early part of the 1870s, closer to Bellamy’s self-guided reading and study at Union College in 1867. Obviously an earnest student’s expository exercise, “The Gypsies” is more academic artifact of Bellamy’s self-education than it is editorial or review.

⁷⁹ Edward Bellamy, “The Gypsies,” manuscript, 187-, MS Am 1181.4, Bellamy Papers.

⁸⁰ “The End of a Notable Humbug,” *Springfield (MA) Daily Union*, December 18, 1874; “Last Phase of the Philadelphia Sensation,” *Springfield (MA) Daily Union*, December 22, 1874.

⁸¹ “The End of a Notable Humbug,” *Springfield (MA) Daily Union*, December 18, 1871; “Recent Miracles,” *Springfield (MA) Daily Union*, August 11, 1874.

In the 1880s Bellamy began to record his dreams in a notebook dedicated solely to the purpose of writing down his dreams as he recalled them, absent any interpretation, “alteration or embellishment.”⁸² And Bellamy had conferred special status upon dreamers and other artistic and occult practitioners in his 1874 “The Religion of Solidarity,” those who he believed had some kind of close affinity with the infinite: “Poets, mystics, dreamers, seers, and all of that ilk are marked by an overpowering sense of their element of universal soul. On the other hand, men of affairs, energetic, self-asserting, pushing people have in general their universal instincts imperfectly developed.”⁸³ Thus, perhaps Bellamy’s dream notebook represented his practical attempt to achieve the ideal of “The Religion of Solidarity”: trading the shackles of petty individualistic striving for a communal oneness with the universe.

During the years in which he was busily transcribing his dreams in his dream notebook, Bellamy was also exploring predictive occult epistemologies through a literary consideration of the postbellum social roles of a particular kind of mystic and seer: the spirit medium. Literary critic Jay Martin has remarked somewhat offhandedly—but I think significantly—that Bellamy “understood unconsciousness as prophecy, the sense of the future.”⁸⁴ In what follows I discuss Bellamy’s experiments with spiritualism and the predictive imagination in an unpublished manuscript from the mid-1880s.

Both “The Medium’s Story,” an unpublished short story manuscript, and “An Echo of Antietam,” which Bellamy published in 1886, center on the uncertainty of war and the psychological ordeal of sending a loved one to the Civil War battlefield and anticipating the

⁸² Quoted in Bowman, *The Year 2000*, 61.

⁸³ Bellamy, “The Religion of Solidarity,” 3-27, quotation on 23.

⁸⁴ Jay Martin, “Ghostly Rentals, Ghostly Purchases: Haunted Imaginations in James, Twain, and Bellamy,” in *The Haunted Dusk: American Supernatural Fiction, 1820-1920*, ed. Howard Kerr, John W. Crowley, and Charles L. Crow (Athens: University of Georgia Press, 1983), 129.

unpredictable outcome. In both stories Bellamy explores characters' burning desire for foreknowledge and the psychological defenses they build against a lack thereof.

Of Bellamy's five published novels and twenty-three published short stories, "An Echo of Antietam" (1886) is the only one set during the Civil War.⁸⁵ According to the *Century* magazine's editor, the story "made a deep impression" on many of the magazine's readers.⁸⁶ "An Echo of Antietam" is Bellamy's sentimental account of lawyer-turned-lieutenant Philip King's departure for Antietam and his return to the town of Waterville, Massachusetts as a casualty of war. The story opens on the eve of the regiment's departure for the battlefield, with soldiers and their families preparing to bid each other farewell.

In Part I the narrator recounts a mawkish exchange between Philip and his beloved Grace moments before Philip departs the parsonage where he lives with his cousin Rev. Morton and the reverend's sister Bertha Morton. In Part II the regiment marches through Waterville the following morning, where throngs of spectators clad in the colors of the flag watch proudly as the soldiers parade past, some overcome with the "rapturous tears" and "voluptuous sweetness" of wartime sacrifice.⁸⁷ Part III is devoted to the eve of the Battle of Antietam, when Philip and 125,000 other soldiers breathe in the "tonic air of battlefields" that prepares them to face fearlessly death at dawn.⁸⁸ The soldiers, safe in the foreknowledge that death awaits them, sleep better than those safe in their beds on the homefront, the narrator reports. Part IV chronicles the day of the battle, not on the battlefield, but on the homefront, where Grace and presumably many

⁸⁵ But this is not to say that the Civil War was unimportant to Bellamy's thought. As a young boy Bellamy read voraciously in military history and dreamed of nothing else but beginning his military career at West Point, a dream that did not come to fruition due to his chronically poor health. Mass mobilization of national armies in Europe was, as Bellamy recalled in "How I Came to Write 'Looking Backward,' a "grand object-lesson in solidarity." Bellamy learned this lesson well, according to John L. Thomas, who points to the Civil War as the "organizational principle of [Bellamy's] utopia." Thomas, "Introduction," 2.

⁸⁶ Robert Underwood Johnson to Edward Bellamy, 26 October 1889, as quoted in notes on "Other Novels and Short Stories," Sylvia E. Bowman Collection.

⁸⁷ Bellamy, "An Echo of Antietam," 42, 43.

⁸⁸ *Ibid.*, 46.

others are despondent over the news that Philip's regiment was under intense attack and that the battle's "result is yet uncertain."⁸⁹ The following morning a telegram arrives announcing that Philip has died leading his men in a charge. Part V recounts Reverend Morton's funeral sermon, a paean to "the mystic gain of self-sacrifice," which ultimately enables Grace to transcend her earthly grief by elevating the good of the country above her individual loss.⁹⁰

The uncertainty and unpredictability of war echo throughout "An Echo of Antietam" right from Bellamy's opening line: "The air was tremulous with farewells."⁹¹ Soldiers and their families part uncertain as to whether they will ever see each other again. Even after the highly charged atmosphere surrounding the regiment's departure subsides and patriotic fervor gives way to the daily drudgery of homemaking on the home front, an uneasy uncertainty still governs casual conversations, household chores, child care, and mealtimes. Even when battle reports arrive, they offer few conclusive details other than a "result . . . yet uncertain."⁹² Bellamy depicts the emotional toll of being in a constant state of certain uncertainty in his characterization of Grace's response to this battle report as "[o]vercome with . . . agony," prostrate and "quivering." Grace does not suffer alone, Bellamy assures us, with his subsequent generalization about the psychological turmoil of perpetual unpredictability: "It is always hard, and for ardent temperaments almost impossible, to hold the mind balanced in a state of suspense, yielding overmuch neither to hope nor to fear, under circumstances like these." Such uncertainty, Bellamy tells us, is "torture."⁹³

⁸⁹ Ibid., 50.

⁹⁰ Ibid., 57. On the Civil War-era cultural reimagining of death as not a dreaded end to earthly existence but rather a welcome opportunity for a perfect and eternal heavenly life, see Drew Gilpin Faust, *This Republic of Suffering: Death and the American Civil War* (New York: Knopf, 2008), 176-80.

⁹¹ Bellamy, "An Echo of Antietam," 30.

⁹² Ibid., 50.

⁹³ Ibid., 51.

But not torture to everyone, as we see when Philip rationalizes the risk of leaving a beautiful woman for what will surely be a brutal battle. In his impassioned goodbye to Grace, Philip invokes the financial metaphors of chance and profit as he and Grace try to imagine their futures in the face of Antietam. Philip begins their private conversation on a note of regret:

You are so beautiful . . . that in this moment, when I ought to have all my courage, you make me feel that I am a madman to leave you for the sake of any cause on earth. The future to most men is but a chance of happiness, and when they risk it they only risk a chance. In staking their lives, they only stake a lottery ticket, which would probably draw a blank. But my ticket has drawn a capital prize. I risk not the chance, but the certainty, of happiness. I believe I am a fool, and if I am killed, that will be the first thing they will say to me on the other side.⁹⁴

In this passage Philip's logic implies that the sacrifice of certainty (his "capital prize") is a soldier's principal wartime sacrifice: bringing one's certain home front happiness to the unpredictable battle and thereby rendering it uncertain.⁹⁵

In the emotionally charged conversation that follows Philip and Grace make many a prediction. Philip proclaims that he won't be killed in battle, that he and Grace will surely be reunited, that the Confederate forces are losing strength, that he will be home in a year to marry Grace. Grace predicts that they will never be parted by a benevolent God. In the midst of this series of desperately hopeful predictions, Philip uses the financial metaphor of compounding interest to reimagine their happiness as a guaranteed investment rather than a gamble: "Our happiness will be on interest till then; then per cent. a month at least, compound interest, piling up every day. Just think of that, dear; don't let yourself think of anything else."⁹⁶

⁹⁴ Ibid., 37.

⁹⁵ John L. Thomas asserts that the Civil War's primary significance for Bellamy was its embodiment of the ideal of selfless wartime sacrifice. Thomas, introduction to *Looking Backward, 2000-1887* (Cambridge, MA: Belknap Press, 1967), 10-11.

⁹⁶ Bellamy, "An Echo of Antietam," 38.

Historian John L. Thomas has pointed to Bellamy's "mystical interpretation of the Civil War" as the inspiration for the ethos of solidarity that undergirds the utopian vision of *Looking Backward*.⁹⁷ Thomas does not elucidate Bellamy's "mystical interpretation" of the war, but I suggest that the explanation lies in an all-but-forgotten Bellamy manuscript entitled "The Medium's Story," which is essentially the ghostly other half of "An Echo of Antietam," a compelling subplot that Bellamy excised from his lone Civil War story. "The Medium's Story" and "The Echo of Antietam" share character names and basic details of plot and setting—young lovers Philip and Grace are torn apart by the Civil War—but are complementary rather than overlapping war stories.

Bellamy's two Civil War stories diverge most significantly in terms of narrative, character development, and the locus of authority in making sense of sacrifice in an unpredictable war. "An Echo of Antietam" unfolds both on the home front (before and after the battle), and on the battlefield (the night before engagement), whereas "The Medium's Story" is set exclusively on the home front in the aftermath of Antietam. The brave soldier Philip does not survive in "An Echo of Antietam," whereas in "The Medium's Story" he is mistakenly presumed dead. In "An Echo of Antietam" female characters frequently defer to male characters, whereas in "The Medium's Story" women's thoughts and actions are foregrounded. In "An Echo of Antietam" the funeral sermon delivered by a male preacher is ultimately what allows Philip's beloved Grace to subordinate her grief to the patriotic ideal of communal sacrifice, whereas in "The Medium's Story" the promise of spirit communication and manifestations by a female practitioner is what sustains but also confounds the grief-stricken lovers.

Ultimately the most important thematic difference between the two stories centers on the unpredictable nature of wartime sacrifice. "An Echo of Antietam" concludes with the preacher's

⁹⁷ Thomas, introduction to *Looking Backward*, 2.

sermon as an expression of the religion of solidarity that affirms the selflessness and coherence of collective wartime sacrifice. Sacrifice in “The Medium’s Story,” however, operates on the individual and not the collective level and as such inspires more selfishness than selflessness. The sacrifice of a soldier to the war has a far more fragmentary and disruptive effect on social relations in “The Medium’s Story,” which is in the end a story of the uncertainties and epistemological instabilities of war. In other words, Bellamy’s characters are able to make sense of collective, but not individual, sacrifice of a loved one to war.

“The Medium’s Story,” an incomplete but substantial short story manuscript of forty pages dating from the 1880s, has not been published in any of the recent edited volumes that include other documentary fragments from Bellamy’s unpublished work. And “The Medium’s Story” merits only two references in the Bellamy scholarship, mentioned twice in passing by preeminent Bellamy scholar and biographer Sylvia Bowman, who privately dismissed “The Medium’s Story” manuscript as a “wild tale” and noted that it was just as well that Bellamy never finished it, for it was “too fantastic.”⁹⁸

Since “The Medium’s Story” is virtually unknown to historians and literary critics, I will summarize the plot here. Bellamy’s manuscript begins with the words of a spirit medium declaring herself—and the business of spiritualism—a fraud. Bellamy begins the story with a brief biographical sketch of the medium, who tells a visitor of her upbringing by an aunt after her mother’s untimely death and her subsequent entry into the trade of spirit mediumship thanks to her vaguely disreputable husband. At her aunt’s house, the medium’s cousin Tom, the youngest of the family, becomes her charge and the object of her devotion. Tom confides in the medium

⁹⁸ Sylvia E. Bowman, “Bellamy’s Missing Chapter,” *New England Quarterly* 31, no. 1 (1958): 47-65; Bowman, *Edward Bellamy*, 102; Bowman, notes on “Other Novels and Short Stories,” Sylvia E. Bowman Collection.

regarding his beloved Nellie and his thoughts of marriage, but his plans are interrupted by the war.

Tom leaves to fight in the Sixtieth Massachusetts regiment, much to the dismay of his devoted girlfriend Nellie, who waits both proudly and apprehensively for any news from the battlefield. In Tom's second year away at war, Nellie and the medium receive the news they have been dreading when Tom's name appears on the list of soldiers killed in battle. Tom's cousin, a minister with whom he had lived since his mother's death, gives the funeral sermon, during which the medium observes Nellie sitting stoically beside the minister's wife. The medium, though she keeps her distance from Tom's family at the service out of a sense of social propriety, visits the cemetery many nights so that she can lay flowers at Tom's grave unobserved.

For the next three years, Nellie mourns Tom, cares for her ailing mother, and works as a schoolteacher. After three years' time, Nellie marries Tom's cousin, the widowed minister who had delivered Tom's funeral sermon. The medium hears gossip around town suggesting that Nellie has married not for love but rather for her sick mother's financial security, and Nellie's mournful appearance six months after her wedding lends credence to such a rumor.

That same year, in May 1865, the medium, home alone one night, hears a knock at her door. She opens the door and is shocked to discover a disguised Tom, who immediately insists that he is not a ghost. Tom explains to the astonished medium that, although he had been counted among the dead, he was actually wounded in a charge and then held captive in a Confederate prison for three years. He tried to send word that another soldier's body had been mistakenly put in his coffin, but to no avail.

Tom eagerly asks the medium for information about Nellie, but the medium, reluctant to reveal that Nellie has married, answers evasively until a persistent Tom forces her to tell him the truth. Inconsolable, Tom resolves to leave town forever, as secretly as he has arrived, after catching just one glimpse of Nellie. So Tom and the medium set out under cover of darkness the following night and make their way to the parsonage where Nellie lives with her husband, who happens to be away on church business. Tom and the medium conceal themselves in a lilac bush and eavesdrop on a conversation between Nellie and her sister-in-law, Bertha Morton.

Nellie bemoans her lingering grief and love for Tom and questions the appropriateness of her marriage to Bertha's brother.⁹⁹ A distraught Nellie confesses to Bertha that the uncertainty of whether she will ever see Tom again is what torments her most of all. Bertha attempts to distract Nellie by asking her to play a song on the piano, which she does, but performing Thomas Haynes Bayly's "The Rose That All Are Praising" only exacerbates Nellie's emotional turmoil, leaving her hunched over the piano, sobbing and declaring her love for Tom.

Profoundly affected by Nellie's outpouring of emotion, Tom begins to dwell on her misfortune instead of his own. He begins to wonder aloud about possible ways to comfort her, and he rather indirectly asks the medium to perform a séance in which he will appear in the guise of a spirit and deliver a message designed to alleviate Nellie's suffering. The medium is skeptical that Nellie—who is convinced that spiritualism is fraudulent—will fall for such a scheme, but an eager Tom assures her that the plan will work if she can relay a convincingly intimate message that could have only come directly from Tom. The medium and Tom put their plan in motion, arranging for Nellie's visit to the medium, and the medium conceals Tom in her sitting room so that he can steal a glimpse of Nellie when she arrives.

⁹⁹ Roughly halfway through the manuscript, Bellamy changes the names of his main characters from Tom and Nellie to Philip and Grace, the young lovers of "An Echo of Antietam." Bellamy reverts back to Tom and Nellie toward the end of the manuscript. To avoid confusion, I will use Bellamy's original character names throughout.

During her sitting with the medium, Nellie, who is clearly affected by a picture of Tom that he had hung on the wall in preparation for her visit, believes that his spirit is somehow present. Tom is distraught at the sight of her but follows through on his promise to leave town, preparing to leave the medium's house by midnight. At ten o'clock that night, when the medium goes into her kitchen to prepare food for Tom's journey, she is startled to discover an animated Nellie sitting in a chair, her hair wet from an apparent walk in the cemetery and her eyes wild from an apparent encounter with Tom.

Desperate for some kind of sign from Tom, Nellie had called out his name and was astonished to feel him touch her hair. As Nellie explains to the medium what has transpired, the medium notices Tom hiding behind the curtains. Nellie remains unaware of Tom's presence in the room but clamors to keep vigil in the medium's room the following evening, the anniversary of Tom's reported death at Antietam, in hopes that he will appear before her. The medium initially refuses, but when Tom, with a gesture, threatens to burst forth and reveal himself, she relents and walks Nellie home. Upon the medium's return, Tom declares his intentions to stay until the following evening and appear in ghostly guise, whether the medium will assist him or not.

At this point the narrative is interrupted by dialogue between the medium and a doctor she has evidently summoned, a conversation which suggests that the matter is out of her hands: Tom and Nellie are being pulled together by forces beyond their control. The medium suggests that the only option is to go along with Tom's wishes and hope that he can appear to Grace

without revealing his secret. The doctor is incredulous, whereupon the medium informs him pointedly that such deception is quite simple and quite common in her line of work.¹⁰⁰

The manuscript ends with a fragment that includes the dialogue from Nellie's frantic appeals to the medium to permit her to wait the following night for Tom's spirit and the medium's subsequent refusal on the grounds that such an apparition would "unhinge [Nellie's] mind."¹⁰¹ The omniscient narrator returns in this fragment to characterize the general character of spiritualism as fraudulent and its true believers as, those, like Nellie, uncertain and longing for confirmation and thus easily manipulated by newspaper coverage of spirit manifestations.

The final page of Bellamy's manuscript contains plot notes for the conclusion of "The Medium's Story." The first note indicates that Nellie will seek out the medium a year after Tom's death—Bellamy confuses the timeline here—and ask her to summon Tom's spirit, whereupon the medium refuses to deceive her and sends her away with the promise to contact her if she has any future communications from Tom. A second note indicates that Bellamy planned to resolve the contradiction in which Nellie can know Tom to be both dead and alive by explaining that "as a matter of fact every noteworthy medium deceives many that way every day."

Despite its title, "The Medium's Story" is not explicitly about spiritualist practices but rather about the structures of human belief and doubt that made spiritualism a ubiquitous and powerful facet of postbellum culture. The medium's story in "The Medium's Story" is actually the story of the circumstances in which her services would be valuable, the story of the crisis of social and spiritual uncertainty facing Civil War soldiers and the families they left behind.

¹⁰⁰ At this point in the manuscript Bellamy conflates the characters of the medium and Bertha Morton into a character who is the sister of the minister as well as the sister of the mysterious doctor, whose sudden appearance late in the story Bellamy does not explain.

¹⁰¹ Bellamy, "The Medium's Story," 188-, MS Am 1181.4, Bellamy Papers.

Tom's family and hundreds of thousands of others were afflicted with, as Drew Faust puts it, "that 'dread void of uncertainty' about both the earthly and spiritual fate of their sons and brothers."¹⁰² Both of Tom's loving women—Nellie and the medium—pin their hopes on letters from Tom and their fears on the list of the killed that the medium anxiously consults at least a dozen times before Tom's name finally appears. And the soldiers, whom the medium deems "babies [who] feel hopeless when they go," are the most vulnerable to the physical and psychological risks inherent in the uncertainties of war.

Not surprisingly, Tom's and Nellie's predictive imaginations run wild when they are torn apart by the war, Tom's apparent death, and his subsequent captivity in a Confederate prison. Upon his arrival at the medium's house, Tom's frantic questions about Nellie reveal that he has feared the worst for her. In Nellie's mournful confessional to her sister-in-law Bertha, we see that Nellie's predictive imagination yields her an agonizing and paralyzing uncertainty. Believing her former lover to be dead, Nellie is consumed by the question of whether their spirits will ever be reunited:

Oh Bertha that is it, shall I ever see him again? This is what troubles me most of all. If I could only be sure of it. If I only could not merely believe, but know that somewhere he is surely waiting for me, I should not need anything else to make me happy. I could wait cheerfully to go to him.¹⁰³

When Bertha insists that Nellie, like everyone, certainly believes in a future heavenly reunion with her beloved, Nellie is not so sure, confessing a measure of doubt:

I never thought of doubting it before he died, so long as it did not matter to me much. But now that it matters everything, believing is not enough, if believing only mocks me and we cannot know. Oh Bertha, how still the dead are, oh how still. I never thought they were so still. None do till they have their own dead. It is a silence that freezes faith. Oh if I could know.¹⁰⁴

¹⁰² Faust, *This Republic of Suffering*, 184.

¹⁰³ Bellamy, "The Medium's Story," 188-, MS Am 1181.4, Bellamy Papers.

¹⁰⁴ *Ibid.*

Nellie's lament crystallizes the central tension of "The Medium's Story," an epistemological tension between spirituality and spiritualism. Traditional religious faith in an everlasting afterlife meant that a soul's future was eminently predictable. But, as Nellie observes, "believing is not enough"—not enough for her or for the millions of American men and women whose loved ones fought in the Civil War. Bellamy's unfinished manuscript leaves Tom's scheme unfinished as well, but we know from the planning stages that Tom's intent is to stage a spirit manifestation—utterly fraudulent—that will assuage Nellie's self-professed spiritual uncertainty and break death's "silence that freezes faith."

The point of "The Medium's Story" is not to expose spiritualism as humbug, which Bellamy did sternly in his *Springfield Union* editorials of the 1870s and explicitly in the novel *Miss Ludington's Sister* (1884). After all, the medium declares that she is a fraud in the story's opening line, and Bellamy makes four subsequent references to spirit mediums and spiritualism as "a sham and humbug," "deceptions," "false and wicked," and "the gross and vulgar frauds of the Spiritualists." Bellamy's manuscript begins from the premise that spiritualism is a sham but then goes on to suggest that such a sham is of genuine value in a Civil War society afflicted by a monumental crisis of certainty. The social value of spiritualism comes precisely from its predictive capacity, its promise of occult foreknowledge, its glimpse into the hereafter. As Drew Faust observes in her recent history of death in the Civil War, spiritualism had enormous postbellum appeal as "an ending to uncertainty."¹⁰⁵

The value of the medium's labor is made clear in the manuscript's final pages, where a narrator characterizes Nellie's willingness to consider spirit communication plausible entirely typical of a reading public accustomed to newspaper accounts of spirit manifestations "well

¹⁰⁵ Faust, *This Republic of Suffering*, 171-89, quotation on 185.

calculated to overwhelm the imagination of one like [Nellie],” one who longed for a physical reconnection with the spirit of her purportedly dead Tom. Spiritualism’s value lay in its power to assuage uncertainty and confirm the eternal life hereafter of the soldiers who were slain on the battlefield or subsequently succumbed to disease.¹⁰⁶ Indeed, spiritualist periodicals like Boston’s *Banner of Light* regularly published messages from slain soldiers in features like “The Message Department” or “Voices from the Dead.”¹⁰⁷ Spirit manifestations were, quite literally, the embodiment of certainty, as the narrator observes in the manuscript’s conclusion: “For it was averred by many of whose own sincerity there could be no question that they had been enabled to hear and see and touch their beloved, reclothed for the time with . . . matter, seeming solid flesh and blood.”¹⁰⁸

Bellamy excised “The Medium’s Story” from his published Civil War story, “An Echo of Antietam,” and he left the manuscript unfinished, in some disarray. His final page—with its sketchy notes for two possible endings—reveals an author facing a choice between depicting spiritualism as fraudulent, as he and numerous others had previously done, and recasting his medium’s story as a story of honesty and virtue. Regardless of which narrative path Bellamy might have chosen, he abandoned his literary experiments with individual prophecy in the mid-1880s as he began experimenting with the predictive imagination on a collective scale.

¹⁰⁶ In the 1884 novel *Miss Ludington’s Sister: A Romance of Immortality*, one of Bellamy’s characters explains the psychological value of spiritualism: “Humbug or no humbug, what she saw seemed to comfort my poor friend more than all the religions or philosophies ever revealed or invented could have done. You see, these are so vague, even when we try to believe them, and that was so plain” (62).

¹⁰⁷ Faust, *This Republic of Suffering*, 183.

¹⁰⁸ Bellamy, “The Medium’s Story,” 188-, MS Am 1181.4, Bellamy Papers.

Chapter 6: Martians and Bostonians

Bellamy's thematic concern with the promise and peril of prospection continued right up until he began work on *Looking Backward* in late 1886.¹ In his writing of the mid-1880s Bellamy turned his attention away from the individual predictive imagination and toward a collective predictive imagination that I consider to be the groundwork for his famous utopian prophecy. In 1886, he published the short story "The Blindman's World," his most sustained examination of the theme of prescience. In this chapter I argue that Bellamy found in the collective power of foresight precisely what he depicted as lacking in his stories of the individual prophetic imagination: certainty for all.

In "The Blindman's World," a professor of astronomy and mathematics is transported in a dream-like state to a utopian Martian colony in which every member possesses the power of foresight, unlike the unfortunate earthlings who inhabit a "blindman's world" in which no one has a clear view of the future. Professor S. Erastus Larabee, a respected man of science whose interplanetary travel remains a secret until the posthumous examination of his personal papers, has a self-proclaimed "'infatuation'" with Mars and admits in his written account that his interest in Mars "had grown to be more than strictly scientific."² After spending four successive nights in his observatory, an exhausted Professor Larabee is rewarded with an unusually close and clear view of Mars through his telescope, and gazes so intently and completely that he is transported. In the Professor's words,

To all mental intents and purposes I was on Mars. Every faculty, every susceptibility of sense and intellect, seemed gradually to pass into the eye, and become concentrated in the

¹ Bellamy recalled that he began writing *Looking Backward* in "fall or winter of 1886" and finished approximately six to eight months later. He revised throughout the spring and summer of 1887, and the book was published in January of 1888. Edward Bellamy, "How I Wrote 'Looking Backward,'" 227-28.

² Bellamy, "The Blindman's World," in *The Blindman's World, and Other Stories*, 2.

act of gazing. Every atom of nerve and will power combined in the strain to see a little, and yet a little, and yet a little, clearer, farther, deeper.³

The Professor's intense strivings for a vision beyond human capacity land him amid a community of Martians who all possess the perspicacity the Professor longs for: they see clearly and deeply far into the future. Bellamy devotes most of the story to a lengthy dialogue between the Professor and the first Martian he encounters, a dialogue that Bellamy uses to test the premise of communal foreknowledge. The skepticism of the Professor is countered at every turn by the Martian's explanations of the virtues of foresight, and thus the logic of Bellamy's Martian utopia unfolds.⁴

Bellamy's original plan for "The Blindman's World" included a greater emphasis on memory and occult ways of knowing, but in revising this story for publication, Bellamy ultimately turned away from both of these themes that had animated much of his previous work. Bellamy's manuscript notebooks reveal that he initially planned a more balanced story that contrasted Earthlings' lack of foresight with Martians' blindness to memory and featured an Earthling hero who is hailed as a "demigod" for his clear vision into the past.⁵ But Bellamy abandoned this plan to consider memory and foresight in tandem and instead focused entirely on the Martian experience of foreknowledge. In the published version of "The Blindman's Story," Professor Larabee is no demigod but rather an intrepid scientific investigator turned interplanetary explorer whose unconscious voyage of discovery leads him to discover the limitations of vision—and life—on earth.

³ Bellamy, "The Blindman's World," 5.

⁴ Other utopian novels, like William Dean Howells's *A Traveler from Altruria*, employ Socratic dialogue as an expository method.

⁵ Bellamy, "Plots for Stories #1," in *Revisiting the Legacy of Edward Bellamy*, ed. Widdicombe and Preiser, 239.

Bellamy's manuscript notebooks also indicate that the original story notes placed a greater emphasis on occult knowledge of this Martian society as well as on occult foreknowledge in general. Bellamy jotted down some different possibilities for the narrative structure of "The Blindman's World," positing that the reader would learn of the story of Martian foreknowledge from a clairvoyant, or perhaps from a Martian hero who materialized at a séance, or perhaps from a Smithsonian scientist characterized as an "old aerolite and Aurora Borealis crank" who then materializes at a séance.⁶ But the crank scientist becomes a reputable scientist in Bellamy's published version, and we learn of Professor Larabee's unconscious voyage to Mars through his personal papers, which an anonymous narrator is preparing for publication, not through a spirit materializing at a séance.

Professor Larabee never mentions to his fellow academics his knowledge of Martian foreknowledge—a discovery produced by a combination of scientific instrumentation and observation along with unconscious experience, sleepwalking, and unconscious writing—for fear of damaging his scientific reputation. Professor Larabee's motives for keeping his secret notwithstanding, Bellamy indeed frames "The Blindman's World" as a story of scientific, not occult, knowledge. Bellamy's manuscript notes for this story end with a bit of dialogue that did not make it into the published version; their omission underscores Bellamy's shift away from occult ways of knowing. Bellamy's Martian was to tell his Earthling visitor, "You men are not far from having the veil broken. Your instance of second-sight, prophecy, etc. I cannot of course speak certainly of them, but so far as I have heard, seem to be instances when you have broken through the veil and had glimpses."⁷ But Earthlings in the published version are blessed

⁶ Bellamy, "Plots for Stories #1," 239, 244.

⁷ *Ibid.*, 246.

with no such potential, however, and they remain completely blind, without the slightest glimmer of foresight.

Bellamy places the problem of the lack of foreknowledge squarely at the center of this story: his Martian terms the uncertainty of earthly life a “disability so crushing” and “so strange and lamentable a spectacle,” and earthlings “poor blindfolded creatures” who are “destitute of the faculty of foresight.”⁸ And Bellamy stated the problem in even bleaker terms in his manuscript notes, writing that “ninety-nine hundredths of human endeavor is frustrated through ignorance of the future” and making notes for his depiction of earthlings without foresight stumbling around in the dark such that they become “the laughing stock of the Martians.”⁹ The biggest liability for humans, Bellamy observed in another manuscript notebook, was our limited scope of vision, and “The Blindman’s World” represents his attempt to test a solution, to explore the premise of a temporally broadened scope of human vision.¹⁰

As “The Blindman’s World” unfolds, Bellamy makes it clear that Earthlings who are lamentably “destitute of the faculty of foresight” suffer numerous afflictions as a result. Bellamy’s Earthlings suffer “the disease of memory” because they are backward-looking, and they suffer the turbulent winds of unforeseen change because they lack foresight. When Professor Larabee argues for the superiority of unpredictable romantic love on Earth, the Martian acknowledges that such surprise would probably be deadly on Mars, adding that Martians find quite remarkable the capacity of earthlings “to endure the constant buffetings of the unexpected.”¹¹ Forever facing unforeseen financial and emotional losses, romances abruptly

⁸ Bellamy, “The Blindman’s World,” 12, 13, 14-15, 12.

⁹ Bellamy, “Plots for Stories #1,” 242.

¹⁰ *Ibid.*, 238.

¹¹ Bellamy, “The Blindman’s World,” 18, 20.

ended, unexpected illnesses, and sudden deaths of loved ones, Earthlings are doomed to certain uncertainty.

The Martian observes that one of the worst plights of the human race is the lack of knowledge of one's time of death. Death—the biggest uncertainty of all—brings with it, the Martian argues, a far more damaging series of daily uncertainties regarding whether each day will be one's last on earth. Foreknowledge of one's death would, the Martian goes on, “deliver you from the thousand deaths you suffer through uncertainty whether you can safely count on the passing day.”¹²

The cure for the blindfolded human race is found not only on Mars but on every other planet in the universe. Mars and the rest of the planets are blessed with a divinely-inspired foresight that allows them a clear vision of the future trajectories of their own lives. Earth is the only planet lacking prescience. The Martians' vision of the future is neither eternal nor omniscient, we learn, but limited to their own personal experience. Other than foresight, Martians and Earthlings have no other apparent differences, except that the faces of Martians reveal an unusual tranquility and childlike innocence, and none of the worry or apprehension characteristic of human faces. And since there is no looking backward on Mars, its inhabitants' lives—devoid of memory—are devoid of heartbreak or mourning. As Bellamy indicated in his manuscript notes for this story, there is no disappointment on Mars.¹³

As Professor Larabee and the Martian trade notes on hindsight and foresight, the Professor begins to note some utopian elements of Martian society. No one on Mars experiences hope or fear, which are, as Bellamy noted in his manuscript notebooks, the fundamental human

¹² *Ibid.*, 14.

¹³ Bellamy, “Plots for Stories #1,” 246.

emotional responses to uncertainty.¹⁴ Martian society is also devoid of competition, as every Martian knows beforehand what his or her relative success and prosperity will be and thus has no motive for imitation or rivalry.¹⁵ Bellamy's notes for "The Blindman's World" include a more explicit discussion of Martian labor:

Every man has his allotted work and does it without interference from another, he has his monopoly in some line in advance, certain to be limited as by no other Martian. In this way there is no loss, [through] duplication and competition, such as make man's life below a spectacle of such madness to Martian astronomers.¹⁶

Although Bellamy does not use the phrase "a spectacle of such madness" to characterize the Gilded Age economy in "The Blindman's World," the Martian obviously speaks for Bellamy when he points to the opposite circumstances of earthly society in declaring that the absence of competition on Mars has produced a society devoid of conflict: "all the brood of heart-burnings and hatreds, engendered on Earth by the strife of man with man, is unknown to the people of Mars."¹⁷

In addition to the absence of labor conflict, a prescient society would, in Bellamy's formulation, enjoy an extremely low crime rate. According to Bellamy's manuscript notes (which he did not incorporate into the published story), criminals with specific foreknowledge of their own deviance would, over time, be so wracked with an anticipatory guilt that they would opt instead for a life of moral rectitude. "Remorse," Bellamy wrote in his notes for this story, "is anticipating," and indeed was punishment enough: what amounted to the evolutionary elimination of criminal behavior over the course of a Martian's lifetime was so certain and so

¹⁴ Bellamy, notebooks, n.d., published in *Revisiting the Legacy of Edward Bellamy*, ed. Widdicombe & Preiser, 24.

¹⁵ In his notebooks Bellamy anticipated the objection that such a class of prescient laborers would be reduced to mere "automata" but refuted such a critique by arguing that workers (akin to philosophers) who followed a predetermined career trajectory would enjoy increased "mental freedom" in the absence of uncertainty over their work-related futures. Such a class of philosopher-laborers would ensure a intellectual culture vastly superior to Earth's. Bellamy, "Plots for Stories #1," 241.

¹⁶ Bellamy, "Plots for Stories #1," 241.

¹⁷ Bellamy, "The Blindman's World," 24.

widespread that judicial punishment did not exist on Mars. Foresight, Bellamy noted, thus had the capacity to mold one's character.¹⁸ What Bellamy does not say explicitly is that foreknowledge of social conditions like prosperity, labor, and crime functions as a mechanism of social self-control by forcing prescient individuals to police their own future actions.

Bellamy's discussion of the foreknowledge and preemption of criminal behavior on Mars raises, but does not directly address, the question of how determinism and free will coexist in this utopia of foresight. Here I will briefly discuss the nature of the future in "The Blindman's World," which is essential to understanding Bellamy's conception of the year 2000 in *Looking Backward*. The future on Mars, as we learn from the Socratic dialogue between the Professor and the Martian, is predetermined by God's will, as it is on earth. The only difference, the Professor learns, is that humans learn God's will after a particular event occurs, whereas Martians are aware of God's will ahead of time and watch it unfold. Martians never rail against what they perceive to be arbitrary fates but rather appreciate the perfection and indeed beauty of their predetermined futures. Martian lives unfolding are, Bellamy writes, "like the fascination to a mathematician of a most elaborate and exquisite demonstration, of a perfect algebraical equation, with the glowing realities of life in place of figures and symbols."¹⁹ Bellamy's manuscript notebooks also include the analogy of a chess player moving game pieces according to a predetermined sequence of moves.²⁰ Martians' intellectual and aesthetic appreciation of God's rational design means that they do not consider the future theirs to tinker with in any significant way.

As the Professor learns, no one with foresight would ever even wish for a different future, as the future on Mars is as "absolutely fixed and unalterable" as the past on Earth. Martians

¹⁸ Bellamy, "Plots for Stories #1," 241-46, quotation on 241.

¹⁹ Bellamy, "The Blindman's World," 25.

²⁰ Bellamy, "Plots for Stories #1," 245.

would no more likely wish for a different future than they would wish that two plus two equals five, the Professor is told. What is important to note is that Bellamy's Martians possess not only foreknowledge of future events but also an understanding of their "logical necessity" and coherence: Martians understand the interconnectedness of a universe full of discrete events and would never, as Bellamy's metaphor suggests, risk unraveling the tightly woven fabric of the universe by pulling on a single thread.²¹

Ultimately the Martians' conceptual grasp of the future—as Bellamy depicts it—matters more than their concrete foreknowledge of future events in "The Blindman's World." The most important distinction between Earth and Mars, then, is not the simple fact of Martian foreknowledge and Earth's "disease of memory" but rather the difference in the modes of anticipation on Earth and Mars. In his notebook Bellamy sketched out a plan to "[d]escribe how anticipation on the earth and on Mars is quite different. On earth it exceeds reality and prepares us to be disappointed with fulfillment, but on Mars it is never excessive, but exactly proportioned to the result."²² This statement is particularly significant because it reveals the key to Bellamy's Martian utopia: a different kind of predictive imagination that Earthlings would do well to emulate.

Despite the story's interplanetary setting, Earth is ultimately Bellamy's real focus in this story. Bellamy's original title for this story was "A Romance of Mars," and in opting instead for "The Blindman's World," he recast this story as no longer a romance but instead an implicit social critique.²³ Bellamy explicitly articulates the utopian dimensions of "The Blindman's World" in his final paragraph, when Professor S. Erastus Larrabee turns his attention away from Mars and offers this bleak reassessment of life on Earth:

²¹ *Ibid.*, 240; Bellamy, "The Blindman's World," 25.

²² Bellamy, "Plots for Stories #1," 245.

²³ *Ibid.*, 239.

The lack of foresight among the human faculties, a lack I had scarcely thought of before, now impresses me, ever more deeply, as a fact out of harmony with the rest of our nature, belying its promise,—a moral mutilation, a deprivation arbitrary and unaccountable. The spectacle of a race doomed to walk backward, beholding only what has gone by, assured only of what is past and dead, comes over me from time to time with a sadly fantastical effect which I cannot describe.²⁴

Here Bellamy's Professor begins to consider the implications of the lack of foresight in collective, not individual, terms. In this passage Bellamy describes the lack of foresight on earth as a disruptive phenomenon—an incongruity, a warping, and a lack. A human race that is looking backward—and this passage is widely regarded as the origin of Bellamy's most famous title—cannot, according to the Professor's logic, fulfill its "promise."

Bellamy concludes "The Blindman's World" with the Professor's utopian yearnings for a wholly different kind of world, a world in which foresight has banished the psychological costs of unforeseen events.

I dream of a world where love always wears a smile, where the partings are as tearless as our meetings, and death is king no more. I have a fancy, which I like to cherish, that the people of that happy sphere, fancied though it may be, represent the ideal and normal type of our race, as perhaps it once was, as perhaps it may yet be again.²⁵

In the Professor's concluding words we find the beginnings of the utopian vision Bellamy set forth a year later in *Looking Backward*. It is worth noting that the Professor twice refers to his dream as a "fancy," which is how Bellamy characterized his original intent in writing *Looking Backward*, before he came to characterize his novel of the year 2000 as "intended, in all seriousness, as a forecast."²⁶

What did Edward Bellamy see as the utopian promise of foresight? Or of looking forward at all? As literary critics have noted, Bellamy saw in prospection the chance to break

²⁴ Bellamy, "The Blindman's World," 28-29.

²⁵ Ibid., 29.

²⁶ Bellamy, *Looking Backward*, 220.

free of the shackles of the past, by escaping the Calvinist guilt of remembered sin, but that is not a complete answer.²⁷ I argue that prospection signified to Bellamy not merely a turning away from the past but, more importantly, a way to see more clearly the present.

The point of “The Blindman’s World” for Bellamy was not whether foreknowledge was literally possible on Earth, but rather whether a new consciousness of the relationship between present and future was possible. In “The Religion of Solidarity” Bellamy wrote about the need for humans to balance their “telescopic” (of the infinite) and “microscopic” (of the infinitesimal) views of the world and lamented the blindness of those who fail to understand the dual nature of humans as both individualists and universalists, who don’t see the connection between individual earthly strivings and the “conscious solidarity of the universe.”²⁸

It is important to note, however, that Bellamy did not advocate a singular focus on the future, and in fact critiqued those who were tempted to forsake the present moment in favor of a far-off future. In “The Religion of Solidarity,” Bellamy issued this warning against a narrow and idealistic futurism:

Time is not a vestibule of eternity, but a part of it. We are now living our immortal lives. This present life is its own perfect consummation, its own reason and excuse. The life of infinite range that our intuitions promise us lies even now open round about us. The avenues leading to it, the vistas opening upon it, are those universal instincts that continually stir us, and which if followed out would lead us thither. It is our own dull lack of faith that causes us to regard them as of no present but only of future significance, that places our heaven ever in some dim land of tomorrow, instead of all about us in the eternal present.²⁹

Bellamy concludes his philosophic essay with an exhortation to see clearly the relationship between the present and the future, to see the idealized visions of the future in the present:

²⁷ McCord, “The Utopian Consciousness in Edward Bellamy’s Short Fiction” 9-11; Paul F. Boller, *Freedom and Fate in American Thought* (Dallas: SMU Press, 1978), 141.

²⁸ Bellamy, “The Religion of Solidarity,” 24, 25.

²⁹ *Ibid.*, 25.

What respect can be claimed for aspirations after other forms and higher grades of life by those who are too dull to imagine the present infinite potentialities of their souls? When will men learn to interpret their intuitions of heaven and infinite things in the present, instead of forever in the future?³⁰

Bellamy's romance of foresight in "The Blindman's World" presents a particular view of the utopian predictive imagination, a view that we can summarize in three main principles. First, as critics have rightly noted, Bellamy believed in the individual and social value of straining to see the future—whether consciously or unconsciously—instead of remaining fixated on the past. Second, the gift of foresight affords the utopian promise of a society devoid of uncertainty. And finally, Bellamy cautioned against—in "The Religion of Solidarity" and "The Blindman's World"—blindness to the present for the sake of the far-off future. The project of "The Old Folks' Party"—prospection for the sake of introspection—became the philosophical underpinning of "The Blindman's World" and *Looking Backward*, texts in which Bellamy stressed the importance of understanding present and future, microscopic and telescopic, in a relational and simultaneous, not sequential and discrete, manner.

Bellamy wrote *Looking Backward* amid the violent labor uprisings of the mid-1880s, and published it two months after the November 1887 hangings of four labor activists and anarchists arrested in Chicago's deadly Haymarket Square riot the previous year.³¹ But Haymarket did not fashion Bellamy into a radical reformer. As many Bellamy scholars have noted, Bellamy began his career as a social critic, writing editorials on topics ranging from child labor to women's rights to education in the 1870s, long before he conceived of writing *Looking Backward*, easily one of the most widely-read pieces of social criticism in the late nineteenth century. Sue Gordon McCord's study of Bellamy's short fiction and Sylvia Bowman's biographies argue convincingly

³⁰ *Ibid.*, 26.

³¹ Rosemont, "Bellamy's Radicalism Reclaimed," 147.

that Bellamy's utopian impulses date from the 1870s, and from the 1870s through the 1880s, Bellamy's journals reveal a flurry of notes, plot outlines, and titles for a planned utopian text.³²

After *Looking Backward* became a sensation, Bellamy distanced himself, both publicly and privately, from the socialist reform tradition. In his 1889 essay "How I Came to Write 'Looking Backward,'" Bellamy disavowed any prior association "with any class or sect of industrial or social reformers" and denied "any particular sympathy with undertakings of the sort."³³ And in correspondence with his friend and literary mentor William Dean Howells, Bellamy claimed that the extent of his knowledge of socialist literature and organizations was limited to what he read in the newspaper, declaring that he had read Lawrence Gronlund's *Cooperative Commonwealth* only after the publication of *Looking Backward*, at Gronlund's urging.³⁴ Of his Nationalist scheme, Bellamy admitted to Howells that "[i]n the radicalness of the opinions I have expressed I may seem to out-socialize the socialists, yet the word socialist is one I could never well stomach."³⁵

Bellamy's distaste for the term stemmed from what he deemed its anti-American and unpatriotic connotations. He complained to Howells that this "foreign" word "smells to the average American of petroleum, suggests the red flag, with all manner of sexual novelties, and an abusive tone about God and religion."³⁶ Believing the word *socialist* would doom any political party in America, Bellamy opted for the ostensibly more patriotic *Nationalist*.³⁷

Bellamy was also loath to label himself a reformer, declaring in 1897 that the "self-styled

³² Bowman, *The Year 2000*, 106-11.

³³ Edward Bellamy, "How I Came to Write 'Looking Backward,'" *Nationalist* 1 (May 1889): 1-4, quotation on 1.

³⁴ Howells's *Harper's Monthly* review of *Looking Backward* asserted that Bellamy's and Gronlund's states were virtually identical. But Bellamy distrusted Gronlund's trade-union socialism in favor of his own singular, organic Nationalism because he was skeptical of the economic diversity of Gronlund's scheme. William Dean Howells, "Editor's Study," *Harper's Monthly*, June 1888, 154; Thomas, introduction to *Looking Backward*, 78.

³⁵ Edward Bellamy to William Dean Howells, 17 June 1888, quoted in Joseph Schiffman, "Mutual Indebtedness: Unpublished Letters of Edward Bellamy to William Dean Howells," *Harvard Library Bulletin* 12, no. 3 (1958): 370.

³⁶ *Ibid.*

³⁷ *Ibid.*, 371.

‘reformer’ of this day is everywhere recognized as a politician who relies upon slander and hypocrisy as his sole weapon.”³⁸ And Bellamy was no unionist, either. Despite his support for the Homestead strikers in 1892, Bellamy considered the labor strike an understandable short-term response but a dangerous long-term mechanism, a “blundering instrument” that exacted more social costs than it did redress individual grievances.³⁹

Neither unionist nor reformer nor socialist, Bellamy set out in late 1886 to write a work of imaginative fiction that—despite his literary intent—electrified a diverse spectrum of reform, religious, and laborite groups.⁴⁰ Bellamy’s “sugar-coated” dream tale, as Howells put it in his influential *Harper’s* review, delivered “a dose of undiluted socialism” that even some of the most fervent antiradicals swallowed without question.⁴¹ As Bellamy confessed shortly after the book’s publication,

In undertaking to write *Looking Backward* I had, at the outset, no idea of attempting a serious contribution to the movement of social reform. The idea was of a mere literary fantasy, a fairy tale of social felicity. There was no thought of contriving a house which practical men might live in, but merely of hanging in mid-air, far out of reach of the sordid and material world of the present, a cloud-palace for an ideal humanity.⁴²

Bellamy did, during the composition of *Looking Backward*, which occupied him from late 1886 to the publication of the first edition by Boston’s Ticknor publishing house in late January 1888, dramatically revise his purpose, transforming his novel from “a mere fairy tale of social perfection” into “the vehicle of a definite scheme of industrial reorganization.”⁴³

³⁸ Edward Bellamy, *Equality* (New York: D. Appleton, 1897), 80.

³⁹ Edward Bellamy, “The Ethics of the Strike,” *Springfield (MA) Union*, April 15, 1875, quoted in Cantor, “The Backward Look of Bellamy’s Socialism,” 29.

⁴⁰ For an account that situates Bellamy, along with Henry George and Henry Demarest Lloyd, within a modernizing reformist tradition, see John L. Thomas, *Alternative America: Henry George, Edward Bellamy, Henry Demarest Lloyd and the Adversary Tradition* (Cambridge, MA: Belknap Press, 1983).

⁴¹ Howells, “Editor’s Study,” 154.

⁴² Bellamy, “How I Came to Write ‘Looking Backward,’” 1.

⁴³ *Ibid.* In this essay, Bellamy recalled that his reconceptualization of the novel occurred when he decided that the industrial army was not a metaphor but in a fact a model for his rationalized, nationalized utopia. Bellamy drew

Bellamy's revision of his novel proved enormously successful in the literary marketplace, as *Looking Backward* quickly became a bestseller, with a widespread and diverse readership. After the release of a cheaper edition in June 1888, sales took off, eclipsing 100,000 copies in the novel's second year, and 400,000 by 1897.⁴⁴ In 1890 editions were published in England, France, and Germany, and the book was translated widely well into the twentieth century. Demand for the book spiked in the American West, and it quickly became a best-selling paperback in Midwestern and Great Plains farming regions. Copies were not only sold but also offered free or discounted to new subscribers to various periodicals like the *Ladies' Home Journal*, the *Coming Nation*, the *Indianapolis Leader*, and Farmers' Alliance newspapers.⁴⁵

Bellamy's book circulated through rural America in large part due to the efforts of agrarian organizations, among them the Grangers and the Farmers' Alliance. At a Grangers' picnic in central Pennsylvania in 1890, five hundred copies of *Looking Backward* were given away.⁴⁶ In 1889, the Farmers' Alliance marketed Bellamy's book in conjunction with a subscription to its newspaper (as did many other agrarian newspapers), and ultimately succeeded in getting an estimated several hundred thousand copies of *Looking Backward* (along with Bellamy's 1879 *The Duke of Stockbridge*, Bellamy's little-known work of historical fiction that dramatized the 1787 Shays' Rebellion) to rural readers.⁴⁷ As the editor of the *Farmers' Alliance* newspaper in Lincoln, Nebraska exclaimed in 1889, "The sale it is having is almost

contemporary criticism for the militarism of his scheme but rejected such a critique outright, arguing that the federal government bureaucracy, with its legions of clerks, was in some important respects already similar. Bellamy singled out the U.S. Post Office, with what he counted as 100,000 or 200,000 employees spread across the country, as a specific analogy to his national industrial army. Edward Bellamy, "'Looking Backward' Again," *North American Review* 150 (March 1890): 353-54.

⁴⁴ Bowman, *The Year 2000*, 121.

⁴⁵ Thomas, introduction to *Looking Backward*, 1; Bowman, *The Year 2000*, 121.

⁴⁶ James J. Kopp, "Looking Backward at Edward Bellamy's Influence in Oregon, 1888-1936," *Oregon Historical Quarterly* 104, no. 1 (2003); Bowman, *The Year 2000*, 119, 121; Thomas, introduction to *Looking Backward*, 1.

⁴⁷ Kopp, "Looking Backward at Edward Bellamy's Influence in Oregon, 1888-1936." For a discussion of the circulation of *Looking Backward* by Populist editors and state-level Farmers' Alliance and Populist organizations, as well as the proliferation of Bellamyite principles in the rural press, see Christine McHugh, "Midwestern Populist Leadership and Edward Bellamy: 'Looking Backward' into the Future," *American Studies* 19, no. 2 (1978): 58-64.

unprecedented. Since the phenomenal sale of *Uncle Tom's Cabin* no book has had so wide a sale.”⁴⁸

As Bellamy's prophecy circulated throughout the nation, it was appropriated by a diverse assemblage of social groups, each of whom seized upon different facets of the book's social vision as reflective of or resonant with its own. Along with the Grangers and the Farmers' Alliance, reform groups like the Woman's Christian Temperance Union and the National Council of Women, religious dissenters like the Theosophists and Christian socialists, labor unions and socialists were all enthusiastic readers of *Looking Backward*.⁴⁹ Although Bellamy's detractors complained about the absence of a concrete blueprint for reform, the lack of a map to guide them from 1888 to a fully realized Nationalist future, his emphasis on prophecy over prescription was precisely what garnered him such a diverse following.⁵⁰ As historian John L. Thomas puts it, “[f]or a vast number of American readers *Looking Backward* was a moral restorative, a tonic not so different from the patent-medicine panaceas of the day guaranteed to cure every ailment. Like the gaudy advertisements he so deplored, Bellamy promised something for everybody.”⁵¹

Bellamy, if somewhat reluctantly drawn into the public eye, became immediately aware of the political potency of his utopian prophecy.⁵² He wrote to publisher Benjamin Ticknor in June 1888, “If you will kindly sell 50,000 copies of *Looking Backward* for me, I will engage to

⁴⁸ *Farmers' Alliance* (Lincoln), December 21, 1889, quoted in McHugh, “Midwestern Populist Leadership and Edward Bellamy: ‘Looking Backward’ into the Future,” 61.

⁴⁹ Bowman, *The Year 2000*, 119; Kopp, “Looking Backward at Edward Bellamy's Influence in Oregon, 1888-1936.”

⁵⁰ For an overview of the various criticisms leveled against *Looking Backward* by Bellamy's contemporaries, see Bowman, *The Year 2000*, 139; Spann, *Brotherly Tomorrows*, 203-5.

⁵¹ Thomas, introduction to *Looking Backward*, 86-87.

⁵² Bellamy's wife later noted that her husband, “a recluse by nature, . . . fled from any sort of publicity as from a pestilence.” Emma Bellamy, “Edward Bellamy As I Knew Him,” undated manuscript, series 5, drawer 1, folder 2, Edward Bellamy Memorial Archives.

give the voters of 1892 a platform worth voting for, and furnish the voters.”⁵³ Indeed, Bellamy’s book—like no other in American history—directly inspired a groundswell of political activism through the establishment of educational clubs that Bellamy enthusiasts created to discuss and disseminate the principles of Nationalism. And it is important to note that “Bellamyism” was not a singular movement based on an explicit formulation of political theory but rather a constellation of diverse reformist impulses and ideas.⁵⁴

Boston was home to the first Nationalist Club, founded in December 1888 by journalists and Theosophists Sylvester Baxter and Cyrus Willard, among others, and incorporated as the Nationalist Education Association. The largely middle- and upper-class members of the Boston Nationalist Club—among them abolitionist T. W. Higginson, Unitarian minister Edward Everett Hale, temperance reformer Frances Willard, and writer William Dean Howells—participated in discussions, lectures, and publication of pamphlets and the *Nationalist*, which was published monthly from May 1889 to April 1891, when it folded for financial reasons. Hundreds of similar clubs followed, with estimates ranging from several hundred to five hundred Nationalist clubs in existence across the country by 1890. At first concentrated primarily in major cities in the northeast and in California, Nationalist clubs quickly caught on in rural areas as well.⁵⁵

Nationalist clubs, through their periodicals, pamphlets, and public lectures, amplified the program Bellamy set out in *Looking Backward*. Nationalists advocated government ownership of first the railroad industry, then the telegraph and telephone industries and their integration into the Post Office, then the takeover of the express delivery business by the Post Office, then the nationalization of coal mines, and then the municipal administration of lighting, heating, and

⁵³ Bellamy to Benjamin Ticknor, 15 June 1888, Bellamy Papers, quoted in Thomas, introduction to *Looking Backward*, 69.

⁵⁴ Rosemont, “Bellamy’s Radicalism Reclaimed,” 148.

⁵⁵ For an account of the origins of Nationalism that situates the movement within the tradition of earlier nineteenth-century cooperative movements like Fourierism, see Spann, *Brotherly Tomorrows*, chap. 12.

transportation services. Other Nationalist principles included civil service reform, referendum and recall, and compulsory education. Nationalism's ultimate goal was the foundational principle of *Looking Backward*: true economic equality as the guarantor of political liberty, equal opportunity, and a universal brotherhood.⁵⁶

The early days of the Nationalist movement, characterized by the moralistic and didactic bent of the *Nationalist*, yielded to a more politically activist era in which Bellamy became a more visible spokesman for Nationalism and became personally involved in the movement itself—in no small part in order to address his critics—and especially in the publication of the weekly magazine the *New Nation*, which he launched in January 1891.⁵⁷ In that same year, the Nationalist movement ran its first ticket in a state election in Rhode Island, officially signaling the entry of Bellamyite principles into electoral politics.⁵⁸

Bellamy “‘virtually founded the Populist Party,’” according to William Dean Howells, and Populist detractors largely concurred, blaming Bellamy's novel for instigating an agrarian uprising.⁵⁹ Historians have pointed to the overlapping ideologies of Nationalism and Populism and have traced the migration of Bellamyite ideals, such as the nationalization of railroad, telegraph, and telephone industries, into Populist circles.⁶⁰ For his part, Bellamy, who both attended and spoke at People's Party events in the early 1890s, “considered Populism a practical

⁵⁶ Bellamy, “Nationalism—Principles, Purposes,” address delivered in Boston, 19 December 1889, reprinted in *Edward Bellamy Speaks Again!* 62-66; Bowman, *The Year 2000*, 132-33; Sylvester Baxter, “What is Nationalism?” *Nationalist* 1 (May 1889): 8-12. Bellamy did not understand the contemporary critique of his Nationalist scheme as restrictive of individual freedom and insisted that a nationalized industrial army would liberate each individual from the fetters of economic inequality and industrial wage slavery. For a discussion of Bellamy's conception of a “collectivistic freedom,” see Boller, *Freedom and Fate in American Thought*, chap. 6.

⁵⁷ The *New Nation* folded in February 1894, a casualty of the economic depression of 1893 as well as Bellamy's failing health and finances. Bowman, *The Year 2000*, 136.

⁵⁸ Nationalist candidates had run for California and Michigan Congressional seats in 1890, as well as for various seats in state legislatures. *Ibid.*, 133.

⁵⁹ William Dean Howells, *Literature and Life: Studies* (New York: Harper & Brothers, 1902), 294, quoted in Elizabeth Sadler, “One Book's Influence: Edward Bellamy's ‘Looking Backward,’” *New England Quarterly* 17, no. 4 (1944): 538; McHugh, “Midwestern Populist Leadership and Edward Bellamy,” 60.

⁶⁰ For an overview of historians' assessment of Bellamy's influence on Populism, see McHugh, “Midwestern Populist Leadership and Edward Bellamy,” 59-60.

testing of his ideas,” in John L. Thomas’s estimation.⁶¹ Populism’s promise of radical economic restructuring, then, was for Bellamy a present incarnation of his future vision, a potential link between the late nineteenth and twentieth centuries.⁶²

Looking Backward is Bellamy’s “history of the future” as revealed through the experiences of Julian West, an aristocratic Bostonian who, after undergoing mesmeric treatment for his insomnia in 1887, wakes up in Boston in the year 2000.⁶³ Bellamy’s society of the future is a cooperative commonwealth based on the principles of solidarity and brotherly love and the practices of a nationalized industrial democracy, with none of the competition, market volatility, and labor unrest of the Gilded Age capitalist economy. Guided through the year 2000 by Bellamy’s spokesman Dr. Leete and his daughter Edith (who is ultimately revealed to be the granddaughter of Julian’s fiancée Edith of 1887), Julian witnesses the result of a “material and moral transformation”: true economic and political equality in the Nationalist society of the future.⁶⁴

Julian is surprised to learn of the absence of political parties and politicians, merchants and bankers, servants and domestic labor, and corruption and crime in the year 2000. And he is awed by an array of what Dr. Leete and Edith depict as dramatic economic and social improvements over his 1887 Boston: an industrial army of equally-compensated workers content to work at their chosen vocation from the ages of twenty-one until retirement at forty-five; a centralized system of purchasing and delivering standardized consumer goods in place of the late-nineteenth-century department store; true gender equality; and a flourishing artistic and

⁶¹ Bowman, *The Year 2000*, 135; Thomas, introduction to *Looking Backward*, 82.

⁶² Although the Nationalist and Populist movements did essentially converge by the election of 1896, their congruence was not complete. Some of the most fervent early Nationalists were disgruntled when Bellamy made overtures toward the People’s Party in 1892, and Bellamy was wary of what he deemed single-plank silverism. For a nuanced discussion of the relationship between Nationalism and Populism, see Spann, *Brotherly Tomorrows*, 198-207.

⁶³ Daphne Patai, introduction to *Looking Backward, 1888-1888: Essays on Edward Bellamy*, 10.

⁶⁴ Bellamy, *Looking Backward*, xxi.

literary culture. Bellamy characterized *Looking Backward* as “a romance of the ideal nation,” and, as I will argue in what follows, Bellamy’s ideal nation was a perfectly predictable place, *Looking Backward* a romance of certainty.⁶⁵

In *Looking Backward*, Bellamy’s Boston of the year 1887 is afflicted with the same uncertainty and lack of foresight that plagues the earthlings of “The Blindman’s World.” Dr. Leete, Bellamy’s spokesman of the year 2000, declares that late-nineteenth-century Americans were hampered by a “singular blindness . . . to the signs of the times” and so could not foresee the material and moral evolution on the horizon.⁶⁶ Bellamy’s time-traveling hero Julian West agrees with Dr. Leete’s diagnosis, acknowledging that Bostonians of his day adhered to the maxim that hindsight is better than foresight. And in a later conversation with his love interest Edith, Julian confesses that it is easier to look back a thousand years than to look forward fifty.⁶⁷

When Julian returns in a dream from the year 2000 to his Boston of the year 1887, he observes that every person is haunted by “the specter of Uncertainty” whispering this in his ear:

“Do your work never so well . . . rise early and toil till late, rob cunningly or serve faithfully, you shall never know security. Rich you may be now and still come to poverty at last. Leave never so much wealth to your children, you cannot buy the assurance that your son may not be servant of your servant, or that your daughter will not have to sell herself for bread.”⁶⁸

The “specter of Uncertainty” in the nineteenth century, in Bellamy’s depiction, ranged from market fluctuations to impossible-to-calculate supply and demand to boom and bust business cycles to unpredictable weather to inordinately high rates of business failure. As Bellamy’s spokesman Dr. Leete puts it, any venture of a “private capitalist was always a doubtful experiment” since economic crises were no more predictable or preventable than droughts or

⁶⁵ Bellamy, “How I Came to Write ‘Looking Backward,’” 2.

⁶⁶ Bellamy, *Looking Backward*, 49.

⁶⁷ *Ibid.*, 50, 124.

⁶⁸ *Ibid.*, 212.

hurricanes in the late nineteenth century.⁶⁹ And Dr. Leete clearly speaks for Edward Bellamy the father when he says of Julian's late-nineteenth-century world that "the future was so uncertain that to assume parental responsibilities much have often seemed like a criminal risk."⁷⁰ In these and several other passages, Bellamy explicitly characterizes virtually all the enterprises of late-century Boston in the language of uncertainty and risk.⁷¹

As Julian wanders the streets of Boston in his dream, a passerby gives him a card advertising life insurance. At that moment Julian realizes that life insurance in the nineteenth century is only, as he puts it, "a partial protection from uncertainty." What he calls "true life insurance" exists only in the year 2000, when policies were underwritten not by individual insurance firms but rather by "one hundred million fellow countrymen."⁷² In an address delivered in Boston in 1889, Bellamy described his nationalized utopia as "a universal insurance company," but in fact insurance mechanisms are technically not necessary in the year 2000, since no individual requires any protection from uncertainty.⁷³ The year 2000 is devoid of inefficient and wasteful production, private wealth accumulation, and market speculation, rendering economic uncertainty an artifact of the late nineteenth century.⁷⁴ As Dr. Leete points out, there is no longer any need to save for an unpredictable economic future: "No man any more has any care for the morrow, either for himself or his children, for the nation guarantees the nurture, education, and comfortable maintenance of every citizen from the cradle to the grave."⁷⁵ And even the uncertain weather has been rendered inconsequential in the year 2000: the sidewalks

⁶⁹ *Ibid.*, 157, 159-60.

⁷⁰ *Ibid.*, 175.

⁷¹ *Ibid.*, 131, 157, 159-60, 163.

⁷² *Ibid.*, 212.

⁷³ Edward Bellamy, "Plutocracy or Nationalism—Which?" in *Edward Bellamy Speaks Again!* 44.

⁷⁴ For a characterization of Bellamy's year 2000 as one of economic certainty, see Bowman, *Edward Bellamy*, 31, 38.

⁷⁵ Bellamy, *Looking Backward*, 73.

have retractable coverings that completely protect pedestrians from stormy weather, making umbrellas and boots obsolete.⁷⁶

Retractable sidewalk coverings are just one of the technological innovations of Bellamy's Boston in the year 2000—his credit cards, pneumatic delivery tubes, and telephone broadcasting network are well-known examples—that render the ideal society of the future a fundamentally constant, certain, predictable one. But such technologies of certainty are not ends in themselves but rather means to Bellamy's utopian end: a communal society built on a foundation of Christian solidarity and socioeconomic equality. And Bellamy's own prophecy of such a utopia had at its core not a technocratic vision but rather a prophetic vision that incorporated technological innovations into its broader program for a world devoid of socioeconomic uncertainty, a world in which the future is no longer unpredictable. Now of course Bellamy, who railed against the Calvinist dogma in which remembered sin and guilt overdetermined the present, did not literally believe in a predetermined future.⁷⁷

But for Bellamy prospection did have real literary, social, and political value. His early literary experiments with the psychological value of the predictive imagination culminated in *Looking Backward*, essentially a romance of economic certainty. Also, Bellamy believed in the power of the predictive imagination to lift the veil not from the future but from the present, prescribing prospection for the sake of retrospection and thus introspection. Bellamy succeeded in orienting a generation of readers and writers to the far-off future, and judging by the sheer number of his literary imitators, it is clear that Bellamy's vision of the future provided a literary mechanism for others to launch their own social critiques of the present age of progress and

⁷⁶ Ibid., 110. On Bellamy's concern with neutralizing the damage and inconvenience wrought by weather and climactic changes in *Looking Backward* and *Equality*, see William B. Meyer, "Edward Bellamy and the Weather of Utopia," *Geographical Review* 94, no. 1 (2004): 43-54.

⁷⁷ Boller, *Freedom and Fate in American Thought*, 141.

poverty. And finally, as one historian has noted, Bellamy's prophecy appealed to the Populist movement that had firm ideological roots in the revolutionary republicanism of the past and a powerful critique of present economic conditions but lacked a compelling vision for the future.⁷⁸

Bellamy, in his Postscript to the second edition of *Looking Backward*, asserted that "*Looking Backward*, although in form a fanciful romance, is intended, in all seriousness, as a forecast, in accordance with the principles of evolution, of the next stage in the industrial and social development of humanity."⁷⁹ One of the most important elements of Bellamy's social and economic forecast was a far more predictable future, a future insulated from the uncertainty and volatility of the Gilded Age economy.⁸⁰

Historian John L. Thomas argues that Bellamy was "less an engineer than a prophet."⁸¹ But a reading of Bellamy's earlier and often overlooked writing reminds us that he was indeed both prophet and engineer, and that his literary engineering of a technological utopia came about precisely because of, and not despite, his literary experiments with predicting the future. In *Looking Backward*, Edward Bellamy's prophecy of a technological utopia in the year 2000, the most important machine is a metaphorical one—the "vast [machine]" of the industrial army that produces a society devoid of uncertainty—and the origins of that machine lie in his literary concern with the promise and peril of looking forward in late-nineteenth-century America.

Although the Nationalist movement folded along with the Populist moment in 1896, Bellamy's utopian prophecy was widely read well into the twentieth century. Bellamy's account of an essentially Americanized socialism had an enormous influence on American socialists,

⁷⁸ McHugh, "Midwestern Populist Leadership and Edward Bellamy," 64-71.

⁷⁹ Bellamy, *Looking Backward*, 220.

⁸⁰ Bellamy did not, as many of his contemporary critics complained, provide anything like a detailed blueprint for how to realize the equality, peace, and prosperity of the year 2000. For an overview of *Looking Backward's* critical reception and Bellamy's response in *Equality*, see Vernon Louis Parrington, Jr., *American Dreams: A Study of American Utopias* (New York: Russell & Russell, 1964 [1947]), chap. 9.

⁸¹ Thomas, introduction to *Looking Backward*, 50, 69.

chief among them Daniel De Leon, a Nationalist Club member who would become the Socialist Labor Party leader in 1892, and Eugene V. Debs, who credited Bellamy with steering him and thousands of others toward the Socialist movement.⁸² Bellamy's vision of a peaceful material and moral evolution—devoid of the class struggle of a Marxist revolution—also appealed to Progressive reformers, but its biggest twentieth-century resurgence came in the 1930s, both in the United States and in Europe. During the 1930s, *Looking Backward* appeared second to *Das Kapital* on three different lists—Charles Beard's, John Dewey's, and Edward Weeks's—of the most influential books published since 1885.⁸³

In the early 1930s, the establishment of the Utopian Society of America in Los Angeles, the founding of the Edward Bellamy Association of New York, the rebirth of Bellamy clubs, especially in California, the emergence of the Technocracy movement, and Upton Sinclair's EPIC gubernatorial run in California in 1934 all contributed to a Depression-era Bellamy revival.⁸⁴ Bellamy's daughter, Marion Bellamy Earnshaw, dated the revival to shortly “after Mr. Hoover had stopped assuring the country that prosperity was just around the corner, probably in 1931 or 1932.”⁸⁵ Bellamy promised more optimism than did Hoover, at least according to the All States Loyal Bellamy Associates, a Los Angeles organization that coordinated membership across twenty-four states and hailed Bellamy as “the greatest Statesman America has ever produced . . . our greatest economist . . . our greatest Moralist . . . one of the

⁸² On Bellamy's influence on the American socialist movement, see Rosemont, “Bellamy's Radicalism Reclaimed,” 162-71; Sadler, “One Book's Influence.”

⁸³ Sadler, “One Book's Influence,” 553.

⁸⁴ Thomas, introduction to *Looking Backward*, 85; Sadler, “One Book's Influence,” 544-50; “The Edward Bellamy Group of Brooklyn,” undated pamphlet, series 06, drawer 1, folder 1, Bellamy Memorial Archives. For an overview of Bellamyite influences in the 1930s, see James J. Kopp, “Edward Bellamy and the New Deal: The Revival of Bellamyism in the 1930s,” *Utopian Studies* 4 (1991): 10-16.

⁸⁵ Sadler, “One Book's Influence,” 546.

most sincere religionist[s] . . .”⁸⁶ And the Bellamy revival was no small uprising, at least according to the Bellamy Club No. 1 of Maine, which crowed that there were “at least 2,000,000 Socialists, Bellamyites, and Technocrats (Technocrats are Bellamyites with a new name . . .)” ready to unite forces in the launching of a national political party.⁸⁷

Although Bellamy has been described as “[e]ssentially a non-political observer of the American scene,” his ideas reverberated throughout the political scene of the 1930s.⁸⁸ In 1934 muckraker Ida Tarbell hailed Bellamy, along with Henry George, as one of the “New Dealers” of their day.⁸⁹ Bellamy’s daughter Marion Bellamy Earnshaw recalled that a friend who attended a Hollywood League of Women Voters luncheon with Eleanor Roosevelt sometime after her husband’s death learned that Franklin D. Roosevelt was indeed quite taken with Bellamy’s vision of Nationalism. As Marion Bellamy Earnshaw’s friend recalled, Eleanor Roosevelt responded to a question regarding the interest of her late husband—who published a book entitled *Looking Forward* in 1933—in Bellamyite principles with this anecdote:

“In the White House my husband had a very long desk—it was against a wall. Over the whole length of the desk against the wall were many books held in place by huge book-ends. Right in the center was the Bible and on either side of the Bible were Edward Bellamy’s ‘Looking Backward’ and ‘Equality.’—does that answer your question?”⁹⁰

A more modest endorsement of Bellamyism in the mid-1930s came from Henry A. Wallace, President Roosevelt’s Secretary of Agriculture, who informed Bellamy’s wife that he had found

⁸⁶ All States Loyal Bellamy Associates, “Proves He Looked Forward,” n.d., series 06, drawer 1, folder 20, Bellamy Memorial Archives.

⁸⁷ Bellamy No. 1 Club of Maine, “A Definite Plan of Action,” undated pamphlet, series 06, drawer 1, folder 1, Bellamy Memorial Archives.

⁸⁸ Thomas, introduction to *Looking Backward*, 86.

⁸⁹ Ida Tarbell, “New Dealers of the Seventies: Henry George and Edward Bellamy,” *Forum and Century* 92 (September 1934): 133-39.

⁹⁰ Marion Bellamy Earnshaw to Sylvia Bowman, 12 November 1963, series 04.01, drawer 1, folder 10, Bowman Collection; Sadler, “One Book’s Influence,” 554.

Bellamy's work "of great interest."⁹¹ More effusive praise came from Communist Party leader Earl Browder, who wrote to Emma Bellamy in 1934 that the Party's Manifesto at the Eighth National Convention represented the "modern development of the ideas of your dead husband, who made so rich a contribution to the revolutionary movement."⁹² The New Deal-era enthusiasm for Bellamyite principles waned quickly, though, as Nationalism began to take on an eerie resemblance to totalitarianism.⁹³

Although Bellamy's political legacy in the United States effectively ended with the coming of the Second World War, his legacy as a prophet persisted, in particular his celebrated role as an uncannily accurate technological forecaster. The All States Loyal Bellamy Association ran the headline "Proves He Looked Forward" above Bellamy's portrait in one of their publications in the 1930s.⁹⁴ Countless Bellamy clubs (and many historians) have trumpeted the accuracy of Bellamy's predictions, in *Looking Backward* and its 1897 sequel *Equality*, of technological innovations including radio broadcasting, credit cards, television (the electroscope, as Bellamy called it), airships, and the like.⁹⁵ In such accounts, Bellamy the prophet became the embodiment of a far more certain technological future.

In the same year that the People's Party—and Nationalism along with it—suffered defeat in the election of 1896, Edward Bellamy won a starring role in a life insurance advertisement as the prophet of certainty. Based entirely on the *Looking Backward* passage in which Julian

⁹¹ Henry A. Wallace to Emma S. Bellamy, 13 March 1934, series 08, drawer 2, folder 22, Bellamy Memorial Archives.

⁹² Earl Browder to Emma S. Bellamy, 8 May 1934, series 08, drawer 2, folder 36, Bowman Collection.

⁹³ Thomas, introduction to *Looking Backward*, 85. For an overview of Bellamy's legacy in the early twentieth century, see Thomas, *Alternative America*, chap. 15.

⁹⁴ All States Loyal Bellamy Associates, "Proves He Looked Forward," n.d., series 06, drawer 1, folder 20, Bellamy Memorial Archives.

⁹⁵ Alexander Scott, "He Predicted the Coming of Radio, Airplanes, Smooth Roads, and Even Television," reprint of radio address (Wellington, New Zealand: Edward Bellamy Society, Inc., 1936), series 06, drawer 1, folder 16, Bellamy Memorial Archives; William T. Gay, "Edward Bellamy, Nineteenth Century Futurist," *Futurist* (June 1967): 40-41, series 05, drawer 1, folder 19, Bellamy Memorial Archives.

encounters an insurance agent during his nightmarish return to a Boston plagued by the “specter of Uncertainty” in 1887, this pamphlet published by insurance executive Darwin P. Kingsley (who would become the president of New York Life in 1907) heralds life insurance as the singular mechanism by which an individual could render his family’s future less uncertain.⁹⁶

Life insurance, in Kingsley’s formulation, was the only forward-looking and rational aspect of the late nineteenth century, “the one sane idea in a world full of madmen.”⁹⁷ The weightiest obligation for a man living in such a world, Kingsley professed, was “providing some certainty not only for himself but for his family.” As Kingsley framed it, Bellamy’s prophecy provided a twenty-first century answer to the late-nineteenth-century’s “question of how a man may, with some degree of certainty, carry his own personality into the next generation, and give his family some guarantee which will not lapse with his own life . . .”⁹⁸ And, of course, Kingsley’s life insurance policy itself provided an answer to Bellamy’s own anguished question of how to insulate his children from their unforeseeable but certainly uncertain economic futures.

Kingsley’s life insurance pamphlet invoked Edward Bellamy’s personal crisis of certainty as well as the nation’s. But at the same time the advertisement depicted Bellamy as an embodiment of certainty, a forward-looking visionary who imagined a future far more predictable than Kingsley’s late-century “world full of madmen.” The man whom John Dewey would later hail as “The Great American Prophet” had become—through this pamphlet published by a wealthy insurance magnate who would no longer exist in *Looking Backward*—an instrument of profit in the present. And there is no small irony in the fact that Bellamy earned

⁹⁶ For a brief biography of Darwin Kingsley, see B. C. Forbes, *Men who are Making America* (New York: B. C. Forbes Publishing Co., 1916-17), 232-39.

⁹⁷ For an excellent discussion of the late-nineteenth-century insurance industry’s use of literary trade periodicals to reshape public conceptions of accident, risk, and uncertainty, see Puskar, “William Dean Howells and the Insurance of the Real.”

⁹⁸ D. P. Kingsley, “The First Business of the World,” pamphlet, 1896, series 11, drawer 2, folder 10, Bellamy Memorial Archives.

his starring role in an advertisement for the profitable life insurance industry precisely because of his prophetic vision of a utopian future devoid of profit. As we will see in the next chapter, prophecy-making was indeed a profitable cultural enterprise, and not only for the “Great American Prophet” but also for the hundreds of anonymous fortune-tellers and spirit mediums who served as prophets of everyday life in late-nineteenth-century urban America.

Chapter 7: Seers and Spirits

In chapters 7 and 8 I trace the policing and reimagining of occult prediction from the emergence of a thriving urban fortune-telling culture in post-Civil War America through a series of anti-divination prosecutions in the early twentieth century. This era's purveyors of occult prediction are fortune-tellers and spiritualists, who simultaneously delighted a public eager for foreknowledge and outraged critics who labeled them frauds and a social threat. To examine the simultaneous allure and risk ascribed to fortune-telling and spiritualism, I analyze popular, literary, and legal discourses of authenticity in occult prediction. Whether celebrated or vilified, fortune-telling and spiritualism captured the popular imagination during the late-nineteenth-century cultural crisis of certainty.

Occult prediction alleviated this crisis of certainty by offering promises or illusions of control over one's economic, social, and spiritual future. Fortune-tellers' predictions of money gained or lost supplied an antidote to the unpredictability of industrial capitalism and its regional and national markets. Fortune-telling also offered the urban public a way to negotiate the unfamiliar social terrain that was part of an increasingly anonymous urban life. Fortune-tellers' "romantic forecasting," as Jackson Lears terms it, took on greater significance when one might well end up marrying a family stranger rather than a family friend.¹ Spiritualism offered epistemological stability in an age shaped by increasingly liberal theology, evolutionary theory, and the rise of professionalized and positivist science. Spirit mediums who summoned empirical evidence of an otherworldly future, who confirmed that the dead did indeed go on living,

¹ Lears, *Something for Nothing*, 111.

provided one solution to what historians have commonly characterized as the “crisis of faith in the Gilded Age,” but what I see as part of a broader cultural crisis of certainty.²

But just as fortune-tellers’ and spirit mediums’ glimpses of the future could insulate one against the vicissitudes of chance, occult prediction could also provide less clarity, not more. As Jackson Lears observes in his recent history of luck in American culture, “[d]ivination hides as well as clarifies; it offers a fleeting glance at hidden truths but often leaves them obscure.”³ As I will illustrate, fortune-tellers and spirit mediums frequently perpetuated the very uncertainty they promised to assuage. As fortune-telling and spiritualism were put on trial in the late nineteenth and early twentieth centuries, public, literary, and legal discourses increasingly came to accept an epistemological uncertainty embedded in claims of occult foreknowledge. A simple phrase common to all antidiagnosis statutes—“pretending to tell fortunes”—proved to be quite complicated to interpret for early-twentieth-century state courts that were wrestling with this new norm of uncertainty and thus how to deal with those who dealt in foreknowledge.⁴ In this section I argue that occult prediction was reimagined in modern America: late-nineteenth-century anxieties about the character of allegedly fraudulent fortune-tellers and spirit mediums gave way to the early-twentieth-century assimilation of fortune-tellers into mass culture and a legal

² Karen Halttunen, *Confidence Men and Painted Women: A Study of Middle-class Culture in America, 1830-1870* (New Haven: Yale University Press, 1982), 206-7. Recent work in religious history has challenged the long-standing characterization of an increasingly secular American culture after 1870. In this chapter I demonstrate the popular fascination with spiritualism’s scientific religiosity throughout the 1870s and beyond. On recent historiographical shifts in religious history, see Jon Butler, “Jack-in-the-Box Faith: The Religion Problem in Modern American History,” *Journal of American History* 90, no. 4 (2004): 1357-78; John T. McGreevy, “Faith and Morals in the United States, 1865-Present,” *Reviews in American History* 26, no. 1 (1998): 239-54; David D. Hall, ed., *Lived Religion in America: Toward a History of Practice* (Princeton: Princeton University Press, 1997).

³ Lears, *Something for Nothing*, 14.

⁴ In a study of the working culture and popular representations of late-century urban fortune-tellers, Tammy Stone-Gordon acknowledges that fortune-tellers were both criminalized and assimilated in the Progressive Era and bases this assertion on cultural representations of seers in newspaper advertisements and films. However, New York fortune-tellers were arrested and prosecuted throughout the mid- to late nineteenth century. This chapter shares Stone-Gordon’s concern with fortune-tellers’ self-representation but situates it within a series of legal debates over the definition of fortune-telling. Tammy Stone-Gordon, “‘Fifty-Cent Sybils’: Occult Workers and the Symbolic Marketplace in the Urban U.S., 1850-1930” (PhD diss., Michigan State University, 1998).

acceptance of uncertainty in occult prediction. In short, the problem of late-nineteenth-century literary and legal discourses on fortune-telling and spiritualism was determining who had the right to predict; the problem in the early twentieth century was determining what kinds of predictions were being made. Through the turn of the twentieth century, the popular press, writers, and state courts struggled with the question of whether fortune-tellers and spirit mediums were pretending to predict; by the World War I era, the question had become whether they were pretending to predict with certainty.

Histories of middle-class culture in nineteenth-century America agree that questions of authenticity and hypocrisy loomed large on the urban scene. They do not agree, however, on whether imposture amounted to a private social crisis or an occasion for public entertainment. Karen Halttunen's *Confidence Men and Painted Women: A Study of Middle-class Culture in America, 1830-1870* (1982) defines hypocrisy as a threat to the social stability of an urbanizing America, a threat that advice and conduct manuals responded to by prescribing a new sentimental ideal of sincerity for the middle class. In *Rudeness and Civility: Manners in Nineteenth-Century Urban America* (1990), John F. Kasson also finds in his study of etiquette manuals a preoccupation with assessing the authenticity of an individual's character in social spaces from the street corner to the opera house, and he too blames the experience of the inscrutable, ever-expanding city as causing "enormous anxiety over . . . [a] crisis of meanings."⁵ James W. Cook's *The Arts of Deception: Playing with Fraud in the Age of Barnum* (2001) acknowledges the middle-class anxiety over how to differentiate between the genuine and the sham in social relations but challenges the dichotomy between authenticity and quackery that structured the earlier works of Halttunen and Kasson. Cook's study of the entertainment value of

⁵ John F. Kasson, *Rudeness and Civility: Manners in Nineteenth-Century Urban America* (New York: Hill and Wang, 1990), 5-7, 70, quotation on 70.

“artful deception” (e.g., automaton chess players, exotic displays, magic tricks, *trompe l’oeil* painting) analyzes stage trickery “not so much in terms of zero sum choices (truth-making versus unmaking, fraud versus exposé), but as a more slippery mode of middle-class play,--a play whose moral ambiguity and epistemological flexibility were always built into the process.”⁶

My analysis of occult prediction comports with Cook’s assertion that a nineteenth-century consuming public, far from accepting absolute categories of genuine and fake, was keenly attuned to such a complicated interplay of realism and deception and was constantly engaged in debates over the authenticity of public performances. What Cook does not emphasize, however, is the extent to which historical actors seized upon the very dichotomy that he urges historians to transcend. As I will demonstrate, fortune-tellers and spiritualists, along with their patrons and detractors, often employed rigid rhetorical distinctions between truth and fiction, science and faith, authenticity and quackery in their debates over the value and meaning of occult prediction.

Fortune-tellers worked their magic on American cities in the Gilded Age. Their services readily available, fortune-tellers often made the headlines as subjects of scandal and objects of police raids. With equally eager clients and critics, fortune-tellers drew both approbation and ire from their urban public.⁷ Fortune-telling was hardly new at the end of the nineteenth century, but its practitioners increased dramatically in number during the postbellum wave of urbanization. In 1855, the *New York Times* counted two hundred “astrologers, clairvoyants, and

⁶ James W. Cook, *The Arts of Deception: Playing with Fraud in the Age of Barnum* (Cambridge, MA: Harvard University Press, 2001), 28.

⁷ The term *fortune-telling* as it was used in the nineteenth century was a broad and sometimes vague phrase that encompassed a number of methods of divining the future, including astrology, palmistry, medical and business clairvoyance, card reading, tea leaf reading, channeling spirits, and conjuring. Stone-Gordon, “Fifty-Cent Sybils,” 6. Periodicals and fortune-tellers’ own advertisements sometimes used the word *fortune-teller* interchangeably with *seer* and *clairvoyant*, but other times drew important semantic distinctions between *fortune-teller* and other terms. In this chapter I generally opt for the more widely-used *fortune-teller* rather than *seer* or *clairvoyant*, and I make clear instances in which historical actors had specific motives for choosing one particular term over another.

fortunetellers” and called attention to a “nest” of fortune-telling parlors, declaring that “[t]he number of those dens and the success of the fortune-telling business gives the matter an importance to which it is not otherwise entitled.”⁸ In 1909, the *New York Times* counted one thousand fortune-tellers, who together took in an estimated ten thousand dollars each day.⁹ In 1882 a young South Brooklyn woman estimated that 90 percent of Brooklyn girls saw fortune-tellers on a regular basis, and by 1890, the *Brooklyn Daily Eagle* proclaimed the existence of a “fortune-telling fad” and declared that “there never was a time when fortune-telling in drawing rooms was so rife or apparently so much believed in. . . . The gypsies are avenged for ages of ridicule and palmistry is a rage. Everybody who has time to waste knows something of it.”¹⁰ And according to some estimations, enough people had enough time to waste to make fortune-telling a lucrative endeavor: in 1887 the *Brooklyn Eagle* noted that fortune-tellers could make a “comfortable living by exploring the future.”¹¹

By the turn of the century, the fad had intensified, as a Utah newspaper observed: “A morbid desire to get a peep into the future has become almost a craze . . .”¹² This late-century obsessive fascination with futures foretold can be considered part of what Jackson Lears has described as a “renewed interest in the therapeutic value of superstition” in which the cultural

⁸ “Fortune-Tellers and Fools,” *New York Daily Times*, November 23, 1855. This estimate was also quoted in “Fortune-telling in New York,” *Brooklyn Eagle*, December 6, 1855. For additional testimonials to the significant number of fortune-tellers in New York, see “Fortune-tellers,” *New York Daily Times*, August 6, 1852; “A Growing and Dangerous Class,” *New York Times*, February 4, 1867; “Fortune-telling,” *New York Times*, December 12, 1869; “Swindling Fortune-Tellers,” *New York Times*, July 24, 1873; “Exploring the Future,” *Brooklyn Eagle*, February 27, 1887.

⁹ “One Thousand Fortune-tellers,” *New York Times*, December 12, 1909. The U.S. Census also counted fortune-tellers, although they were surely underreported due to the increasing criminalization of fortune-telling in the late nineteenth century. As Stone-Gordon notes, the 1860 Census listed eight astrologers, but fortune-tellers of any kind did not appear again until the 1910 Census, which counted 1,600 “fortune-tellers, hypnotists, spiritualists, etc.” On the census counting of fortune-tellers and their professionalization around the turn of the century, see Stone-Gordon, “Fifty-Cent Sybils,” 223-24.

¹⁰ “Danger to Girls,” *Brooklyn Eagle*, May 14, 1882; “The Fortune-telling Fad,” *Brooklyn Eagle*, September 28, 1890.

¹¹ “Exploring the Future,” *Brooklyn Eagle*, February 27, 1887.

¹² “Fortune-telling,” *Deseret (UT) News*, February 12, 1898.

elite found new value in practices such as voodoo, mind-cure, and the study of folklore, practices that they had formerly dismissed as primitive and thus pointless.¹³

The turn-of-the-century fortune-telling craze had its roots thirty years earlier. The fortune-telling industry took off in the early 1870s, as fortune-tellers' advertisements began to be a regular and significant feature of daily newspapers.¹⁴ The *New York Herald* ran ads for between six and eight fortune-tellers each day in 1873, a publicity campaign that reached an estimated one thousand "victims" each week.¹⁵ The *Brooklyn Eagle* ran regular listings of clairvoyants for hire from 1850 through the turn of the century, featuring the following, among many others:

Dr. Bleecker, Medical and Business Clairvoyant, can be consulted in all cases of disease or business transactions . . .¹⁶

Mrs. Webster, born with a natural gift of foresight, tells how soon and how often you will marry, and all business affairs . . .¹⁷

If you want your future known go to Mme. Stillwell, the truest fortune teller living. . . .¹⁸

Noor Mahal, the famous Indian fortune teller, tells your life from the cradle to the grave, gives lucky numbers, cures rheumatism . . .¹⁹

Madame Latrove, reliable medical and business clairvoyant born with second sight, tells without questioning names, dates, events; information on winning horses, stocks, mines, medical examination by hair; magnetic healing. . . .²⁰

Mme. Barras . . . reads your life with great power; business changes, lawsuits, wills, divorces, health; tells whom and when to marry; brings separated together; causes speedy marriages; settles lovers' quarrels, etc. . . .²¹

Countess Habeba. The only distinguished Persian gypsy; scientific palm reader; remarkable, most successful clairvoyant; reveals your past, present and future; gives indispensable advice on courtship, business speculations, health, marriage; removes all

¹³ Lears, *Something for Nothing*, 215.

¹⁴ Stone-Gordon, "Fifty-Cent Sybils," 120.

¹⁵ "Fortune-Telling," *New York Times*, August 24, 1873. For a discussion of fortune-tellers' self-fashioning, as well as a comprehensive analysis of fortune-tellers' advertisements, see Stone-Gordon, "Fifty-Cent Sybils."

¹⁶ *Brooklyn Eagle*, November 17, 1869.

¹⁷ *Ibid.*

¹⁸ "Clairvoyants," *Brooklyn Eagle*, September 14, 1881.

¹⁹ *Ibid.*

²⁰ "Clairvoyants," *Brooklyn Eagle*, June 20, 1883.

²¹ "Clairvoyants," *Brooklyn Eagle*, June 16, 1887.

troubles; gives luck; satisfaction guaranteed; has unfailable herb remedy for all disorders of the blood, nerves, and stomach. . . .²²

This sampling of clairvoyant advertisements illustrates the diversity of fortune-tellers' practices and personas. "Professors" promised scientific expertise and masculine authority, whereas "Madames" and "Countesses" offered the wisdom and camaraderie of female confidantes as well as a European exoticism. Indeed, fortune-telling was a highly gendered practice in late-nineteenth-century cities: the clairvoyant classified ads listed mostly female practitioners, and the vast majority of their clients were women. A distinguished folklorist who surveyed fortune-telling advertisements at the end of the century observed that "the advertisements of the 'Madames' far outnumber those of the 'Professors.'"²³ A Brooklyn police officer interviewed in 1885 estimated that 90 percent of fortune-tellers and 99 percent of their clients were women. He went on to say that women went to fortune-tellers as often as men went to bars and noted that "those [women] who are not out and out believers in fortune-telling are few and far between."²⁴ Advertisements often declared "no gents," and when men were admitted, they were often charged one or two dollars, twice as much as women paid.²⁵ One

²² *Brooklyn Eagle*, April 5, 1896.

²³ Henry Carrington Bolton, "Fortune-Telling in America To-Day. A Study of Advertisements," *Journal of American Folklore* 8, no. 31 (1895): 299.

²⁴ "Fortune-tellers," *Brooklyn Eagle*, October 25, 1885. For an account of fortune-telling as a predominantly female enterprise, see also "Fortune-telling. The Black Art as Practiced in this City," *New York Times*, December 12, 1869.

²⁵ On the exclusion of men, see "Fortune-telling. The Black Art as Practiced in this City," *New York Times*, December 12, 1869; *Brooklyn Eagle*, November 6, 1883; "Clairvoyants," *Brooklyn Eagle*, November 21, 1883; "Clairvoyants," *Brooklyn Eagle*, September 26, 1885; *Brooklyn Eagle*, February 12, 1893; "She Told Fortunes," *Brooklyn Eagle*, May 20, 1893; *Brooklyn Eagle*, February 10, 1895; *Brooklyn Eagle*, June 16, 1895; *Brooklyn Eagle*, September 8, 1895; *Brooklyn Eagle*, January 26, 1896; *Brooklyn Eagle*, April 5, 1896; *Brooklyn Eagle*, July 17, 1898. On gendered fee scales, see *Brooklyn Eagle*, November 17, 1869; *Brooklyn Eagle*, September 19, 1883; "Clairvoyants," *Brooklyn Eagle*, January 16, 1884; "Clairvoyants," *Brooklyn Eagle*, March 11, 1884; "Clairvoyants," *Brooklyn Eagle*, October 22, 1884; "Clairvoyants," *Brooklyn Eagle*, October 20, 1885; *Brooklyn Eagle*, February 12, 1893; *Brooklyn Eagle*, June 16, 1895; *Brooklyn Eagle*, September 8, 1895; *Brooklyn Eagle*, January 26, 1896; *Brooklyn Eagle*, April 5, 1896; *Brooklyn Eagle*, October 13, 1896; *Brooklyn Eagle*, July 17, 1898; *Brooklyn Eagle*, April 10, 1898. Fees also varied according to the nature of the fortune being told; for instance, an English medical and business clairvoyant charged one dollar for medical predictions and two dollars for business predictions in 1884. *Brooklyn Eagle*, July 15, 1884.

fortune teller commented, “We don’t like men to call on us, for it is seldom that we can get them to believe what we say . . .”²⁶

Although fortune-tellers were primarily of the poorer classes, the racial, ethnic, and national identities they fashioned through their newspaper advertisements were extremely diverse.²⁷ The ethnic and racial exoticism of fortune-tellers’ ads was most often indicated by “gypsy,” but also by references to Western Europe, the mystical “Orient,” India, Africa, Eastern Europe, and numerous other locales.²⁸ In her study of the cultural representation of fortune-tellers as occult workers in this period, Tammy Stone-Gordon has noted that, through their advertisements, fortune-tellers used their status as exoticized “other” to legitimate their professional identity, and in much the same way, middle-class critics of fortune-telling seized upon the “otherness” of the poorer classes in their critiques.²⁹

Critics of fortune-telling as a social ill emphasized the squalor and disorder of clairvoyants’ domestic existence, depicting “old women, dirty, foul and unpleasant” living “in dirty tenement houses, where, in the midst of offensive odors, swarms of unkempt children, piles of dirt and oceans of filth, they commune with the stars through the congenial *media* of bad gin and worse rum.”³⁰ P. T. Barnum, who vilified fortune-tellers as the worst breed of humbug, declared that they “live in cheap and dirty houses that smell bad . . . Their rooms are ill-furnished, and often beset with wash-tubs, swill-pails, mops, and soiled clothes, their personal appearance is commonly unclean, homely, vulgar, coarse and ignorant, and often rummy.”³¹

²⁶ “Fortune-telling. The Black Art as Practiced in this City,” *New York Times*, December 12, 1869.

²⁷ On the primarily poorer clientele, see “Fortune-tellers,” *New York Daily Times*, August 6, 1852; *Ibid.*; “Swindling Fortune-Tellers,” *New York Times*, July 24, 1873; Stone-Gordon, “Fifty-Cent Sybils,” 124.

²⁸ Stone-Gordon, “Fifty-Cent-Sybils,” 124, 141.

²⁹ *Ibid.*, 134.

³⁰ “A Growing and Dangerous Class,” *New York Times*, February 4, 1867.

³¹ Quoted in Stone-Gordon, “Fifty-Cent-Sybils,” 95.

Despite Barnum's and others' emphasis on the sordid lives of fortune-tellers—many of whom were immigrants living in cramped urban dwellings—not all fortune-tellers or their clients were of the poorer classes. For patrons with more money to spend, the *New York Times* noted in 1867, “there are rascals who dress better, . . . upper-crust scamps.”³² In 1890 a *Pittsburg Dispatch* headline declared that the “Fortune-telling Fad” was “Making Its Way Into Fashionable Drawing Rooms,” and in general, fortune-tellers in the Gilded Age served a diverse clientele that included poor women and men, servants, upper-class women, and professional men.³³

One New York fortune teller commented that “. . . as for the women, we can make them believe anything we tell them, and what we don't know they tell us.”³⁴ Not all fortune seekers were such malleable dupes, however. One young Brooklyn woman confided, “Of course, we don't believe anything they [fortune-tellers] tell us.”³⁵ Why, then, did American women flock to fortune-telling parlors in late-nineteenth-century cities? This Brooklyn woman's skepticism suggests that fortune-telling's popularity had little to do with the ostensible veracity of the fortune and everything to do with the experience of the telling. The space of the fortune-telling parlor, often located in a cramped tenement house, provided clients with an escapist brand of entertainment tinged with the exotic. And although in the vast majority of visits clients had individual sessions with a fortune teller, consulting a seer was a social act that bound women together into a predictive community. Certainly other brands of late-century urban entertainment offered escapism and a shared community experience, but the experience of prediction brought clients through the doors time and again as they sought something different from the kind of

³² “A Growing and Dangerous Class,” *New York Times*, February 4, 1867.

³³ “The Fortune-telling Fad,” *Pittsburg Dispatch*, reprinted in *Brooklyn Eagle*, September 28, 1890; Stone-Gordon, “Fifty-Cent Sybils,” 123.

³⁴ “Fortune-telling. The Black Art as Practiced in this City,” *New York Times*, December 12, 1869.

³⁵ “Danger to Girls. The Alarming Number of Young Ladies who Visit Clairvoyants,” *Brooklyn Eagle*, May 14, 1882.

entertainment they could find in dance halls, amusement parks, and other urban spaces.³⁶

Fortune-tellers ostensibly sold glimpses of the future, but to many clients seers provided a richer experience of the present by enabling them to imagine a future of personal prosperity and fulfillment.

Fortune-telling was enormously popular in urbanizing America because it offered the utopian illusion of control over one's present and future in a rapidly changing modern world of interdependent markets, in which, according to Jackson Lears, "ordinary people's livelihoods increasingly depended on decisions made in distant cities, on circumstances beyond the individual's control."³⁷ Patrons often asked fortune-tellers to look deep into the present, whether to locate a lost piece of jewelry, assess a spouse's fidelity, or find a missing relative, and fortune-tellers also provided reassurance in the present through their promises of "a long life, and the three great desideratums thereto, health, wealth and happiness."³⁸ Of course fortune-tellers couched their prophecies in only the most general terms, and several mid- to late-century newspaper editorials exposed vagueness as the trick of the fortune-telling trade.³⁹ And obviously the vaguer the prediction, the greater the chance that it might ring true, as one writer noted in 1873: "Persons believe in the predictions of fortune-tellers for the seemingly excellent reason that such predictions are repeatedly fulfilled. They do not notice that (setting apart happy

³⁶ On the spaces of urban leisure, see Kathy Lee Peiss, *Cheap Amusements: Working Women and Leisure in Turn-of-the-Century New York* (Philadelphia: Temple University Press, 1986).

³⁷ Lears, *Something for Nothing*, 151. Fortune-telling's appeal as a glimpse of certainty in an uncertain world was not uniquely American. David Allen Harvey ascribes a similar appeal to French fortune-telling in periods of political and social instability (e.g., during World War I). David Allen Harvey, "Fortune-Tellers in the French Courts: Antidivination Prosecutions in the Nineteenth and Twentieth Centuries," *French Historical Studies* 28, no. 1 (2005): 145.

³⁸ "Seeking Seers," *Brooklyn Eagle*, March 5, 1891; "Missing Emily," *Brooklyn Eagle*, July 17, 1889; "Fortune-telling. The Black Art as Practiced in this City," *New York Times*, December 12, 1869.

³⁹ "Fortune-Tellers and Fools," *New York Times*, November 23, 1855; "Fortune-telling. The Black Art as Practiced in this City," *New York Times*, December 12, 1869; "Soothsayers in Trouble," *New York Times*, April 23, 1875; "Fortune-tellers," *Brooklyn Eagle*, October 25, 1885.

guesses based on known facts) there would be as many fulfillments if every prediction had been precisely reversed.”⁴⁰

The ubiquity and popularity of fortune-tellers in postbellum New York elicited fervent critiques of fortune-telling as a fraudulent, foolish, and dissolute feature of urban life. Newspaper columnists before and after the Civil War vilified the practice of fortune-telling as an “immoral and abominable business,” “quiet and unobtrusive robbery,” “a vulgar exhibition of pretended sorcery, which should not deceive even a child,” and a “dishonorable trade.”⁴¹ Fortune-tellers themselves were branded “imposters” and “lying sorcerers,” “vile and unscrupulous hags,” “harpies,” “swindlers,” “shameless creatures,” and “pests of society,” who, “having constructed their webs, like the spider, wait for the unsuspecting fly to enter.”⁴² The spider’s web metaphor nicely captures the prevailing belief that fortune-tellers preyed upon a naïve public too easily ensnared by easy assurances and false promises. But the spider was not merely clever; it was predatory. Newspaper columnists warned of serious consequences that went far beyond a mere swindle, declaring in one instance that “[i]t is impossible to calculate the amount of ruin which clairvoyants and fortune-tellers work on the simple and weak-minded.”⁴³

Customers who dropped anywhere from five cents to five dollars into the palms of their fortune-tellers were not, in the minds of critics, getting anything in return.⁴⁴ And stories abounded of unwitting upper-class patrons who were swindled out of thousands of dollars by

⁴⁰ *Cornhill Magazine*, quoted in “Superstitions,” *New York Times*, January 5, 1873.

⁴¹ “Fortune-tellers,” *New York Daily Times*, August 6, 1852; “Fortune-Tellers and Fools,” *New York Daily Times*, November 23, 1855; “Letters to the Editor,” *New York Times*, September 18, 1876.

⁴² “Fortune-Tellers and Fools,” *New York Daily Times*, November 23, 1855; “A Growing and Dangerous Class,” *New York Times*, February 4, 1867; “Swindling Fortune-Tellers,” *New York Times*, July 24, 1873; “Soothsayers in Trouble,” *New York Times*, April 23, 1875; “Fortune-telling. The Black Art as Practiced in this City,” *New York Times*, December 12, 1869.

⁴³ “Fortune-Tellers and Fools,” *New York Daily Times*, November 23, 1855.

⁴⁴ “Fortune-telling. The Black Art as Practiced in this City,” *New York Times*, December 12, 1869.

unscrupulous seers.⁴⁵ But financial loss—big or small—was hardly the worst that could happen to one who visited a fortune teller. Personal misfortune and “terrible domestic misery” could easily follow on the heels of blind faith in foretellings, as one critic warned: “Sick people are prevented from consulting respectable medical practitioners, by a blind belief in these swindling quacks. Simple country people lose their time, their money and sometimes their reason in fruitless searches after lost or concealed treasures, aided and abetted by those self-instituted magicians. . . .”⁴⁶ In 1887, the *Brooklyn Eagle* reported on a New York whaling captain whose blind faith in erroneous predictions cost him his business: he had adhered for many years to a fortune teller’s advice to forsake the bountiful hunting grounds of the Arctic for waters closer to home, but he waited in vain for whales to descend on Long Island.⁴⁷

Sometimes the ruin wrought by fortune-tellers lasted a lifetime, as in the case of a forty-two-year-old Pennsylvania woman who, in 1861, confessed that she had loved her childhood sweetheart for twenty years but remained alone and unhappy when fortune-tellers pronounced her feelings unrequited.⁴⁸ And in the worst of circumstances, putting too much stock in a fortune teller’s prediction could be deadly. When forty-eight-year-old Mrs. George Thompson was run

⁴⁵ On the arrests of fortune-tellers throughout the second half of the nineteenth century, see “New-York City,” *New York Times*, January 13, 1854; “Unfortunate Fortune-Tellers—Eleven of Them Before the Mayor,” *New York Times*, October 23, 1858; “Fortune-tellers in Trouble at Pittsburgh,” *New York Times*, June 21, 1859; “Law Reports,” *New York Times*, November 26, 1865; “Look out for Her,” *Brooklyn Eagle*, September 10, 1867; “Fortune-Tellers in Trouble,” *New York Times*, July 25, 1873; “Soothsayers in Trouble,” *New York Times*, April 23, 1875; “Beware of Fortune-tellers,” *New York Times*, February 17, 1877; “Fortune-Tellers in Jersey City,” *New York Times*, December 8, 1877; “The Law on Fortune-telling,” *Brooklyn Eagle*, November 2, 1882; “Fortune-tellers Come to Grief,” *Brooklyn Eagle*, September 4, 1885; “She Told Fortunes,” *Brooklyn Eagle*, May 20, 1893; “The Stars in Their Courses Could Not Save the Astrologer From the Hands of a Process Server,” *Brooklyn Eagle*, March 18, 1895; “Fortune Teller Arrested,” *Brooklyn Eagle*, June 24, 1897; “After Fortune-tellers,” *Brooklyn Eagle*, November 19, 1897; “Fortune Teller Fined,” *Brooklyn Eagle*, December 24, 1897; “Fortune-telling Charged,” *Brooklyn Eagle*, May 2, 1898; “Paid Fortune-tellers \$800,” *Brooklyn Eagle*, November 12, 1898; “Over \$3,000 A Year For Telling Fortunes,” *Brooklyn Eagle*, March 24, 1900; “Palmist Held for Larceny,” *Brooklyn Eagle*, May 24, 1901.

⁴⁶ “Fortune-Tellers and Fools,” *New York Daily Times*, November 23, 1855.

⁴⁷ “Exploring the Future,” *Brooklyn Eagle*, February 27, 1887. On fortune-tellers’ inaccurate prophecies as newsworthy events, see “Fortune Teller Was Wrong,” *Brooklyn Eagle*, July 31, 1889; “Not Fulfilled,” *Brooklyn Eagle*, August 13, 1889; “A Fortune Teller’s Mistake,” *Brooklyn Eagle*, December 7, 1896; “Prophecy Was Bad,” *Brooklyn Eagle*, April 13, 1900.

⁴⁸ “Down on the Fortune-tellers,” *Brooklyn Eagle*, March 2, 1861.

over and killed by a Brooklyn, Bath and West End Railroad Company locomotive in the summer of 1889, newspaper coverage blamed the fortune that was found wrapped in blue paper in her purse, which landed fifteen yards from the tracks. It listed three predictions, the second of which was that Mrs. Thompson would live to the age of seventy-one. Witnesses and railroad employees believed that Mrs. Thompson could have moved out of the oncoming train's path in time, but, the newspaper wondered, perhaps the prophecy in her pocketbook "made her disbelieve in the necessity of taking ordinary precautions."⁴⁹ And in 1900, retired banker George Beller of Brooklyn committed suicide after a fortune teller informed him that he would soon suffer a significant financial setback.⁵⁰

Mrs. Thompson's accident and Mr. Beller's suicide notwithstanding, the most dangerous side effect of having one's fortune told, according to fortune-telling opponents, was a social, not an individual, crisis. Many critics feared that embracing fortune-telling meant abandoning an American work ethic and its moral imperatives.⁵¹ Consulting fortune-tellers would lead to "dissatisfaction with honest work" and would inspire "the foolish to endeavor to pry into the secrets of the future instead of going to work to make a future for themselves."⁵² An 1867 editorial titled "A Growing and Dangerous Class" vilified fortune-tellers and sounded this alarm: "We recognize the fact that the evil is growing and in the tremendous *éclat* attending the gift enterprises of the time we detect an element which, when fostered and encouraged, will breed a

⁴⁹ Not Fulfilled," *Brooklyn Daily Eagle*, August 13, 1889.

⁵⁰ "Day of Death in New York," *New York Times*, June 11, 1900.

⁵¹ On the character of the work ethic in nineteenth-century industrial America as distinct from the Protestant work ethic, see Daniel T. Rodgers, *The Work Ethic in Industrial America, 1850-1920* (Chicago: University of Chicago Press, 1974), 9.

⁵² Swindling Fortune-Tellers," *New York Times*, July 24, 1873; "Fortune-telling. The Black Art as Practiced in this City," *New York Times*, December 12, 1869.

race of future gamblers, a nation of enthusiasts and adventurers.”⁵³ Less than a decade later, an indignant *New York Times* reader wrote that fortune-telling

is far more nefarious than [lotteries and gambling], for in lotteries or gambling there is at least a chance of winning, and a man buys a ticket with his eyes open. But the fortune-teller, (although she assures her dupes that she can unfold the future to them,) yet will laugh behind their backs at their credulity, and makes money most shamelessly by false pretenses.⁵⁴

Idlers and gamblers were not the most dangerous members of fortune-tellers’ clientele, according to one editorial that feared a turn to “insanity and crime.”⁵⁵ Insanity might seem an extreme and alarmist assessment, but fortune-telling had long been associated with the seedy and sordid corners of urban life. Humorist Mortimer Thomson’s exposé *The Witches of New York, as encountered by Q. K. Philander Doesticks, P. B.* (1858) chronicles nineteen trips to New York fortune-tellers, some of whom ran illicit trades on the side, including counterfeiting, prostitution, and performing abortion procedures.⁵⁶

The fortune-telling craze posed a social crisis involving not only the “purveyor[s] of futurity” and their largely poor and working-class clientele, but also their upper-class patrons.⁵⁷ Newspaper coverage marginalized fortune-telling as unbecoming the upper class at the same time that it chronicled its hold on the moneyed elite. Commentary on fortune-telling in the mid-1890s distinguished between fortune-telling skeptics—“the thinking public”—and fortune-telling enthusiasts—“the other part of the public.”⁵⁸ But occasionally, the “other part of the public” told the “thinking public” how to think. In 1895, Madame Riis-Johnson, a Coney Island astrologer, boasted that she provided financial foresight to famed investor Hetty Green and counted many

⁵³ “A Growing and Dangerous Class,” *New York Times*, February 4, 1867.

⁵⁴ “Letters to the Editor,” *New York Times*, September 18, 1876. Like the various nineteenth-century critiques of fortune-telling, the moral discourse surrounding gambling was not a unified movement. Fabian, *Card Sharps and Bucket Shops*, 2.

⁵⁵ “Swindling Fortune-Tellers,” *New York Times*, July 24, 1873.

⁵⁶ Stone-Gordon, “Fifty-Cent-Sybils,” 98.

⁵⁷ “Swindling Fortune-Tellers,” *New York Times*, July 24, 1873.

⁵⁸ “A Fortune Teller’s Ill Fortune,” *Brooklyn Eagle*, December 12, 1896.

stock brokers among her clientele.⁵⁹ And frequently occult workers like Madame Riis-Johnson—the “other part of the public”—exploited popular superstition to defraud the “thinking public.” It was well known that railroad magnate Cornelius Vanderbilt put much stock in occult knowledge, which he did quite literally when he bankrolled a brokerage house opened in 1870 by suffragist and spiritualist Victoria Woodhull and her younger sister, Tennessee Claflin, who had been billed as the “Wonderful Child” for her clairvoyance and healing powers at age fourteen.⁶⁰ In 1880 the *Brooklyn Eagle* called Vanderbilt “easy prey” for these “shrewder clairvoyants” [Woodhull and Claflin], and Tennessee Claflin had indeed admitted in 1871 that she had ““humbugged a great many rich people, Vanderbilt included . . .””⁶¹

Victoria Woodhull gained much public notoriety as a spiritualist, women’s rights activist, editor and lecturer, radical labor reformer, free love advocate, and Equal Rights Party presidential candidate in 1872. The American Association of Spiritualists chose her as their president in 1871 and again in 1872, although she declined a second term.⁶² Her radical sexual politics inspired Thomas Nast to depict her as “Mrs. Satan” in an 1872 *Harper’s Weekly* cartoon, and she was often associated with sensational scandals, most notably her 1872 expose of Henry Ward Beecher’s adulterous affair with his biographer’s wife.⁶³

Woodhull is also significant as a figure who inhabited the world of vernacular prediction on the clairvoyant circuit as well as a world of more formalized, rationalized, and institutionalized financial prediction on Wall Street. Woodhull and Claflin’s brokerage firm, the

⁵⁹ “The Stars in Their Courses,” *Brooklyn Daily Eagle*, March 18, 1895.

⁶⁰ Barbara Goldsmith, *Other Powers: The Age of Suffrage, Spiritualism, and the Scandalous Victoria Woodhull* (New York: Knopf, 1998), 67.

⁶¹ “Ignorance and Superstition,” *Brooklyn Eagle*, April 6, 1880; “The Woodhull-Claflin Entanglement—Spiritualism and Fortune-Telling Declared to be the Root of the Evil,” *New York Times*, May 17, 1871.

⁶² McGarry, “Spectral Sexualities: Nineteenth-century Spiritualism, Moral Panics, and the Making of U.S. Obscenity Law,” 10.

⁶³ Thomas Nast, “Get Thee Behind Me, (Mrs.) Satan,” *Harper’s Weekly*, February 17, 1872.

first to be owned by women, attracted extensive press coverage as well as a host of detractors who denounced a female presence in the masculine preserve of finance capitalism.⁶⁴ The arrival of these “Bewitching Brokers” at 44 Broad Street on February 5, 1870, caused such “considerable commotion,” in the words of the *New York Herald*, that one hundred policemen were dispatched to control the onlookers that swarmed the streets and pressed their faces to the window of Woodhull, Claflin & Co., eager to catch a glimpse of “Vanderbilt’s Proteges.”⁶⁵ Some critiques imagined a highly sexualized atmosphere at Woodhull, Claflin and Co., with one periodical likening it to a brothel, but in truth the sisters were somewhat removed from the firm’s operation, with Woodhull’s second husband and others handling daily business.⁶⁶

Woodhull’s sexual politics aside, her early career as a spirit medium and leading figure in spiritualist organizations embodied a way of knowing that was, in the minds of nineteenth-century Americans, thoroughly feminized and thoroughly irrational.⁶⁷ The intuitive, emotional, and passive predictions of female spirit mediums were characterized by an irrational uncertainty, whereas the predictions of male stockbrokers promised a more rationalized uncertainty, marked by analytical calculation. Indeed, one newspaper account of the firm’s Broad Street opening attributed “a strong popular feeling against” the sisters not to their setting up shop in a male-dominated enterprise but rather to their previous careers as magnetic healers, clairvoyants, and trance mediums.⁶⁸ But ironically, it was precisely this expertise in occult prediction that compelled Vanderbilt to fund Woodhull, Claflin and Co., not any conventional experience in

⁶⁴ Amanda Frisken, *Victoria Woodhull’s Sexual Revolution: Political Theater and the Popular Press in Nineteenth-Century America* (Philadelphia: University of Pennsylvania Press, 2004), 2.

⁶⁵ Goldsmith, *Other Powers*, 192; Mary Gabriel, *Notorious Victoria: The Life of Victoria Woodhull, Uncensored* (Chapel Hill: Algonquin Books of Chapel Hill, 1998), 42, 47; “Wall-Street Aroused,” *New York Times*, February 6, 1870.

⁶⁶ Frisken, *Victoria Woodhull’s Sexual Revolution*, 1-2; Goldsmith, *Other Powers*, 191.

⁶⁷ Robert Laurence Moore, “The Spiritualist Medium: A Study of Female Professionalism in Victorian America,” *American Quarterly* 27, no. 2 (1975): 200-221.

⁶⁸ “Wall-Street Aroused,” *New York Times*, February 6, 1870.

investment banking or financial speculation.⁶⁹ Vanderbilt regularly shared profits with the sisters in return for their financial prophecies, and, after announcing an 80 percent dividend on Central Pacific Railroad stock in December 1868, he stated, ““It’s bound to go up. . . . Mrs. Woodhull said so in a trance.”⁷⁰ Woodhull’s dual career as spiritualist and stockbroker embodies the tension between ostensibly irrational and rational ways of knowing that animated public discourse surrounding spiritualism in the late nineteenth century.

Although nineteenth-century spiritualist practices were clearly distinct from fortune-telling, the two were oftentimes equated in popular rhetoric and legal proceedings. In 1883 the *Brooklyn Eagle* pronounced spiritualism dead, “relegated . . . to the limbo of fraudulent priestcraft and jugglery, where it may dwell with the gipsy camp of fortune-tellers who are down below.”⁷¹ Like fortune-tellers, nineteenth-century spirit mediums faced legal regulation in the form of significant fines or outright prohibition. In the 1890s numerous Philadelphia spirit mediums went to jail, having been swept up in fortune-telling raids conducted by city police.⁷² Although historians of spiritualism have generally excluded fortune-telling from their analyses, spirit mediums and fortune-tellers were often lumped together by the nineteenth-century popular press. Spiritualist practitioners occasionally took pains to distinguish themselves from fortune-tellers, but their critics often made no such distinction, believing that fortune-tellers and spirit mediums were up to the same epistemological tricks: both tried to predict the future, fortune-tellers in this world, and spirit mediums in the next.

⁶⁹ The sisters’ relationship with Vanderbilt began after Victoria’s spirit vision of Demosthenes compelled the entire Claflin clan to move to New York City in 1868, where the sisters’ father, Buck Claflin, arranged a meeting with Vanderbilt, who already had a keen interest in spiritualism. Goldsmith, *Other Powers*, 140-41.

⁷⁰ Goldsmith, *Other Powers*, 162.

⁷¹ “Spiritualistic Commemoration,” *Brooklyn Eagle*, April 2, 1883.

⁷² Moore, “The Spiritualist Medium,” 219.

The spiritualist movement in the United States began in 1848 in Hydesville, New York, amid the furor surrounding twelve-year-old Kate and thirteen-year-old Maggie Fox, sisters who apparently summoned mysterious otherworldly rappings, first in their hometown and subsequently in New York, where *Tribune* editor Horace Greeley served as their promoter.⁷³ Spiritualism found instant and widespread appeal in the wake of the Kate and Maggie Fox sensation, and it gained momentum in the 1850s until it was a “ubiquitous” element of American culture before the start of the Civil War.⁷⁴ Once the fame of the Fox sisters demonstrated that mediumship could be a profitable venture, spirit mediums materialized in every American city and town, and hundreds of spiritualist periodicals circulated in the 1850s.⁷⁵ Spiritualism’s postbellum heyday came to an end in the late 1870s, after which its cultural influence declined in the face of several historical trends, including an increasingly liberal Protestantism, the failure of spiritualism to establish a serious scientific reputation, and the rise of the Theosophical Society founded in 1875.⁷⁶

The spiritualist movement’s basic premise as well as its structure offered a highly individualistic and secular alternative to orthodox Christian theology.⁷⁷ The fundamental belief of spiritualists was that the spirits of the dead are always among the living, their presence brought into being by the spirit medium who provided empirical evidence of the afterlife through the physical practices of automatic writing, slate writing, trance, table levitation, playing of musical instruments, levitation, spirit photography, and séances.⁷⁸ Through these practices spiritualism essentially erased any theological distinction between the physical and the

⁷³ Kerr, *Mediums, and Spirit-Rappers, and Roaring Radicals*, 4.

⁷⁴ Braude, *Radical Spirits*, 2; Moore, *In Search of White Crows*, 64.

⁷⁵ Moore, “The Spiritualist Medium,” 200; Moore, *In Search of White Crows*, 13. Of these hundreds of spiritualist publications, many of which were short-lived, between twenty and thirty remained in print between the end of the 1840s and the 1890s. Braude, *Radical Spirits*, 26.

⁷⁶ Moore, *In Search of White Crows*, 64-66.

⁷⁷ *Ibid.*, 50.

⁷⁸ *Ibid.*, 25, 15-16.

metaphysical. Without any formal institutions, organizational hierarchy, or standard doctrine, spiritualism was a kind of Unitarianism for the masses, an optimistic liberal religious movement that “eliminated sin, hell, judgment, . . . [and] the need for a savior.”⁷⁹

Given the movement’s diffuse character and lack of institutional structure beyond the local level, it is not surprising that both nineteenth- and twentieth-century estimates of spiritualist membership vary dramatically, ranging from several hundred thousand members to seven million during the Civil War to eleven million in the 1870s.⁸⁰ The vast majority of spiritualists were English Protestants in the Northeast and Midwest, and although both men and women were practicing spirit mediums, the public status of mediumship was that of a distinctly female profession in which the cultural perception of young girls as passive, emotional, and irrational rendered them ideal conduits for messages from the spirit world.⁸¹ Within the spiritualist movement, two very different kinds of practices emerged: a more serious-minded religious celebration of spirit communication, and a more secular and often sensationalist performance of spirit manifestations.⁸²

The public and theatrical dimensions of secular spiritualism fueled widespread debates over the relative authenticity and quackery of spiritualist practice, debates that centered on the question of whether spirit mediums were merely pretending to contact the dead. One of the most popular spirit mediums of the American stage, Anna Eva Fay, was the target of numerous exposés and the subject of substantial press coverage throughout the late nineteenth century. Fay

⁷⁹ Braude, *Radical Spirits*, 7-8, 44, 36, 41.

⁸⁰ Moore, *In Search of White Crows*, 41, 13; Braude, *Radical Spirits*, 7-8, 25; Sheri Weinstein, “Technologies of Vision: Spiritualism and Science in Nineteenth-Century America,” in *Spectral America: Phantoms and the National Imagination*, ed. Jeffrey Andrew Weinstock (Madison: University of Wisconsin Press, 2004), 125. According to the 1890 Census, 45,000 Americans belonged to organized spiritualist societies, but this figure does not capture the extent of the informal and occasional affiliations that were more typical of American spiritualism. Braude, *Radical Spirits*, 25.

⁸¹ Braude, *Radical Spirits*, 28-29; Moore, “The Spiritualist Medium,” 201-2.

⁸² Weinstein, “Technologies of Vision,” 126-27.

is especially significant in that she combined the personas of spirit medium and fortune-teller in her sold-out shows.⁸³ Fay's career illustrates the popular fascination with (and critique of) an increasingly sensationalist and theatrical spiritualism after the movement's heyday ended in the late 1870s and reveals that questions of quackery and authenticity were not merely retrospective assessments of her performance but rather a fundamental part of her act.⁸⁴

Billed as the "Indescribable Phenomenon," Anna Eva Fay earned a variety of descriptions throughout an almost fifty-year career as a renowned spiritualist of the stage. A "mystic and mind-reader," "spiritual-physical test medium," "materializing medium," "Spiritualistic 'medium,'" "spiritualistic prestidigitator," "cabinet medium," and generally "mysterious woman," Fay toured the United States and Europe with a show that combined spiritualist communication and vaudeville theatricality.⁸⁵ Born Annie Eva Heathman in Southington, Ohio in the 1850s, Fay began her performing career at a young age, became a fixture on the vaudeville circuit by the 1870s, and was a household name by 1900, when a Memphis newspaper reported that the *Washington Post*, which the *Hagerstown Mail* accused of "appropriating its editorial matter" and publishing it days before it appeared in the *Mail*, had its very own Anna Eva Fay. And in a 1926 critique of the *New International Encyclopedia*, H. L. Mencken grumbled that there was no mention of Anna Eva Fay, among other vaudeville stars.⁸⁶

⁸³ For popular accounts of Fay's career, see Milbourne Christopher, *Mediums, Mystics and the Occult* (New York: Crowell, 1975); Barry H. Wiley, *The Indescribable Phenomenon: The Life and Mysteries of Anna Eva Fay* (Seattle: Hermetic Press, 2005); Massimo Polidoro, "Anna Eva Fay: The Mentalist Who Baffled Sir William Crookes," *Skeptical Inquirer* 24, no. 1 (2000): 36-39.

⁸⁴ McGarry, "Spectral Sexualities," 14.

⁸⁵ *Washington Post*, February 27, 1892, p. 6; "Anna Eva Fay, Mystic and Mind-Reader, Dies," *New York Times*, May 13, 1927; "Classified Ad 20 – No Title," *New York Times*, January 6, 1876; "Anna Eva Fay Alarmed," *Washington Post*, January 29, 1894; "Anna Eva Retired," *New York Times*, March 7, 1887; "Eva Fay's Mysteries," *Washington Post*, October 9, 1893; "Spiritualism 50 Years Ago," *New York Times*, May 31, 1925; "Overcoming Personal Idiosyncrasies and Individual Peculiarities," *New York Times*, April 22, 1906.


⁸⁶ Polidoro, "Anna Eva Fay," 37; E. W. Halford, "Spiritualism 50 Years Ago," *New York Times*, May 31, 1923; "An Imposed on Commentary," *Washington Post*, April 30, 1900; H. L. Mencken, "On Encyclopedias," *Chicago Tribune*, May 16, 1926.

Eva Fay's séances, or spiritual "manifestations," or "experiments," as they were known, were widely publicized and well attended (see Figure 9). In an 1887 performance in Chicago's Battery D Armory, Fay drew an audience of six thousand (at fifty cents a ticket). To begin a typical performance, Fay or her manager would ask for two or three "elderly and well-known men"—often physicians, judges, and professors—to join Fay on stage and inspect her cabinet, the structure that housed her during her spirit manifestations.⁸⁷

AMUSEMENTS. AMUSEMENTS.

A CADEMY. TO-NIGHT.

APPEARANCE OF THE INDESCRIBABLE PHENOMENON,
MISS
ANNA EVA FAY



IN A RELIGIOUS ILLUSTRATED LECTURE ON
Spiritualism and Theosophy

Miss Fay is the only woman in the world who has the indorsement of members of the Royal Scientific Society of London, England—Prof. William Crookes, Huxley, Varley, Sargent, Cox, and others.

Some claim odic force, some electricity, while others claim a supernatural power. Materialization all on a brilliantly lighted stage of FORMS, HANDS, and FACES.

**Communications Received. Tables Will Float in Midair.
The Animated Hand Will Answer Any Question.
Beautiful Flowers Materialized, &c., &c.**

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Reserved Seats, 50 and 75 cents. Box Office open to-day from 1 to 5.
Doors open at 7. Commence at 8 p. m. Carriages at 10.

Figure 9: "Appearance of the Indescribable Phenomenon, Miss Anna Eva Fay." *Washington Post*, January 28, 1894, p. 14.

⁸⁷ "Miss Fay's Experiments," *New York Times*, January 1, 1894; "Anna Eva Retired," *New York Times*, March 7, 1887; "An Old-Fashioned Séance," *New York Times*, November 21, 1892; "Dr. Mary and the Spirits," *Washington Post*, February 20, 1882. Spiritualist performers employed a variety of methods on stage, but Fay was most well-known as a cabinet medium. "Music From Spirit Hands," *Washington Post*, April 8, 1895.

The presence of these on-stage inspectors served a dual rhetorical purpose in Fay's performance: Fay initially appealed to their expertise but subsequently exposed their ignorance. First, as respected community members and exemplars of traditional scientific and academic knowledge, they embodied a masculine professional authority qualified to assess Fay's setup and then assure the audience of its authenticity. Indeed, newspaper accounts of spiritualist performances often reported these names of these so-called "elderly gentlemen."⁸⁸ Obviously the antithesis of Fay—who represented a feminized, bodily, and occult way of knowing—these "disinterested gentlemen," by virtue of their stark contrast with Fay, embodied a distanced and ostensibly objective authority.⁸⁹ But by the end of the performance, Fay had transformed these wise men into fools, their empirical investigation of her props rendered meaningless by her dramatic evocations of the spirit world.⁹⁰

Fay's cabinet, the standard cabinet used by performing spirit mediums, was not a solid structure but rather a red cloth canopy that stretched across stanchions and contained the chair on

⁸⁸ "Dr. Mary and the Spirits," *Washington Post*, February 20, 1882; "Some Clever Cabinet Tests," *Washington Post*, February 24, 1896. The names of Fay's on-stage volunteers were reported in the following articles: "A Sunday Night Séance," *Washington Post*, May 2, 1881; "Dr. Mary and the Spirits," *Washington Post*, February 20, 1882; "No Bodies Materialized," *New York Times*, December 9, 1886; "Spirits in an Uproar," *Washington Post*, December 20, 1886; "Wonderful Eva Fay," *Washington Post*, March 11, 1892; "Worked the Spirits," *Chicago Daily Tribune*, March 6, 1893; "Were Anna Eva Fay's Hands Loose?" *Chicago Daily Tribune*, March 13, 1893; "Eva Fay's Mysteries," *Washington Post*, October 9, 1893; "Miss Fay's 'Experiments,'" *Boston Daily Globe*, January 1, 1894; "Miss Fay's Last," *Boston Daily Globe*, January 8, 1894; "Anna Eva Fay Alarmed," *Washington Post*, January 29, 1894. Public displays of scientific authority, in Fay's performances and more broadly in the late nineteenth century, were gendered male. In an 1882 performance at Ford's Opera House, the atypical presence of a female volunteer on stage—Dr. Mary Walker, an Army surgeon, first female recipient of the Congressional Medal of Honor, and a woman's rights activist—warranted a lengthy article in the *Washington Post*. "Dr. Mary and the Spirits," *Washington Post*, February 20, 1882. In an 1893 performance in Chicago, when Fay's audience clamored for a female member of the on-stage inspection committee, Fay's manager acquiesced and asked for a well-known woman to take the stage, but none came forth. "Were Anna Eva Fay's Hands Loose?" *Chicago Daily Tribune*, March 13, 1893.

⁸⁹ "Music From Spirit Hands," *Washington Post*, April 8, 1895.

⁹⁰ Hereward Carrington, *The Physical Phenomena of Spiritualism* (Boston: Herbert B. Turner, 1907), 150-51; "Wonderful Eva Fay," *New York Times*, March 11, 1892.

which she sat to summon spirits.⁹¹ After Fay's volunteers inspected the cabinet and the chair, they then tied Fay to the chair with strips of cotton cloth and then sometimes sewed the knots together. Fay's hands were tied behind her and fastened to the stanchion, her neck wrapped in a cotton bandage and also attached to the stanchion, and her feet bound together with a cord that extended outside the cabinet where a committee member could hold it in order to detect any movement. After Fay was secured inside the cabinet, noise-making props—a tambourine, a horn, and bells—were put on her lap. As soon as the curtain was drawn shut, the tambourine, horn and bells sounded, and just as quickly, the curtain was opened to reveal a sitting Eva Fay, still bound to the chair. Fay performed similar “cabinet tricks” with a hoop and a glass of water; the former went from Fay's lap to her shoulders while the curtain was drawn, and the latter went from half-full to completely empty while Fay's hands, feet, and neck remained bound.

At this point in the performance, one of Fay's three on-stage volunteers would be blindfolded and ushered into the cabinet with Fay, where he was sometimes permitted to put his hands on Fay's head and knee to detect any movement. Fay performed other similar “tests” throughout her two- and three-hour performances, including one in which a tambourine came flying out of the cabinet, and one in which, in the words of a member of the Society for Psychical Research, “[a] nail is driven into a board by some spirit carpenter, who makes as much noise as if he were still in the flesh.”⁹² At the conclusion of these “curious antics,” Fay invited her three volunteers to examine the cotton strips and confirm that they were still knotted and sewn shut.⁹³ Other times Fay vanished from the cabinet, whereupon audience volunteers

⁹¹ “No Bodies Materialized,” *New York Times*, December 9, 1886; “A Sunday Night Séance,” *New York Times*, May 2, 1881.

⁹² Carrington, *Physical Phenomena of Spiritualism*, 149-50, quotation on 150.

⁹³ “Eva Fay's Mysteries,” *Washington Post*, October 9, 1893; Carrington, *Physical Phenomena of Spiritualism*, 150-51.

ascended the stage to inspect the cabinet and search in vain for any kind of trap door.⁹⁴ Fay's seat in the cabinet enabled not only these physical manifestations of the spirit realm, but also messages from the dead, including relatives of audience members as well as past presidents.⁹⁵

Eva Fay's public performances often included "trips into the future" that yielded "prophecies . . . of national and international import," according to the *Washington Post*.⁹⁶ Fay made political predictions in response to yes-or-no questions from her audience: would a Democrat be elected president, would Grover Cleveland or Benjamin Harrison be elected the next president in 1892, would the silver bill pass; would Hawaii be annexed?⁹⁷ Fay did not confine her predictions to electoral and legislative matters, delighting her audiences with her picks for a John L. Sullivan-"Gentleman Jim" Corbett rematch in the boxing ring and her prediction of a French victory in an international auto racing competition.⁹⁸ However, Fay did not utter these prognostications herself as a fortune-teller might. Instead, she acted as the conduit for spirit rappings that tapped out "yes" or "no" answers to questions regarding "events of public interest."⁹⁹ Her famous "speaking hand," "mystic hand," or "spirit hand," a wooden hand that rested on a pane of glass that in turn rested on top of two chairs, knocked its affirmative and negative answers in code with its forefinger, one rap for "no" and multiple raps for "yes."¹⁰⁰ Newspaper reports noted that the hand had "no apparent connection, electrical or otherwise" with Eva Fay herself, who remained eight to ten feet away from the hand during its

⁹⁴ "Wonderful Eva Fay," *New York Times*, March 11, 1892.

⁹⁵ "A Sunday Night Séance," *New York Times*, May 2, 1881.

⁹⁶ "Foretells Big War," *Washington Post*, December 18, 1905.

⁹⁷ "Tests of Miss Fay's Power," *New York Times*, February 29, 1892; "Puzzled Her Audience," *New York Times*, October 17, 1892; "Eva Fay's Mysteries," *New York Times*, October 9, 1893; "Puzzled Her Audience," *New York Times*, October 17, 1892; "Anna Eva Fay Alarmed," *Washington Post*, January 29, 1894.

⁹⁸ "Puzzled Her Audience," *New York Times*, October 17, 1892; "Miss Fay's Last," *Boston Daily Globe*, January 8, 1894; "Foretells Big War," *Washington Post*, December 18, 1905.

⁹⁹ "Puzzled Her Audience," *New York Times*, October 17, 1892.

¹⁰⁰ "Tests of Miss Fay's Power," *New York Times*, February 29, 1892; "Puzzled Her Audience," *New York Times*, October 17, 1892; "Miss Fay's 'Experiments,'" *Boston Daily Globe*, January 1, 1894; "Eva Fay's Mysteries," *Washington Post*, October 9, 1893.

rappings.¹⁰¹ Dr. J. G. Watkins, an on-stage volunteer at one of Fay's Chicago performances in 1893, alleged that Fay controlled the wooden hand by pulling on a string that was threaded through the hollowed-out chair leg that propped up the pane of glass, but he was unable to prove his theory.¹⁰²

It is impossible to determine from the surviving newspaper accounts the frequency or accuracy (or even consistency) of Eva Fay's predictions, but she was widely known for her prognostications, as evidenced by an 1892 *Brooklyn Eagle* advertisement for Fay's show that includes this testimonial from the *New York World*: "At Albany last Spring this hand predicted the nomination and election of Grover Cleveland."¹⁰³ Reports of Fay's performances in 1893 and 1894 also noted that the mystic hand had correctly forecast Cleveland's win in 1892 as well as the election of Massachusetts governor William E. Russell.¹⁰⁴ Newspapers also reported that over a year before war with Spain broke out, Eva Fay foretold the sinking of the *U.S.S. Maine* during a performance in Chicago. After McKinley's assassination in 1901, Eva Fay predicted that Theodore Roosevelt would win the next presidential election with 325 electoral votes. (She was eleven votes under.) In 1904 Fay predicted U.S. involvement in the resolution of the Russian-Japanese War and a treaty signed "somewhere in New England" on or after October 16. (She was a bit late: the Treaty of Portsmouth was signed in New Hampshire on September 5, 1905.) In a 1905 performance in Washington, DC, Fay, responding to an audience member's question about the next war for the United States, predicted that in six or seven years "the United States and Germany would be in discussion over the question of supremacy on the high sea, and

¹⁰¹ "Miss Fay's 'Experiments,'" *Boston Daily Globe*, January 1, 1894.

¹⁰² "Were Anna Eva Fay's Hands Loose?" *Chicago Daily Tribune*, March 13, 1893.

¹⁰³ "New York Press Unanimous," *Brooklyn Eagle*, November 30, 1892.

¹⁰⁴ "The Theatres," *Boston Daily Globe*, January 7, 1894.

a long and terrible war would follow.”¹⁰⁵ In 1917 the *Washington Post* republished Fay’s prophecy of war, which had also imagined that Germany would invade Canada and Mexico and from those positions launch an ultimately unsuccessful attack on the United States.¹⁰⁶ Although elections and wars were among Fay’s favorite subjects of prophecy, she did not confine her foretellings to domestic and international politics. She also made stock market forecasts, correctly predicting a property sale that would ostensibly drive up the price of United Railways stock in February 1906.¹⁰⁷

Although Fay enjoyed a long career and immense popularity, not all who attended her spiritualistic manifestations were satisfied customers. Perhaps the most dissatisfied were members of a riotous Chicago crowd who, displeased with “stale tricks and dime museum sleight-of-hand performances” at an 1887 show, stormed the stage halfway through Fay’s performance and demolished the cabinet.¹⁰⁸ Although Fay did not regularly face an onslaught of angry audience members, she did routinely face scrutiny from those critics who were convinced that she was pretending to summon spirits, that her public séances were indeed little more than “sleight-of-hand performances.”

Among Fay’s earliest detractors was New York’s Society for the Reformation of Juvenile Delinquents, which appealed to the state Supreme Court in 1876 to order Fay to purchase a juggler’s license since her séances hinged not on supernatural abilities but rather, according to the Society, ““jugglery, legerdemain, prestidigitation or sleight of hand.””¹⁰⁹ One of the affidavits filed in support of Eva Fay charged that she was the target of “a conspiracy between

¹⁰⁵ “Foretells Big War,” *Washington Post*, December 18, 1905.

¹⁰⁶ “Prophecy of War in Post of 1905,” *New York Times*, November 25, 1917.

¹⁰⁷ “Trading in Baltimore,” *New York Times*, February 14, 1906.

¹⁰⁸ “Anna Eva Retired,” *New York Times*, March 7, 1887. Fay later denied that the cabinet had been ruined but was nonetheless indignant over her reception in “the rowdy West.” “The City,” *Chicago Daily Tribune*, March 8, 1887.

¹⁰⁹ “Slings and Arrows,” *Boston Daily*, June 3, 1876; “The Case of Annie Eva Fay,” *New York Times*, July 2, 1876.

various ministers of the Gospel, who were seeking to crush out the truth as exemplified in the feats of Miss Fay.”¹¹⁰ According to the recollection of rival spirit medium Washington Irving Bishop, Fay “claimed exemption on the ground that she was a spirit medium, a minister of a particular sect or religion, and swore that she was not a trickster or conjurer, and that the work was done by the spirits alone.”¹¹¹ The presiding Judge Donohue, unmoved by the alleged conspiracy theory or Fay’s defense, ruled that Fay’s performance was within the bounds of the statute for the licensure of theatrical performers. Donohue’s opinion, however, acknowledged the difficulty of regulating spiritualist mediums whose performances blurred the lines between the secular and the religious: ““While the court should be careful in any attempt to restrain parties claiming to be in pursuit of knowledge or the exercise of religious rules, the court should be equally careful not to permit the mere name or claim to sustain an exhibition that the statute contemplates should pay a license.””¹¹²

Among those filing affidavits in support of the Society for the Reformation of Juvenile Delinquents was Washington Irving Bishop, a former Fay associate who began assisting her in her séances in 1875.¹¹³ Bishop and Fay had some kind of falling out, after which he struck out on his own, both as an exposé of spirit mediums and a mind reader who toured extensively throughout Europe in the late 1870s and early 1880s.¹¹⁴ Immediately after dissolving his professional relationship with Fay, Bishop set out to demonstrate publicly that Eva Fay was merely pretending to contact the spirit realm. On May 18, 1876, in New York City’s Chickering Hall, Bishop performed Eva Fay’s tricks and then revealed to the hundreds in his audience how

¹¹⁰ “The Case of Annie Eva Fay,” *New York Times*, July 2, 1876.

¹¹¹ “Mr. Bishop States His Case,” *Washington Post*, December 21, 1886.

¹¹² “The Case of Annie Eva Fay,” *New York Times*, July 2, 1876.

¹¹³ “W. Irving Bishop’s Death,” *New York Times*, May 14, 1889. Some accounts, including certain of Bishop’s recollections, indicate that Bishop was responsible for the initial legal action against Fay in 1876. “Mr. Bishop States His Case,” *Washington Post*, December 21, 1886.

¹¹⁴ “Defending Miss Fay,” *Boston Daily Globe*, December 23, 1886; “W. Irving Bishop’s Death,” *NYT*, May 14, 1889.

the tricks were performed.¹¹⁵ And the impetus for his public exposé of Fay, Bishop claimed, was a pair of letters he received from two groups of eminent citizens including former Surgeon General William A. Hammond, Henry Ward Beecher, Oliver Wendell Holmes, former Massachusetts Governor Alexander H. Rice, and numerous other politicians, professors, and preachers.¹¹⁶ However, according to Eva Fay's husband and manager, D. H. Pingree, Bishop was not acting at the behest of these concerned citizens; on the contrary, Pingree declared, Bishop approached Dr. Hammond and others with his plan to publicly defame Fay and asked for their support.¹¹⁷ Regardless of whether Bishop sought the support of this esteemed group or was sought after, his exposé of Fay was largely an upper-class affair. As newspaper coverage of Bishop's Chickering Hall performance announced, "These entertainments are for the elite, and have been attended by aristocratic audiences."¹¹⁸

Bishop was not Eva Fay's only spiritualist detractor in the 1870s. Spiritualist medium Mrs. J. M. Carpenter showed how Fay's cabinet tricks could be performed without spiritual manifestations, thereby denouncing Fay as a fraud in order to, in Carpenter's words, "'keep separate the true from the false in Spiritualism.'"¹¹⁹ And in general, as Emma Hardinge, a well-known medium and chronicler of the spiritualist movement, wrote in 1870, the occult work of Eva Fay and her then-husband and partner Melville Fay had been "'openly exposed by the Spiritualists themselves.'"¹²⁰ It was hardly unusual for one spirit medium to expose another, particularly in the 1870s, a decade in which spirit mediums devoted themselves to exposing as

¹¹⁵ "W. Irving Bishop," *Boston Daily Globe*, December 25, 1886.

¹¹⁶ "Mr. Bishop States His Case," *Washington Post*, December 21, 1886; "W. Irving Bishop," *Boston Daily Globe*, December 25, 1886.

¹¹⁷ "Defending Miss Fay," *Boston Daily Globe*, December 23, 1886.

¹¹⁸ "New York Gossip," *Chicago Tribune*, June 18, 1876.

¹¹⁹ Braude, *Radical Spirits*, 181.

¹²⁰ Emma Hardinge Britten, *Modern American Spiritualism, or a Twenty Years' Record of the Communion between Earth and the World of Spirits, from 1848 to 1868* (New York: Britten, 1870), quoted in Polidoro, "Anna Eva Fay," 37.

well as authenticating other mediums and the *Banner of Light*, the most popular spiritualist organ, focused squarely on questions of credibility and quackery.¹²¹ The *Chicago Tribune* reported in 1876 that the methods of Eva Fay and other cabinet mediums “have been so thoroughly exposed that the only surprise is that apparently intelligent people are still led astray by the claim of there being something supernatural in such entertainments.”¹²²

In December 1886 Bishop claimed that “several distinguished members of Congress” paid him a visit and, aware of his commitment to “the exposure of that pestilient superstition, spiritualism,” implored him to expose Eva Fay at her upcoming performance at Washington’s National Theatre.¹²³ Bishop proceeded to interrupt Fay’s December 19 performance several times, offering to pay one hundred dollars if he could not successfully imitate Fay’s feat of reading the names written on a pack of cards while they were in someone else’s hands, then upping the ante to one thousand dollars if he could not repeat all of Fay’s manifestations, which included the playing of tambourines and other musical instruments from within the cabinet. As Fay and Bishop glared at each other, the theatre quickly erupted into chaos, with some audience members defending Fay, some encouraging Bishop, and others calling for the police. A police lieutenant arrived to quell the pandemonium and keep Bishop in his seat, but the damage had been done: the *Washington Post* reported that “[t]he noise . . . had evidently frightened the spirits away, and when Miss Fay attempted to continue the performance it was an utter failure.”¹²⁴

Bishop was Fay’s most vociferous critic but certainly not the only one determined to expose her spirit mediumship as fraudulent in the three decades following the flurry of exposés

¹²¹ Braude, *Radical Spirits*, 181.

¹²² “New York Gossip,” *Chicago Tribune*, June 18, 1876.

¹²³ “Mr. Bishop States His Case,” *Washington Post*, December 21, 1886; “Spirits in an Uproar,” *Washington Post*, December 20, 1886.

¹²⁴ “Spirits in an Uproar,” *Washington Post*, December 20, 1886.

in the 1870s.¹²⁵ The most common physical explanations that surfaced to explain Fay's apparently supernatural manifestations fell into one of two categories: Fay wasn't alone in the darkness of the cabinet, or Fay was alone but unfettered. In 1893 the *Chicago Tribune* charged that the elaborate train of Fay's dress concealed a five-year-old boy who hammered nails, played musical instruments, and carried out the rest of Fay's "ghostly tricks."¹²⁶ Other skeptics charged that Fay's bonds could not hold her, perhaps because her wrists were wider than her hands, perhaps because she was a skilled contortionist and could thus move with the slightest bit of slack in the cotton strips that tied her hands, or perhaps because her dress concealed a pair of scissors that she used to cut herself free. Other, less popular, explanations also surfaced: the musical instruments were played by a pair of miniature arms that had grown out of Fay's chest.¹²⁷

Determined to reveal Eva Fay's public performances as mere stage trickery, these detractors offered empirical explanations for Fay's spirit work, thereby fashioning themselves as positivist investigators who held the occult under the lens of scientific scrutiny. Spiritualist "exposers" like the aforementioned Dr. Logan, Carrington, and Dr. Haskin embodied the same kind of scientific and professional authority ascribed to the committees of "disinterested gentlemen" who ascended the stage at Fay's every show in order to inspect her cabinet and verify the materiality of her performance. As such, the rational inquiry of these "exposers" and

¹²⁵ In 1892 Brooklyn's Bryant Literary Society hosted the illusionist Elmer P. Ransom for his expose of Fay's "so called spirit materializations." "The Bryant Literary Society," *Brooklyn Eagle*, December 11, 1892.

¹²⁶ "Spirits Under Cover," *Chicago Daily*, March 12, 1893; "Anna Eva Fooled the Reporters," *Washington Post*, March 13, 1893.

¹²⁷ "No Bodies Materialized," *New York Times*, December 9, 1886; Frederic J. Haskin, "Spiritualism and Magic: IV—Rope Tying and Rapping," *Washington Post*, May 15, 1910; "Were Anna Eva Fay's Hands Loose?" *Chicago Daily Tribune*, March 13, 1893; Polidoro, "Anna Eva Fay," 39.

“disinterested gentlemen” stood in stark opposition to Fay’s embodied, occult way of knowing.¹²⁸

These public, ostensibly scientific investigations of Fay’s spirit manifestations were entirely typical responses to nineteenth-century occult practice. Kate and Maggie Fox, the founding sisters of spiritualism, were subject to several investigations by skeptical academic scientists and by doctors at the University of Buffalo’s medical school.¹²⁹ In 1854 the U.S. Senate received (but ultimately tabled) a petition signed by 13,000 Americans who sought, in the words of a historian of spiritualism, “a scientific committee to investigate spirit communication.”¹³⁰ And when Eva Fay went to London in 1874, she was investigated by the Royal Society’s William Crookes, who conducted an electrical experiment designed to reveal whether Fay was using her own power or a higher power to summon her spirits. Crookes directed Fay to grasp both handles of a battery whose specially designed electrical control circuit would indicate if and when Fay let go of the handles. Fay passed the test, subsequently toured England to great acclaim, and fifty years later reportedly told Harry Houdini how she had cheated: she maintained the electric circuit and the use of one hand by putting one battery handle behind her knee.¹³¹

Despite these public inquiries that pitted scientific investigation against spirit manifestation, science and spiritualism were not epistemologically opposed in the late nineteenth

¹²⁸ Spirit mediums known as “trance lecturers” took the stage and gave extemporaneous speeches in response to topics chosen by male audience members, topics that often pertained to “‘manly’ scientific questions,” questions that “presumably . . . the spirit medium could not tackle unless spirits came to her aid.” Moore, “The Spiritualist Medium,” 209.

¹²⁹ Weinstein, “Technologies of Vision,” 124-25. As Weinstein notes, ultimately it was not scientific scrutiny but rather a personal confession that discredited the Fox sisters’ famous Hydesville rappings, essentially the origin story of American spiritualism. In 1888, Margaret Fox admitted to a Boston audience that it was the sisters’ unusually flexible finger and toe joints that had produced the first spirit rappings in Hydesville, not, as the legend went, a murdered peddler’s ghost (125).

¹³⁰ Moore, *In Search of White Crows*, 26; Braude, *Radical Spirits*, 27.

¹³¹ Polidoro, “Anna Eva Fay,” 37-39.

century. According to the foremost historian of the movement, spiritualism was about “mak[ing] religion rational” and “s[old] itself by language and by deed as a scientific endeavor.”¹³²

Spiritualist practitioners defined their own work—like Eva Fay’s “experiments” and “scientific séances”¹³³—as a scientific inquiry into and an empirical verification of the spirit realm, as, in the words of famed nineteenth-century psychologist George Beard, “an attempt to apply the inductive method to religion, to make faith scientific, to confirm the longings of the heart by the evidence of the senses.”¹³⁴ Those who attended a séance no longer had to reckon with uncertainty regarding their dearly departed; in place of this spiritual uncertainty the séance offered physical evidence of, as well as messages from, the afterlife.¹³⁵ Eva Fay, her numerous spiritualist colleagues, and hordes of eager séance attendees all believed themselves to be scientific investigators of what Hamlet famously labeled “the undiscovered country”—the land beyond the living.¹³⁶ The science of the séance was put on trial not only in the late-nineteenth-century popular imagination, but also in the literary imagination of William Dean Howells, whom most literary historians consider the father of American realism but few recognize as one intrigued by spiritualism.

The first work by a major American novelist to treat spiritualism as its main subject—not merely as object of satire or scorn—was William Dean Howells’s romance *The Undiscovered*

¹³² Moore, *In Search of White Crows*, 7, 22. Popular conceptions of technology, not just science, also animated the spiritualist movement. Spirit rappings that spelled out communications from the dead were compared to telegraphy’s Morse code, and a major spiritualist journal was named the *Spiritual Telegraph*. Kerr, *Mediums, and Spirit-rappers, and Roaring Radicals*, 9.

¹³³ “A Follower of Mme. Blavatsky,” *Brooklyn Eagle*, November 27, 1892.

¹³⁴ Quoted in Moore, *In Search of White Crows*, 63.

¹³⁵ Braude, *Radical Spirits*, 36.

¹³⁶ William Shakespeare, *Hamlet*, ed. Barbara A. Mowat and Paul Werstine (New York: Washington Square Press, 1992), 3.1.87, references are to act, scene, and line.

Country, which was serialized in the *Atlantic Monthly* in 1880.¹³⁷ The novel garnered critical acclaim from the public as well as from Howells's inner literary circle, but its popularity quickly waned with the emergence of Howells's major realist novels of American urban life: *A Modern Instance* (1881), *The Rise of Silas Lapham* (1885), and *A Hazard of New Fortunes* (1890).¹³⁸ Literary critics have generally overlooked *The Undiscovered Country* as a minor work of little consequence to Howells's mature program of American literary realism, or dismissed it for its formal weaknesses.¹³⁹ But the novel, rooted in Howells's own experience with an infamous spiritualist exposé in the mid-1870s, is historically significant for its dramatization of the interplay between science and spiritualism that animated mediums' performances and exposés in the 1870s and 1880s.

As the influential editor of the *Atlantic Monthly* from 1871 to 1881, Howells, who would later be anointed the "Dean of American Letters," played a central role in reorienting American literary culture toward an acceptance of American realist fiction as well as the work of European writers including Zola, Ibsen, and Tolstoy. Howells's prominent position atop the American literary scene also left him vulnerable to the embarrassment surrounding the *Atlantic's* role in the infamous Katie King scandal of 1874-75. In December 1874 and January 1875, Howells's friend Robert Dale Owen, son of the renowned utopian socialist Robert Owen, published two essays in the *Atlantic* that celebrated well-known medium Katie King as the spiritual antidote to the

¹³⁷ Several American authors—most notably Twain, James, and Hawthorne—had written about spiritualism prior to 1880, but Howells's novel was "the first sustainedly serious" treatment of spiritualism in America. Kerr, *Mediums, and Spirit-rappers, and Roaring Radicals*, 122.

¹³⁸ "New Publications," *New York Times*, March 22, 1880; "New Publications," *New York Times*, July 1, 1880; Kerr, *Mediums, and Spirit-rappers, and Roaring Radicals*, 127; Stephanie C. Palmer, "Realist Magic in the Fiction of William Dean Howells," *Nineteenth-Century Literature* 57, no. 2 (2002): 216.

¹³⁹ Palmer, "Realist Magic in the Fiction of William Dean Howells," 216; Edward Carter, *Howells and the Age of Realism* (Philadelphia: J. B. Lippincott, 1950), 106. An exception is Kermit Vanderbilt, who hailed the novel as a major reimagining of the American pastoral for a modernizing America in the throes of "religious, psychological and social dislocation" after the Civil War. Kermit Vanderbilt, "'The Undiscovered Country': Howells' Version of American Pastoral," *American Quarterly* 17, no. 4 (1965): 654.

declining religiosity of the late nineteenth century. When Katie King was exposed as a fraud in late December, Howells hastily issued a tepid disclaimer in the *Atlantic* and urged Owen to say no more on the subject. Owen, however, turned to the *New York Tribune* in an attempt to explain how he had been duped, whereupon the press gleefully took aim at Owen as well as the *Atlantic*.¹⁴⁰ Edward Bellamy's *Springfield Union* sniffed:

It is all very well for the editor and publishers of The Atlantic Monthly to advertise that they are not responsible for the religious views of Robert Dale Owen, but they must and will be held responsible for giving up their magazine (supposed to be devoted to what is best in literature), to the most ridiculous twaddle, if they print any more articles from Mr. Owen, or anybody else, of the character of his paper in the January number. . . .¹⁴¹

The *Springfield Union* was somewhat justified in adopting such an unforgiving stance: assistant editor Edward Bellamy, far more skeptical than Owen, had deemed the wildly popular Katie King a fraud in August 1874, several months before her public exposure.¹⁴²

The Undiscovered Country was based not only on Howells's embarrassing turn as the editor of his discredited friend Owen, but also on his family vacation in the summer of 1875 to Shirley, Massachusetts, where Howells befriended members of a nearby Shaker community. Howells, whose own religious leanings led him to Christian socialism by the 1880s, discovered a great affinity for and a literary fascination with the Shakers—"temptations to the fictionist," he called them. The Shirley Shakers served as the subject of an *Atlantic* article by Howells as well as the inspiration for *The Undiscovered Country*, a draft of which Howells completed by 1878, two years before its publication in the *Atlantic*.¹⁴³

¹⁴⁰ Kerr, *Mediums, and Spirit-rappers, and Roaring Radicals*, 132-33. On the Katie King controversy as illustrative of nineteenth-century social anxieties, see McGarry, "Spectral Sexualities," 8-29.

¹⁴¹ *Springfield (MA) Union*, December 22, 1874, p. 4, quoted in Kerr, *Mediums, and Spirit-rappers, and Roaring Radicals*, 134.

¹⁴² Kerr, *Mediums, and Spirit-rappers, and Roaring Radicals*, 133-34, 150.

¹⁴³ Carter, *Howells and the Age of Realism*, 106; Vanderbilt, "'The Undiscovered Country': Howells's Version of American Pastoral," 634-36.

The Undiscovered Country, a romance that investigates the science of spiritualism, moves from city to country and back again as its three main characters explore spirit communication and its epistemological implications in two very different settings: the Boston séance circuit and the rural Shaker settlement far outside the reaches of the city's "mercenary, professional mediumism."¹⁴⁴ The main character, Dr. Boynton, is a former Calvinist, former physician, and former resident of Maine whose wife's death in childbirth launched his quest to confirm the possibility of spirit communication. As a contemporary review noted, Boynton's spiritualist "over-enthusiasm had made him mad."¹⁴⁵

The principal instrument of Boynton's "spiritualist monomania" is his nineteen-year-old daughter Egeria, whose name is an allusion to a prophetic water nymph of Roman mythology.¹⁴⁶ A reluctant spirit medium, Egeria becomes the center of a power struggle between her controlling father and a skeptical journalist and chemist named Ford, who is determined to expose Egeria's séances as mere quackery. After Ford demonstrates that the spiritual presence at Boynton and Egeria's Boston séance is nothing more than human intervention, father and daughter forsake the city for their Maine roots, but their train ride home—thanks to the forces of accident and chance entirely characteristic of Howellsian plot structure—deposits them near a Shaker commune in fictional Vardley, Massachusetts.¹⁴⁷

Chance again intervenes and brings Ford to the same Shaker residence, whereupon an angry confrontation with the humiliated Boynton leads to an accidental injury that relegates Boynton to what is ultimately his deathbed. Boynton's physical decline provides the occasion

¹⁴⁴ William Dean Howells, *The Undiscovered Country* (Boston: Houghton Mifflin, 1880), 181.

¹⁴⁵ "New Publications," *New York Times*, July 1, 1880.

¹⁴⁶ Vanderbilt, "The Undiscovered Country': Howells's Version of American Pastoral," 642.

¹⁴⁷ On the role of accident and chance in Howells's fiction, see Puskar, "William Dean Howells and the Insurance of the Real"; Puskar, "Underwriting the Accident"; Palmer, "Realist Magic in the Fiction of William Dean Howells," 210-36.

for his interrogation of his own spiritual beliefs, as well as the occasion for Ford and Egeria to wander the countryside, where Egeria finds a new vitality and Ford becomes enamored of her. After Boynton's death, Ford and Egeria marry and settle in the Boston suburbs, where Ford applies his chemist's training to the lucrative production of a household innovation called the Ford Fire Kindler, and Egeria divides her time between Episcopalian services, dinner parties, and the theater.

In *The Undiscovered Country*, Howells's characters invoke science both to legitimize and to delegitimize spiritualism. In the novel's opening scene in a not-quite-respectable Boston boarding house, Boynton draws a clear distinction between spiritualists and fortune-tellers, classifying Egeria and himself as "experimenters" and fortune-tellers as "pretenders" and "in most cases, shameless swindlers."¹⁴⁸ Boynton believes himself to be engaged in "spiritistic science" and touts "spiritistic research" as the attempt to find evidence of "dim hints of immortality."¹⁴⁹ Boynton's science of belief is conducted in a public laboratory—the darkened séance room—and his results instantly evaluated by a host of witnesses. And these results, if successful, would turn Boynton the scientist into Boynton the prophet, a prophet not of Calvinist theology but one of "a nonsectarian, spiritualistic doctrine of love, progress, and immortality for all."¹⁵⁰ But Boynton's spiritualist experiments fail, in the city and the country, largely due to the scientific method he uses to legitimize his investigations in the first place.

The performative nature of Boynton's spiritualist science leaves him vulnerable to attack from the skeptic Ford, who employs an empirical mode of inquiry in exposing Egeria's spirit communication as fraudulent. Boynton claims that as a physician he "base[s] [his] convictions

¹⁴⁸ Howells, *The Undiscovered Country*, 7-8.

¹⁴⁹ *Ibid.*, 52, 193.

¹⁵⁰ Kerr, *Mediums, and Spirit-rappers, and Roaring Radicals*, 136.

solely upon facts,” but he and Ford are dealing in different kinds of facts.¹⁵¹ Ford’s method is to substitute his physical facts for Boynton’s psychical facts. Their physical and psychical facts face off during the novel’s opening séance, which Ford triumphantly reveals as a fraud. Mrs. Le Roy, the boarding house owner and herself a medium of questionable repute, later confesses to having secretly grasped the hands of those around the table who believed they were in direct physical contact with the spirit world, touching spirit hands. Ford, in his attempt to supply physical causes for Egeria’s alleged spirit manifestations, brings the performance to an abrupt and chaotic halt when he grabs Egeria’s hand in such a “savage clutch” that her ring cuts her skin and she faints. As Egeria lies crumpled on the floor and the roomful of guests succumbs to wild confusion, Ford surreptitiously adjusts an overhead gas jet to make a “materialized” spirit hand glow blue.¹⁵² Despite his daughter’s stricken state, Boynton initially rejoices, believing that his spiritistic experimentation has at last yielded incontrovertible proof of immortality, empirical evidence of spirit communication. But when Ford subsequently reveals that he had a hand—quite literally—in Egeria’s spirit manifestations, Boynton’s psychical facts disintegrate.

Ford’s exposé of Boynton is motivated in part by a sense of social responsibility as a self-appointed protector of a naïve public that he believes is being “prey[ed] upon” by Boynton.¹⁵³ In his opening confrontation with Boynton, Ford proclaims that “there are no laws that can reach you, but justice shall.”¹⁵⁴ Despite this acknowledgment that Boynton is in a sense above the law—the laws of scientific method—Ford tries mightily to impose a set of rational and logical constraints on Boynton’s spiritualist practice. In Ford’s worldview, boundaries are of paramount importance in ordering experience. He defers to a rigid conception of class

¹⁵¹ Howells, *The Undiscovered Country*, 50.

¹⁵² *Ibid.*, 32.

¹⁵³ *Ibid.*, 84.

¹⁵⁴ *Ibid.*, 58.

boundaries, refusing to consort with the upper class for fear that so doing would turn him into a “sham and a pretender;” he believes that the individual has a limited sphere of influence over the happiness and fulfillment of another; he distrusts social proximity, telling Egeria during their discussion of the Shaker retreat, “That’s the nature of worlds, big and little. You can’t be at home *near* them; you have to be *in* them to be comfortable.”¹⁵⁵ Ford’s logic of boundaries also prevents him from accepting the possibility that residents of this world can consort with spirits of the next.

As critics have commonly noted, Ford and Boynton represent the opposition of the scientist and the spiritualist, the skeptic and the believer, but the resolution of the novel reveals that such an opposition is neither stark nor simple.¹⁵⁶ The biographical dimensions of the novel’s conclusion have been explained as Howells’s resolution of his own crisis involving Owen’s discredited *Atlantic* essays, and the novel in its entirety has been characterized as a work of “critical compassion” that remained cynical toward the spiritualist movement but rehabilitated, in the character of Boynton, the misguided belief of his friend Owen.¹⁵⁷ According to this interpretation, Howells criticized the belief but not the believer. As Howells told fellow writer Charles Dudley Warner, the novel did not oblige him to reveal the secrets of the opening séance, to expose for his readers how the grasping hands at the séance table came into existence.¹⁵⁸ The point of the novel, then, was not to reveal the physical trick of spirit manifestations; it was to reveal the epistemological trick by which belief and skepticism could inhabit the same world.

The character of Boynton, who by the end of the novel is an ex-Calvinist and ex-spiritualist, is Howells’s instrument for revealing such a trick. As literary critic Howard Kerr

¹⁵⁵ *Ibid.*, 250, 319, 322.

¹⁵⁶ Vanderbilt, “‘The Undiscovered Country’: Howells’s Version of American Pastoral,” 637; Kerr, *Mediums, and Spirit-rappers, and Roaring Radicals*, 146; Palmer, “Realist Magic in the Fiction of William Dean Howells,” 219.

¹⁵⁷ Kerr, *Mediums, and Spirit-rappers, and Roaring Radicals*, 21.

¹⁵⁸ *Ibid.*, 141.

notes, “Boynton was more than a crank deluded by personal grief. His aim was to resolve the conflict between religious faith and scientific agnosticism by providing an experimentally verifiable alternative to doubt.”¹⁵⁹ Unlike Ford, who can inhabit only one world at a time—skepticism or faith—Boynton crosses epistemological boundaries with relative ease. From his sick bed, Boynton baits Ford with this conflation of scientific and religious epistemology:

The refusal of science to believe what it cannot subject to its chemic tests has its sublime side. It is at least absolute devotion to the truth, and it involves martyrdom, like the devotion to any other religion. For it *is* a religion, and you cannot get away from religion. Whether you say, I believe, or whether you say, I do not believe, still you formulate a creed.¹⁶⁰

But merely recognizing a porous boundary between science and religion does not allow Boynton to resolve the epistemological conflict between belief and doubt. On his second night in the country, Boynton offers this analysis of the Shaker brand of spiritualism: they “have conceived of spiritism as a science, and practiced it as a religion.”¹⁶¹ The Shaker style of spiritualism appeals to Boynton precisely because, as a science that is practiced as a religion, it does not need to be verified. Boynton does the reverse through his “spiritistic science”: he attempts, albeit unsuccessfully, to enact his religious belief through scientific practice. Boynton’s spiritual longings for confirmation of his wife’s afterlife drive his desire for certain knowledge of an otherworldly future. From his sick bed, Boynton explains to Ford the future-orientation of spiritualism, citing “an infrangible, a perpetual, continuity of endeavor” between this world and the next. According to Boynton’s logic, the great ideas of great men never die, since they are forever cycling back from the spirit world into the consciousness of men living. And this never-ending generative link between earthly and spiritual existence is, as Boynton tells

¹⁵⁹ Ibid., 123.

¹⁶⁰ Howells, *The Undiscovered Country*, 288.

¹⁶¹ Ibid., 181.

Ford, ultimately responsible for the progress of civilization.¹⁶² Thus, in Boynton's spiritualist epistemology, our future in this world is largely determined by our commingling with the next world.

The novel's verdict, unacknowledged by literary critics, is that spiritualism is fraudulent precisely because it is predictive. In the frenzy of self-doubt and repudiation with which Boynton ends his earthly life, he realizes that his method of scientific inquiry didn't fit his spiritual purpose. He admits to Ford that "there is a difference between seeking to ascertain some kind of fact of natural science and endeavoring to place beyond question the truth of a future existence."¹⁶³ It is this search for future existence that is the fatal flaw in spiritualist epistemology, then, as Boynton subsequently acknowledges to Ford. Spiritualism is not inherently false—both Boynton and Howells tell us as much—but when mistakenly used as a prophetic force, it becomes fraudulent. In a fervent final confession to Ford, Boynton declares,

Oh, I don't pronounce it [spiritualism] a fallacy, . . . I only say that it has proved fallacious in my hands, and that as long as it is used merely to establish the fact of a future life it will remain sterile. I will continue to be doubted, like a conjurer's trick, by all who have not seen it; and those who see it will afterwards come to discredit their own senses.¹⁶⁴

Not all attempts at foreknowledge in *The Undiscovered Country* are shams, however. In a seemingly trivial conversation about the weather while they await their train out of Boston, Boynton and Egeria discuss a mode of prophecy far more mundane but no more definite than their own. After Egeria remarks on the strange cast of the sky, Boynton observes, "Yes; the wind has changed to the east. The Probabilities, this morning, promised a storm."¹⁶⁵ The very name of late-nineteenth-century daily weather forecasts—"Probabilities"—admitted their

¹⁶² Ibid., 289-90, quotation on 289.

¹⁶³ Ibid., 358.

¹⁶⁴ Ibid., 370.

¹⁶⁵ Ibid., 112.

uncertainty. The “Probabilities” would inspire no one to embark upon an elaborate ritual of verification akin to a spiritualist exposé; one need only step outdoors to determine whether or not the weather prophecy had come true. But to Howells’s characters and most late-nineteenth-century Americans, venturing outside uncertain was far less frightening than facing the undiscovered country equipped with nothing but doubt.

In the novel’s climactic scene in Shaker country, Boynton and Ford discuss the meaning of Hamlet’s reference to the “undiscovered country from whose bourn no traveler returns.”¹⁶⁶ Boynton excitedly observes that for Hamlet, who utters these words after a visit from the ghost of his murdered father, belief disappears as soon as the apparition does. Boynton, abandoning the hope of spiritualism, concludes that “We *must* doubt it; we are better with no proof.” This epiphany completely reverses Boynton’s earlier pronouncement to Egeria: “We can’t wait for death. We have a right to know the truth from life.”¹⁶⁷ In abandoning his quest and renouncing his belief, Boynton, who for Egeria’s nineteen years had been obsessed with proving the possibility of life after death, finally accepts the logic of the unknowable future. But Boynton’s craving for knowledge of the future ultimately carries him across the threshold of the undiscovered country, as we learn from his attending physician, who reports that Boynton’s last moments were marked by a near “frenzy, to know whether we live again, and a willingness to gratify that desire at the cost of not living at all.”¹⁶⁸

Howells concludes his novel by reporting that Egeria and Ford have heard no news of the undiscovered country, no spirit messages from Boynton, and “they do not question his silence. They wait, and we must all wait.”¹⁶⁹ With this last line, Howells’s novel about the confrontation

¹⁶⁶ Ibid., 373.

¹⁶⁷ Ibid., 217.

¹⁶⁸ Ibid., 390.

¹⁶⁹ Ibid., 419.

of belief and unbelief resolves itself in the middle ground of an uneasy uncertainty. Belief and unbelief are ultimately irrelevant if all we can do, spiritualists and skeptics alike, is wait.

Howells's agnostic resolution embraces uncertainty about the most uncertain future of all: the afterlife.¹⁷⁰ Thus the first novel principally devoted to American spiritualism has as its central theme the social and epistemological problem of pretending to predict immortality.

Howells was not the only American novelist writing about spiritualist hoaxes after the frenzy of exposés in the 1870s. In 1884, Edward Bellamy, whose work had already earned Howells's commendation and a personal invitation for submission, sent Howells a manuscript of his romance *Miss Ludington's Sister: A Romance of Immortality*, which, like *The Undiscovered Country*, was clearly inspired by the Katie King scandal and had as its central theme "fraudulent spiritualism."¹⁷¹ In 1886, Henry James published his social satire *The Bostonians*, which featured a mediumistic main character and explored the same questions of psychic experience that animated his brother William's American Society for Psychical Research (ASPR), established the previous year.¹⁷² The ASPR, literary representations of spiritualism, and the public performances of spirit mediums like Eva Fay all functioned as theaters of authenticity—that is, public enactments of the question of whether or not spiritualist "experiments" yielded real results.¹⁷³ As we shall see in the next chapter, the most formal theater of authenticity for occult prediction was the judicial system, where the legal definition of fortune-telling produced much

¹⁷⁰ Kerr, *Mediums, and Spirit-rappers, and Roaring Radicals*, 147.

¹⁷¹ *Ibid.*, 148-52, quotation on 150.

¹⁷² Susan Wolstenholme, "Possession and Personality: Spiritualism in *The Bostonians*," *American Literature* 49, no. 4 (1978): 580.

¹⁷³ The practice of mesmerism, along with displays of scientific and technological innovations like electrification and telegraphy were also performed in theaters of authenticity throughout the nineteenth century. See Arthur Wrobel, ed., *Pseudo-Science and Society in Nineteenth-Century America* (University Press of Kentucky, 1987); Iwan Rhys Morus, *Frankenstein's Children: Electricity, Exhibition, and Experiment in Early-Nineteenth-Century London* (Princeton: Princeton University Press, 1998); Alison Winter, *Mesmerized: Powers of Mind in Victorian Britain* (Chicago: University of Chicago Press, 1998); Richard J. Noakes, "Telegraphy is an Occult Art: Cromwell Fleetwood Varley and the Diffusion of Electricity to the Other World," *British Journal for the History of Science* 32, no. 4 (1999): 421-59.

ambiguity and uncertainty regarding exactly what kinds of foretelling were permissible by law in the early twentieth century.

Chapter 8: Fortune-tellers and Courts

Recent work on spiritualism and obscenity regulation of the late nineteenth century has argued that the 1873 federal anti-obscenity legislation famously known as the Comstock Law represented the “culmination of a national moral panic in which Spiritualism and Spiritualists were at the center.”¹ This moral panic encompassed much more than spiritualism, however. In rapidly growing cities characterized by socio-economic disorder—social dislocation and violent confrontations between labor and capital—the saloon, the brothel, gambling establishments, and obscene literature represented a dangerous moral disorder in the eyes of middle- and upper-class social critics and reformers for whom the cityscape, with its constellation of vices, inspired fears of not only sullied individual virtue but also the moral disintegration of society as a whole.

The late-nineteenth-century response to such anxieties consisted of both regulation and reform efforts targeting disorderly conduct. The threat of moral disorder in rapidly growing cities was a major concern of police forces and local and state government, volunteer charity organizations staffed by middle-class reformers, and the writers who published a “torrent” of etiquette manuals in the last quarter of the century.² Social purity proponents, urban anti-vice societies, and middle- and upper-class reformers all endeavored to impose their standards of order, propriety and respectability on the growing population of urban America, a population that counted eleven million immigrants between 1870 and 1900. According to legal historian William Novak, “[m]orals regulation did not recede in the nineteenth century. It exploded.”³ Although temperance movements and other social reform traditions took root in the religious

¹ McGarry, “Spectral Sexualities,” 9.

² William J. Novak, *The People's Welfare: Law and Regulation in Nineteenth-Century America* (Chapel Hill: University of North Carolina Press, 1996), 149, 151; Paul S. Boyer, *Urban Masses and Moral Order in America, 1820-1920* (Cambridge, MA: Harvard University Press, 1978), 121-219; Kasson, *Rudeness and Civility*, 5. Quotation in Kasson.

³ Novak, *The People's Welfare*, 189.

revivalism of the Second Great Awakening, the explosion of morals regulation was particularly evident after the Civil War, with the passage of the first federal law against mailing “obscene” material (1865); the passage of the Comstock Law (1873), which broadened definitions of “obscene literature” and criminalized the mailing of material pertaining to birth control and abortion; the establishment of the New York Society for the Suppression of Vice (1874) and the Women’s Christian Temperance Union (1874); the establishment of the Society for the Prevention of Cruelty to Children (1875); the passage of “little Comstock laws” in twenty-four states by 1885; and the establishment of the national Anti-Saloon League (1895).⁴ Anti-alcohol and anti-prostitution efforts escalated in the 1890s, but had little demonstrable effect. The Progressive-era response to urban vice translated the “moral coercion” approach of the Gilded Age into investigative commissions, social scientific data gathering and analysis, and a public health imperative.⁵

Recent histories of vice in late-nineteenth- and early-twentieth-century America have generally charted one of two trajectories: the marginalizing or the mainstreaming of a particular social practice construed as deviant. The disciplining of the urban masses according to Victorian moral sensibilities has been the dominant narrative of recent scholarly literature on vice, a literature that clearly reveals the extent to which vice reformers cast their own ideologies in civilizing and modernizing terms.⁶ Two important exceptions to this historical trajectory that

⁴ McGarry, “Spectral Sexualities,” 8-10, 18-19.

⁵ Boyer, *Urban Masses and Moral Order in America*, 121-219; McGarry, “Spectral Sexualities,” 8-29; Novak, *The People’s Welfare*.

⁶ Nicola Beisel, *Imperiled Innocents: Anthony Comstock and Family Reproduction in Victorian America* (Princeton: Princeton University Press, 1997); Paul S. Boyer, *Purity in Print: The Vice-Society Movement and Book Censorship in America* (New York: Scribner, 1968); Alison M. Parker, *Purifying America: Women, Cultural Reform, and Pro-censorship Activism, 1873-1933* (Urbana: University of Illinois Press, 1997); Janet Farrell Brodie, *Contraception and Abortion in Nineteenth-Century America* (Ithaca: Cornell University Press, 1997); Timothy J. Gilfoyle, *City of Eros: New York City, Prostitution, and the Commercialization of Sex, 1790-1920* (New York: W. W. Norton, 1994); Elaine Parker, *Manhood Lost: Fallen Drunkards and Redeeming Women in the Nineteenth-Century United States* (Baltimore: Johns Hopkins University Press, 2003).

resonate with the history of fortune-telling prosecutions are gambling and shoplifting. Ann Fabian's history of gambling in nineteenth-century America illustrates the process whereby institutional speculators like the Chicago Board of Trade "had moved from the periphery of the financial universe to its moral center," thereby "domesticat[ing] the vice of gambling" into market speculation.⁷ Elaine Abelson's study of department-store shoplifters between the 1880s and 1920 illustrates the revolution in social norms that legitimized the thievery of middle-class housewives who flocked to glittering department store displays. When physicians invented the medical diagnosis of kleptomania, they effectively refashioned thieves into kleptomaniacs, thereby conferring middle-class status on a social practice—thieving—that had previously been a moral liability of the lower class. Although the practice of stealing remained unchanged, its cultural reimagination as a medicalized behavioral disorder allowed women to escape legal punishment.⁸ As gambling and shoplifting were reimagined at the turn of the century (by the financial and medical establishment, respectively), so too was fortune-telling reimagined (by its practitioners, its clients and critics, and the courts) into a socially acceptable—or at least ubiquitous—practice.

Despite these similarities to gambling and shoplifting, fortune-telling occupies a unique position relative to the history of vice. We can consider shoplifting—the antithesis of purchasing—a form of consumption, but the act of gambling, according to Fabian, "was neither production nor consumption."⁹ The same is true for fortune-telling, also a transactional experience. But the nature of the fortune-telling transaction was more abstract: gamblers and shoplifters who were skillful or lucky could come away with material gain, but fortune-seekers

⁷ Fabian, *Card Sharps and Bucket Shops*, 10.

⁸ Elaine S. Abelson, *When Ladies Go A-Thieving: Middle-Class Shoplifters in the Victorian Department Store* (New York: Oxford University Press, 1992).

⁹ Fabian, *Card Sharps and Bucket Shops*, 10.

left fortune-telling parlors with only the hope of a prosperous future. Furthermore, the site of the fortune-telling transaction—often a private residence where clients visited individually or in small groups—was a less public space than the saloon or the brothel. The transactional and private nature of fortune-telling rendered it difficult to police and difficult to interpret in courts of law.¹⁰

By the end of the nineteenth century, producers and consumers in the fortune-telling industry had begun to square off in the legal arena. Throughout much of the nineteenth century, urban law enforcement departments were the ones responsible for policing fortune-telling, every so often resorting to raids that swept fortune-tellers off the streets and into local jails or out of town. But by the end of the century, state courts replaced city cops as the policemen of the future. State courts began to reshape the regulation of fortune-telling through a series of decisions that centered not on the pragmatic question of whether one was reading palms, cards, or tea leaves, but on the epistemological question of whether one was *pretending* to foretell the future.

Legislation against fortune-telling in the United States had its roots in the anti-divination tradition in English law, which dates to the 1597-1601 Poor Laws and their vagrancy provisions.¹¹ An act against “Rogues, Vagabonds and Sturdy Beggars” mandated punishment for vagrants, gamblers, physiognomists, palmists, and fortune-tellers, and English witchcraft acts of the eighteenth and nineteenth centuries as well as the Vagrancy Act of 1824 also contained provisions against fortune-telling.¹² Fortune-telling legislation in the United States originated in the early republican era, when nearly all of the newly independent states passed legislation

¹⁰ Novak, *The People's Welfare*, 167.

¹¹ On fortune-telling as a misdemeanor under the Napoleonic Code, see Harvey, “Fortune-Tellers in the French Courts,” 133.

¹² Statute of the Realm 1597-8, Eliz 39, Ch. 4, p. 89, Blewett Lee, *Spiritualism and Crime*, 22 *Columbia L. Rev.* 439-49 (1922).

against ““rogues, vagabonds, common beggars, and other idle, disorderly and lewd persons.””¹³

What William Novak calls the “open-ended enumerations of classes of people deemed vagrants” often included fortune-tellers.¹⁴

A New Jersey statute classifying “all persons who shall use or pretend to use or have skill in physiognomy, palmistry or like crafty science” as disorderly persons had been on the books since 1799.¹⁵ Massachusetts law in this era included ““all rogues, vagabonds and idle persons, . . . or persons using any subtle craft, juggling or unlawful games or plays, or feigning themselves to have knowledge in physiognomy, palmistry, or pretending that they can tell destinies or fortunes . . . ””¹⁶ Baltimore’s vagrancy legislation, in effect in 1804, also included prostitutes, jugglers, fortune-tellers, and gamblers.¹⁷ The Pennsylvania House passed legislation outlawing fortune-telling in 1861, and the New York statute classifying fortune-tellers as disorderly persons was in effect in 1882.¹⁸ By the mid-1920s, most major cities in the U.S. had anti-fortune-telling laws on the books, laws that either prohibited fortune-telling outright or required exorbitant licensing fees. In 1926, fortune-telling was illegal in Birmingham, Boise, Baltimore, Boston, Chicago, Cincinnati, Charleston, Cleveland, Detroit, Des Moines, Hartford, Kansas City (MO), Louisville, Montpelier, New York, New Orleans, Omaha, Pittsburgh,

¹³ Quoted in Novak, *The People’s Welfare*, 167. The criminalization of fortune-telling was not a Progressive-era phenomenon, as Tammy Stone-Gordon suggests in “Fifty-Cent Sybils,” chap. 6. Stone-Gordon cites turn-of-the-century anti-prostitution and anti-immigration sentiments as the impetus for antidiagnosis legislation, but in fact antidiagnosis statutes were passed throughout the nineteenth century, and police raids against fortune-tellers occurred with regularity in post-Civil War American cities. Occasionally lawmakers were unaware of existing fortune-telling laws, as in the case of New York State Senator Wagner from Brooklyn who successfully proposed a bill outlawing fortune-telling and palmistry in 1901 even though Section 899 of New York’s Code of Criminal Procedure already prohibited fortune-telling. “Stumped on Physicology,” *Brooklyn Eagle*, April 4, 1901.

¹⁴ Novak, *The People’s Welfare*, 167.

¹⁵ *State v. Kenilworth*, 69 N.J. 144, 54A 244 (1903).

¹⁶ “An Act for suppressing and punishing Rogues, Vagabonds, common Beggars, and other idle, disorderly and lewd persons,” in *The General Laws of Massachusetts, 1780-1822*, ed. Asaheal Stearns and Lemuel Shaw, 2 vols. (Boston, 1823), I (1787), c. 54, 322, quoted in Novak, *The People’s Welfare*, 319n108.

¹⁷ Novak, *The People’s Welfare*, 319n108.

¹⁸ “Down on the Fortune-tellers,” *Brooklyn Eagle*, March 2, 1861; “The Law on Fortune-telling,” *Brooklyn Eagle*, November 2, 1882.

Providence, Phoenix, Portland, Peoria, San Francisco, Seattle, Salt Lake City, St. Louis, and Trenton.¹⁹ Despite widespread antidivination legislation, fortune-telling continued to be a booming business in late-nineteenth-century cities amid what historian David Allen Harvey has called “an atmosphere of tolerated illegality.”²⁰

When antidivination laws were enforced, they were enforced in public and private spaces—from Brooklyn street corners and Coney Island to fortune-telling parlors and seers’ residences—by urban police forces who conducted raids with increasing frequency throughout the late nineteenth century, most likely motivated by nativist and social purity ideologies.²¹ In 1858 New York City police rounded up eleven fortune-tellers (including astrologers, clairvoyants, and spiritualists) and brought them before the Chief Magistrate and Justice. Those who promised to stop telling fortunes were released, but others were forced to come up with bail or face jail time. The *New York Times* published their names and addresses, thereby providing free advertising in addition to censure.²² Pittsburgh police raided fortune-telling parlors in the summer of 1859, ordering the famous Madame Morrow out of town after fining her \$25 for being a ““common cheat.””²³ Baltimore police conducted raids in the spring of 1875 that resulted in the prosecution of so many fortune-tellers that the *New York Times* feared a migration to New York or other neighboring cities.²⁴ Newspapers regularly covered the policing of fortune-tellers, who were fined, jailed (if they could not post bond) when found guilty, or released on the

¹⁹ House Committee on the District of Columbia, *Fortune-telling Hearings on H.R. 8989 before the Subcommittee on Judiciary*, 69th Cong., 1st sess., 1926, 24. Exorbitant licensing fees were charged in Helena, Memphis, Madison, Pensacola, Raleigh, Richmond, and Topeka, and were charged by the day (\$5 or \$10), the week (\$50), the quarter (\$500), or the year (\$1000 or \$1500).

²⁰ Harvey, “Fortune-Tellers in the French Courts,” 139.

²¹ Stone-Gordon, “Fifty-Cent Sybils,” chap. 6.

²² “Unfortunate Fortune-Tellers—Eleven of them Before the Mayor,” *New York Times*, October 23, 1858.

²³ “Fortune-tellers in Trouble at Pittsburgh,” *New York Times*, June 21, 1859.

²⁴ “Soothsayers in Trouble,” *New York Times*, April 23, 1875.

conditions that they refrain from telling fortunes or leave town.²⁵ Fortune-tellers did not have much recourse before the law in the mid to late century other than to deny the charges against them and, in the case of Brooklyn astrologist Madame Phebe, claim that they did not tell fortunes but merely provided advice.²⁶ But beginning at the turn of the century, fortune-tellers, in the throes of professionalization, began to challenge their disorderly persons convictions on the grounds that they were engaged in something other than fortune-telling.²⁷

In August 1897, Coney Island underwent a “purifying” campaign initiated by Kings County District Attorney Foster L. Backus, who, after visiting the island with his wife and friends, announced that “all immorality must be suppressed” in a public space frequented by so many women and children.²⁸ Commonly referred to as “Sodom by the Sea” from the 1880s to the early 1890s, Coney Island received an extensive makeover in the mid-1890s with the construction of enclosed amusement parks such as Sea Lion Park and Steeplechase Park. But in the era of this “New Coney Island,” the grounds still offered a veritable carnival of amusement and escapism that flouted Victorian codes of social propriety and exasperated reform-minded

²⁵ Stone-Gordon, “Fifty-Cent Sybils,” 243. On the arrests of fortune-tellers throughout the second half of the nineteenth century, see “New-York City,” *New York Times*, January 13, 1854; “Unfortunate Fortune-Tellers—Eleven of Them Before the Mayor,” *New York Times*, October 23, 1858; “Fortune-tellers in Trouble at Pittsburgh,” *New York Times*, June 21, 1859; “Law Reports,” *New York Times*, November 26, 1865; “Look out for Her,” *Brooklyn Eagle*, September 10, 1867; “Fortune-Tellers in Trouble,” *New York Times*, July 25, 1873; “Soothsayers in Trouble,” *New York Times*, April 23, 1875; “Beware of Fortune-tellers,” *New York Times*, February 17, 1877; “Fortune-Tellers in Jersey City,” *New York Times*, December 8, 1877; “The Law on Fortune-telling,” *Brooklyn Eagle*, November 2, 1882; “Fortune-tellers Come to Grief,” *Brooklyn Eagle*, September 4, 1885; “She Told Fortunes,” *Brooklyn Eagle*, May 20, 1893; “The Stars in Their Courses Could Not Save the Astrologer From the Hands of a Process Server,” *Brooklyn Eagle*, March 18, 1895; “Fortune Teller Arrested,” *Brooklyn Eagle*, June 24, 1897; “After Fortune-tellers,” *Brooklyn Eagle*, November 19, 1897; “Fortune Teller Fined,” *Brooklyn Eagle*, December 24, 1897; “Fortune-telling Charged,” *Brooklyn Eagle*, May 2, 1898; “Paid Fortune-tellers \$800,” *Brooklyn Eagle*, November 12, 1898; “Over \$3,000 A Year For Telling Fortunes,” *Brooklyn Eagle*, March 24, 1900; “Palmist Held for Larceny,” *Brooklyn Eagle*, May 24, 1901.

²⁶ “Unlucky Star,” *Brooklyn Eagle*, June 23, 1884.

²⁷ On the formation of professional schools and societies within the fortune-telling industry, see Stone-Gordon, “Fifty-Cent Sybils,” 251.

²⁸ “Reform on Coney Island,” *New York Times*, August 4, 1897; “‘Fake’ Shows Must Close,” *Brooklyn Eagle*, August 4, 1897. A Republican elected Kings County District Attorney in 1895, Backus had previous careers in education and law and also served as Assistant District Attorney from 1877 to 1884.

critics like Backus.²⁹ Backus's targets included fortune-tellers, palm readers, and astrologists, as well as belly dancers, "immoral" motion picture houses, and games of chance.³⁰ However, ridding Coney Island of its numerous fortune-tellers proved to be a bit more difficult than shutting down the "couchee couchee" dancers and scantily costumed performers found in what Backus called "'questionable theaters and improper shows,'" due to the fact that local government and law enforcement officials could not agree on what constituted fortune-telling.³¹

According to the *Brooklyn Eagle*, Backus tolerated those who professed to tell the events of the past but set his sights on arresting as disorderly persons any and all who "pretend[ed] to foretell the future," in strict accordance with Section 899 of New York's Code of Criminal Procedure.³² In mid-August, seven fortune-tellers and palmists were arrested and held on \$300 bail.³³ The mayor and the police commissioner did not share Backus's literalist interpretation of New York's antidiagnosis statute, claiming instead that palm readers were practicing the science of palmistry—not pretending to foretell the future—and therefore not guilty of a misdemeanor. Many fortune-tellers exploited this disjuncture between the language of the statute and its enforcement by reinventing themselves as perfectly legal "character readers" in mid-August, thereby thwarting Police Captain Thomas H. Collins's attempts to evict them.³⁴ And Captain Collins, for his part, acknowledged in an interview that character-reading was "fake," but not illegal.³⁵

²⁹ Kasson, *Amusing the Million*, 57-58, 36.

³⁰ "'Fake' Shows Must Close," *Brooklyn Eagle*, August 4, 1897; "Reform on Coney Island," *New York Times*, August 4, 1897.

³¹ "Coney's Touch of Reform," *Brooklyn Eagle*, August 23, 1897.

³² Lee, *Spiritualism and Crime*, 446. Fortune-telling was both illegal and highly visible at Coney Island before Backus's reform campaign. In the summer of 1895, fortune-tellers congregated less than a quarter of a mile from the police station and prominently displayed signs advertising their services. "Wilted at Coney Island," *New York Times*, August 12, 1895.

³³ "Reforming Coney Island," *New York Times*, August 19, 1897.

³⁴ "Backus is Not Satisfied," *Brooklyn Eagle*, August 16, 1897.

³⁵ "Gamblers Hastily Depart," *New York Times*, August 9, 1897.

When Backus toured Coney Island toward the end of August to assess the results of his reform crusade, he was largely satisfied that “fakirs and costumed entertainers” were no longer in operation, but the fortune-tellers were still very much in business. In a paradoxical bit of self-promotion, fortune-tellers hung signs advertising that they could not tell fortunes. Instead, they would show photographs of future spouses for a fee of ten cents. Backus visited two different fortune-tellers, both of whom pressed a piece of purportedly photographic paper against his palm and then revealed a different piece of paper with the picture that had “developed.” And Backus became indignant when the second fortune teller, a bit nervous about having the District Attorney as a client, inadvertently showed him a picture of a young African-American woman as his bride-to-be.³⁶

This bit of photographic fortune-showing rather than fortune-telling did not allow fortune-tellers to escape punishment for very long, however, as Backus ordered the arrest of one Madame Dora and numerous others for advertising such a service.³⁷ During an August 27, 1897 trial in Coney Island police court, Madame Dora’s defense lawyer argued that she only read her clients’ palms and did not pretend to tell fortunes. When Backus cross-examined her, she admitted to selling photographs of husbands- and wives-to-be, pictures that she bought by the thousand from a New Jersey supplier. Madame Dora went on to describe some principles of palmistry that she relied on in order to determine how many times a client would marry, whether the spouse would be “light or dark complexioned,” and how many children they would have. However, Police Justice J. Lott Nostrand was not persuaded by Madame Dora’s palmistry defense and sentenced her to be placed under bonds. Five other fortune-tellers appeared before Nostrand on the same morning and were found guilty, but they were released with suspended

³⁶ “Coney’s Touch of Reform,” *Brooklyn Eagle*, August 23, 1897.

³⁷ *Ibid.*

sentences contingent on the promise that they would no longer ply their trade on Coney Island.³⁸ Backus was not always as successful in his prosecution of fortune-tellers, however. The following week, in early September 1897, he was unable to win a conviction of self-described “scientific palmist” Mlle. Agnes Charcot of Bergen Beach when the jury agreed with her defense that “palmistry was a recognized science” and took only two minutes to acquit.³⁹ Such a verdict would not have been surprising to onlookers, since, according to the *Brooklyn Eagle*, “it was a well known fact” that Coney Island juries were unwilling to convict those working in the local entertainment industry.⁴⁰

Police Justice Nostrand, whose courtroom was located right next to the holding cells at the Twenty-fourth Police Station at Coney Island, counted among his complaints not only the difficulty in impaneling impartial juries but also the squalor of the police station cells. During the sweltering summer of 1897, Justice Nostrand brought some kind of “powerful disinfectant” into his courtroom to counteract the pungent odors emanating from the cells.⁴¹ Such sordid conditions were not uncommon in police-station courtrooms in late-nineteenth-century cities, where justices of the peace—court employees without formal legal training—presided over civil cases and lesser criminal cases in a casual atmosphere that was nonetheless extremely influential in the lives of the workers, debtors, tenants, spouses, and parents who appeared before the court. In 1888 New York’s mayor, Abram Hewitt, declared that the police justice ““in nearly all cases affect[s] the life, liberty, and property of the citizens.””⁴² Thus the targets of District Attorney

³⁸ “Told Miss Ahngren’s Fate,” *Brooklyn Eagle*, August 27, 1897.

³⁹ “Mlle. Charcot Acquitted,” *Brooklyn Eagle*, September 7, 1897.

⁴⁰ “Will Make His Own Lists,” *Brooklyn Eagle*, August 23, 1897.

⁴¹ “News from the Suburbs,” *Brooklyn Eagle*, July 8, 1897.

⁴² Michael Willrich, *City of Courts: Socializing Justice in Progressive Era Chicago* (New York: Cambridge University Press, 2003), 3-6, quotation on 5.

Backus's "cleanup" were brought before the law in a setting far more unclean than their Coney Island workplace.

By the last days of August 1897, Backus had deemed his Coney Island cleanup a success and believed he had fulfilled his own mission of "protect[ing] the fools who insist upon spending their money with the fortune-tellers."⁴³ Backus may have temporarily purged Coney Island of traditional fortune-tellers, but they quickly reemerged with refashioned personas. In 1901, an article on the consolidation of Coney Island's small entertainment venues noted this shift in the fortune-telling industry:

Instead of the old gypsy fortune-tellers, who were satisfied to prophesy a glorious future with great wealth and any number of husbands of wives . . . for the modest sum of 25 cents, there was formed during the summer a 'trust' which included four of the best known "palmists" on the Island. They hired a large place on the Bowery, fitted it up sumptuously, and were soon doing a land office business.⁴⁴

By 1903, all of Coney Island's fortune-tellers were again doing a booming business, with their "shanties crowded at all hours" with men and women eager to have their fortunes told not by fortune-tellers or palmists, but by "philosophers of physiognomy and psychology."⁴⁵ Thus the "old gypsy fortune-tellers," who embodied a pre-modern tradition of ritual and the occult, had become modern practitioners of a new, scientific brand of divination.

Backus was neither the first nor the last to attempt to impose law and order on the "laborator[y] of the new mass culture" that was Coney Island, and he was certainly not alone in his moral indignation at the island's revelry and irreverence.⁴⁶ Indeed, a Presbyterian clergyman who cheered Backus's crusade deemed Coney Island "a nest for the breeding of moral

⁴³ "Backus is Satisfied," *Brooklyn Eagle*, August 30, 1897; "Coney's Touch of Reform," *Brooklyn Eagle*, August 23, 1897.

⁴⁴ "Coney Island in the Throes of Craze for Consolidation," *Brooklyn Eagle*, September 15, 1901.

⁴⁵ "A Day with the Fortune-tellers of Coney Island," *New York Times*, August 2, 1903.

⁴⁶ Kasson, *Amusing the Million*, 8. In 1894, Mayor Schleren ordered sweeping reform of Coney Island, targeting dance halls and theaters, banning all costumes and games of chance, and calling for the regulation of saloon licenses. "Old Coney Island No More," *New York Times*, May 6, 1894.

scorpions.”⁴⁷ Nor was Backus’s targeting of fortune-telling a lone man’s fight against the occult. As Jackson Lears observes, the 1890s were marked by a “sustained assault on popular superstitions,” spearheaded by scientists, liberal Protestants, and secularists.⁴⁸

But the story of Backus’s reform efforts and his ultimately unsuccessful campaign against fortune-telling on Coney Island is especially significant because it illustrates the instability of fortune-telling’s legal and cultural definitions. Backus’s struggle also suggests that policing fortune-telling was especially difficult for two reasons: first, fortune-telling was one of the “ill-defined offenses” (like vagrancy) characteristic of nineteenth-century morals regulation; and second, fortune-telling was consistently reimagined by its practitioners as well as the legal system in the late nineteenth and early twentieth centuries.⁴⁹

In 1896 the Michigan State Supreme Court rejected the appeal of clairvoyant Arthur Elmer, who had been convicted as a disorderly person because “he pretended to tell fortunes.” At the heart of this case was Elmer’s reinvention of a public persona that distanced itself from “fortune-telling,” a rhetorical maneuver that failed to persuade the court. Elmer claimed that he was a “magnetic healer” and a “clairvoyant physician,” not a fortune teller, that he was engaged in “prognosticating” and “looking into the future,” but not “telling fortunes.” His self-promotion, however, suggested otherwise.⁵⁰

When Elmer sent advance notice of his arrival in Ionia, Michigan in 1895, he billed himself a “modern day seer” and a “Clairvoyant, Trance Medium, and Healer.” He promised “a peep through the keyhole of the mysterious future,” business and legal advice, romantic counsel, the names of future spouses and the locations of buried treasure and long-lost relatives, character

⁴⁷ “Reform at Coney Island,” *New York Times*, August 5, 1897.

⁴⁸ Lears, *Something for Nothing*, 176.

⁴⁹ Novak, *The People’s Welfare*, 167.

⁵⁰ *People v. Elmer*, 109 Mich. 493, 67 N.W. 550 (1896).

reading and career counseling. In his lengthy newspaper ads he even promised to divine the contents of one's stomach. And he advised one client, Mrs. Webber, to leave her husband after his trance revealed that her husband would murder her. Witnesses reported that Elmer "pretended to go into a trance" and then described his vision of the future, sometimes while still in the throes of the trance or sometimes after. According to one witness, Elmer "'said the reason he went into a trance was to tell the future and the past.'" But according to Elmer, none of this amounted to "fortune-telling," and he said as much to prospective clients. The court did not appreciate Elmer's semantic subtlety and saw no distinction between "prognosticating" and "telling fortunes" since legally, "it was immaterial what name the respondent applied to his acts." The court also found no distinction between "professing to possess a power and pretending to exercise that power," finding Elmer guilty of doing both.⁵¹

Arthur Elmer was not alone in his efforts to distance himself from the term *fortune-telling* at the turn of the century. Criminalization of fortune-telling and new demands of a consuming public inspired scores of fortune-tellers to refashion themselves as scientific practitioners, thereby distancing themselves from the clairvoyant arts of conjuring, tea leaf reading, and card reading, and from the "cheap 25 cent fake fortune teller[s]" who relied on such practices.⁵² In 1896 three Coney Island fortune-tellers were arrested and appealed their sentences on the grounds that palmistry and phrenology were sciences and thus legitimate enterprises.⁵³ A year later Lady Gonzalez of Bergen St. in Brooklyn advertised herself as "the greatest mind, sight and character reader and scientific palmist in the world," declaring, "[D]o not class me among

⁵¹ *Elmer*, 109 Mich. 493.

⁵² For an overview of fortune-telling practices, see Stone-Gordon, "'Fifty-Cent Sibyls,'" 14-15; "Clairvoyants," *Brooklyn Eagle*, December 7, 1896.

⁵³ "Science in Fortune-telling?" *Brooklyn Eagle*, September 15, 1896.

fortune-tellers, as I am not one.”⁵⁴ In 1899 the *Brooklyn Eagle* ran an ad for a “Mrs. Hutchings, business clairvoyant, not a fortune teller.”⁵⁵ In the same year a self-described character reader named Haleel took umbrage with the newspapers that labeled him a soothsayer. According to Haleel, he was “no fortune teller, but a scientific reader of character from the voice, face and hands.”⁵⁶ As these advertisements suggest, it was quite simple for fortune-tellers to transform their business from art to science: they just renamed it.

As a 1901 headline in the *Brooklyn Eagle* declared, “To Produce a New Science Add ‘Ology’ to Your Name.” To capitalize on the current fad of “‘ologies,’” this article advised fortune-tellers, “just add an ‘ology’ to your name, jumble up all your methods into one and your own financial success for a time at least is assured.” The *Eagle*’s interview with a middle-aged fortune teller named Mrs. Glyn—Brooklyn’s only practitioner of “Glynology”—revealed major changes in the fortune-telling industry, for both the fortune-tellers and their consuming public. According to Mrs. Glyn, traditional fortune-telling had become trite, and her clients were in the market for “‘something new,’” something more exotic: “[t]he public—at least that portion of it that cares for fortune-telling—has an idea that there’s something uncanny, strange and mysterious about an ‘ology.’ Look at astrology or phrenology. Fortune-telling by cards or even palm reading sounds plain compared to it.”⁵⁷

But however strange and mysterious this new science of the future, when a client asked for “‘a séance of glynology,’” he got “‘just fortune-telling,’” plain and simple. For her part, Mrs. Glyn did her best to “‘lead them away from the word [*fortune-telling*],” offering specific fortune-telling practices—palmistry, horoscope reading, trance—rather than the promise of a fortune

⁵⁴ “Clairvoyants,” *Brooklyn Eagle*, November 30, 1897.

⁵⁵ *Brooklyn Eagle*, February 8, 1899.

⁵⁶ “‘Haleel’ No Soothsayer,” *Brooklyn Eagle*, January 30, 1899.

⁵⁷ “To Produce a New Science Add ‘Ology’ to Your Name,” *Brooklyn Eagle*, September 29, 1901.

foretold. Reinventing fortune-telling as a scientific enterprise proved to be a shrewd business maneuver on the part of Mrs. Glyn, who reported doubling her business to fifty clients a day once she became an “‘ologist’” instead of “a common every day fortune teller.”⁵⁸ Mrs. Glyn’s was a success story, but advertising one’s fortune-telling business as a more scientific enterprise could just as easily backfire if it left one legally vulnerable. Indeed, in 1903 New Jersey palm reader Zoza Kenilworth was convicted and fined when the court deemed palmistry a “crafty science” and thus punishable under a 1799 disorderly persons statute.⁵⁹

Both Arthur Elmer and Mrs. Glyn refashioned their public personas—as “prognosticator” and “Glynologist,” respectively—in an attempt to disguise the ordinariness of their fortune-telling enterprises. It is obvious from their marketing strategies that both were pretending—Elmer pretended he was less than a fortune teller, whereas Mrs. Glyn pretended she was more. The word *pretend* took on far more subtle and complex meanings in a series of early-twentieth-century state court decisions in which fortune-tellers and the courts faced off over not fortune-telling’s legality but rather the very definition of fortune-telling, what constituted it and what did not. The scope of the Elizabethan statute against rogues, vagabonds, and beggars included “. . . all idle persons going about in any Country eyther begging or using any subtile Crafts or unlawfull Games and Playes, or fayning themselves to have knowledge in Physiognomie, Palmestry, or other like crafty Scyence, or pretending that they can tell Destenyas, Fortunes, or such other like fantasticall Ymagynacōns . . .”⁶⁰ A key phrase in this excerpt—“pretending [to] tell . . . Fortunes”—took on new legal and epistemological significance at the turn of the century. Fortune-telling’s meaning and boundaries had long been negotiated informally by clairvoyants

⁵⁸ Ibid.

⁵⁹ *State v. Kenilworth*, 69 N.J. 114, 54A 244 (1903).

⁶⁰ Statute of the Realm 1597-8, Eliz 39, Ch. 4, p. 89. Witchcraft acts of the eighteenth and nineteenth centuries as well as the Vagrancy Act of 1824 also contained provisions against fortune-telling.

and their clients, as evidenced by the common “no gents” policy as well as the sliding fee scale for business predictions, medical clairvoyance, and character reading. But as the boundary between what was considered fortune-telling and what was not became the subject of formal legal inquiry, fortune-tellers and the courts both advanced more circumscribed definitions of fortune-telling.

A literalist interpretation of the phrase “pretending to tell fortunes,” first formulated in the Elizabethan act against “Rogues, Vagabonds, and Sturdy Beggars” at the turn of the seventeenth century, suggests that the act of foretelling is impossible and that all those engaged in such activities are by definition frauds.⁶¹ Indeed, in New York appellate decision *People v. Malcolm* (1915), the court accepted the prosecution’s interpretation of “pretending to tell fortunes” as skepticism embedded in the language of the law, “simply signify[ing] the fact that the legislature deemed it an impossible thing to tell fortunes.”⁶² But a reading of the rest of the act against “Rogues, Vagabonds, and Sturdy Beggars” suggests a more complex definition of the phrase. Also named in the act were those “fayning themselves to have knowledge in Physiognomie, Palmestry, or other like crafty Scyence.” Inherent in the phrase “feigning to have knowledge” is a dichotomy between authenticity and quackery: those who possess authentic knowledge of these so-called “crafty sciences” as opposed to those who are merely faking it. Indeed, in numerous early-twentieth-century fortune-telling cases, rhetorical appeals to science (i.e., astrology and palmistry) and religion (i.e., Spiritualism) suggested that some people could legitimately foretell the future without “pretending.” So in order to evaluate the legality of

⁶¹ The word *pretending* did not appear in the anti-divination provision of the Napoleonic Code but did appear in a jurist’s comment of 1858 that identified “fortune-tellers, supposed sorcerers, card readers, . . . all those who make a profession of pretending to uncover hidden facts, to predict the future, by the means of superstitious practices.” P. Gilbert, ed., *Codes d’instruction criminelle, penal et forestier*, vol. 3 of *Les codes annotés de Sirey, contenant toute la jurisprudence des arrest et la doctrine des auteurs* (Paris, 1858), 608-16, quoted in Harvey, “Fortune-Tellers in the French Courts,” 134.

⁶² *People v. Malcolm*, 90 Misc. 517, 154 N.Y.S. 919 (1915).

fortune-telling in a particular case, courts had to assess the authenticity of the particular fortune teller. This meant that questions of a fortune teller's intent became the subject of legal scrutiny.⁶³ Whether or not a fortune teller could be deemed authentic, and whether or not her intent was to defraud were questions that the courts sought to answer.⁶⁴

In *Wolf v State of Ohio* (1904), Cleveland spirit medium Lena Wolf won a dismissal of her conviction as a fortune teller in a case that centered on questions of intent, self-representation, and the public meaning of "fortune-teller." Lena Wolf was charged with "unlawfully represent[ing] herself to be a fortune-teller" to a police officer named James Dolan.⁶⁵ She and Dolan sat facing each other over a wooden table, upon which Wolf placed her palms and, according to the court, "pretend[ed] to place herself in a tranced condition . . . and while pretending to be in said tranced condition" took Dolan's right hand and told him that his present business would change by the new year and that his new venture would be very profitable. Wolf also predicted an uneasy relationship with an intimidating business partner but assured Dolan that he would ultimately be "all right." Lena Wolf's final vision was a bit ambiguous: she saw "a gold field; lots of gold" but warned Dolan not to venture toward it.⁶⁶

The decision to overturn Wolf's conviction revealed the court's skepticism as well as its narrow definition of fortune-telling. In the summary of Wolf and Dolan's encounter, the court expressed its skepticism in parenthetical remarks that suggested that Wolf's actions were not those of a fortune teller: "(So far there is no representation that she is a fortune-teller; so far she could do all that without making any pretense of being a fortune-teller.) . . . (up to this point, so

⁶³ Gregory G. Sarno, *Annotation: Regulation of Astrology, Clairvoyancy, Fortunetelling, and the Like*, 91 A. L. R. 3d 766, 770-71 (1999).

⁶⁴ French jurists were animated by similar questions of fortune-tellers' intent in the nineteenth and twentieth centuries. See Harvey, "Fortune-Tellers in the French Courts," 135.

⁶⁵ It was common practice for police departments to send undercover officers, usually women, to elicit a fortune-telling.

⁶⁶ *Wolf v. State of Ohio*, 24 Ohio C.C. (n.s.) 526 (1904).

far as appears, she made no representation of being a fortune-teller) . . . ” Simply facing a man across a table and “pretending” to enter a trance did not mean that Wolf was presenting herself as a fortune teller, the court ruled. The court also noted that her prediction of a profitable new business venture for Dolan was the kind of innocuous comment anyone might make to an acquaintance without explicitly telling one’s fortune:

Now to that extent there seems to be a fore-telling of a future event; but if it required any kind of mystic help to say to one he is likely to change his business, it seems a little strange. Indeed I suppose it would not be regarded as fortune-telling for any one to say “I do not think you will continue in the business in which you now are.”

This point in the ruling is especially significant because it establishes prediction as a ubiquitous and thus legally reasonable act. Finally, the court observed that Wolf’s vague prediction of a troubled partnership in a gold venture did not foretell a specific future event. The court’s ruling drew a sharp distinction between the capacity to foretell and the act of foretelling, declaring that just claiming the ability to read palms or commune with the dead did not itself warrant the charge of fortune-telling. The ruling also distinguished between private and public self-representation as a fortune teller, finding that Wolf’s individual session with Dolan did not make her a fortune teller in the public eye. And the public, the court noted, would be foolish to fall for this “ignorant Indian girl” whose predictions were nothing but “trash.”⁶⁷ In this ruling, “pretending” ultimately meant that Lena Wolf was guilty of adopting a persona, nothing more, and that she was not predicting any more specifically (or successfully) than the average person might.

In a 1908 appellate decision in New York, *Fay v. Lambourne*, the court was not nearly as sympathetic to fortune-tellers as the Ohio court had been to Lena Wolf. In this case, the court ruled that the act of “pretending to tell fortunes” was inherently deceptive and fraudulent, and,

⁶⁷ *Wolf*, 24 Ohio C. C. (n.s.) 526 (1904).

somewhat ironically, that those who pretended to foretell the future for a living were not eligible for legal protection from those who tried to cheat them. “Equity does not adjust the differences between rogues,” the opinion read.⁶⁸ Two of the rogues involved were no strangers to the charges of fraud that regularly swirled around spirit mediums and fortune-tellers throughout the late nineteenth century. They were born into it, in fact: John Fay was the son of the “indescribable phenomenon” Anna Eva Fay, and his wife Eva stepped into her mother-in-law’s stage persona (but only a fraction of her acclaim) as a mind-reading specialist on the vaudeville circuit in the early years of the twentieth century. Billed as the “Marvelous Fays,” John and Eva Fay gave mind reading performances in which Eva, in an entranced state, would ask the audience to write questions on pads of paper that she would then answer correctly at least 95 percent of the time, according to the *Washington Post*.⁶⁹ In May 1906, John Fay told a *Boston Globe* interviewer that “Mrs. Fay when she is blindfolded feels as if she were floating about on ether. The questions that people write then flash before her, as she explains it, somewhat like the flickering of a moving picture machine.”⁷⁰

A somewhat different explanation of Eva Fay’s perspicacity came from the two other “rogues” involved in the lawsuit, Herbert Lambourne and Louis Granat, former assistants of the Fays who also toured under the name “The Fays” (sometimes “The Phays”) and put on a play entitled “The Flamaturgists.” This play was part of Lambourne’s mission to, as he put it, “expose the fraud committed by them [the Fays] upon the public.”⁷¹ The Fay’s false thaumaturgy, according to Lambourne and Granat, was accomplished with the help of charcoal powder applied to subsequent pages of the audience’s notepads (that revealed what had been

⁶⁸ *Fay v. Lambourne* 124 A.D. 245, 108 N.Y.S. 874 (N.Y. App. Div., 1908).

⁶⁹ “Feats of Thaumaturgy,” *Washington Post*, December 10, 1905.

⁷⁰ “Wonderful Occult Powers,” *Boston Daily Globe*, May 21, 1906.

⁷¹ “Call ‘The Fays’ Frauds Who Trick Audiences,” *New York Times*, September 14, 1906.

written on the sheet above), a cohort of Fay confederates scattered throughout the audience who “developed” these pieces of paper, and a system of speaking tubes and telephones that connected Fay and her staff working beneath the stage (see Figure 10).⁷²



Figure 10: “Getting the ‘Dope’ from Under the Stage.” Thomas J. Minnock, “Confessions of a Reformed Graftor,” *Chicago Tribune*, August 3, 1913.

John and Eva Fay sued their former employees for using their name in advertisements and posters that attracted onlookers who mistakenly expected to see the real Fays.⁷³ The New

⁷² Ibid.

⁷³ Perhaps an unusually litigious mind-reader, Eva Fay threatened to sue well-known journalist and romantic novelist Richard Harding Davis in October 1909 for depicting her and her husband, who had committed suicide in December

York State Supreme Court originally ruled in favor of John and Eva Fay, but the judgment was subsequently overturned in favor of the fake Fays. The appellate court's rationale for the reversal hinged on the act of pretending to tell fortunes. The court noted that Mrs. Fay's "ability to answer these [written] questions and to foretell the future is pretended to come from supernatural powers possessed by her." The "pretense of occult powers," the opinion read, "is a species of fortune-telling and is a fraud upon the public." Since the real Fays were "engaged in deceiving the public, and the most entertaining part of their performance is in fact fortune-telling," the court ruled, they were not entitled to protection of a trademark that was "intended and calculated to deceive the public."⁷⁴ In this case, the court was faced with two sets of pretenders: the real Fays, who were legally accountable for "pretending to tell fortunes," and the fake Fays, whose advertisements pretended they were the real Fays. Of course the intent of the fake Fays in pretending to be the real Fays was to expose the real Fays as frauds (and to profit from the exposé). According to the somewhat dizzying logic of this ruling, then, "pretending to tell fortunes" was not legally permissible, but pretending to be the ones pretending to tell fortunes was.⁷⁵

These turn-of-the-century decisions—*People v. Elmer*, *State v. Kenilworth*, *Wolf v. State of Ohio*, and *Fay v. Lambourne*—sought to determine whether a defendant was pretending to tell

1908, as frauds. Eva Fay vowed to seek \$20,000 in damages from Davis on the grounds that his exposé would ruin her career, but I have found no evidence that she followed through on her threat. "Mrs. Fay to Sue Author," *New York Times*, October 16, 1909; "John T. Fay Kills Himself," *New York Times*, December 22, 1908. On the publication of Davis's novel *Vera, the Medium* and Fay's reaction, see Stone-Gordon, "Fifty-Cent Sybils," 165.

⁷⁴ *Fay* 108 N.Y.S 874 (1908).

⁷⁵ This case was not the only instance in which Eva Fay found herself the victim of mistaken identity. When her mother-in-law, the original Anna Eva Fay, died in 1927, several newspapers confused the two and printed Eva Fay's obituary instead, whereupon several banks closed Fay's accounts. In March of 1928, a lawyer for a Dobbs Ferry painting contractor owed money by Fay alleged that she orchestrated the death notices to dodge the debt collection. But Eva Fay did not pretend to be Anna Eva Fay for very much longer; she appeared in court and agreed to pay the painter in July of 1928. Still, the two Eva Fays were often confused in newspaper reports and in popular consciousness. In 1910 a *Washington Post* article on spiritualism referred to "the first Anna Eva Fay who toured this country" and noted, "There are several Anna Eva Fays, by the way." "Says Eva Fay is Alive," *New York Times*, March 31, 1928; "Mrs. Eva Fay in Court; Long Believed Dead," *New York Times*, July 28, 1928; Frederic J. Haskin, "Spiritualism and Magic: IV—Rope Typing and Rapping," *Washington Post*, May 15, 1910.

fortunes and thus focused on the act of predicting itself. A series of later decisions focused not on whether accused fortune-tellers were predicting, but rather on whether they were predicting with certainty. In the World War I era, the courts shifted their attention from the intent and action of the predictor to the nature of the prediction itself.

In *State v. Neitzel* (1912), the Washington state Supreme Court upheld an astrologist's vagrancy conviction for reading horoscopes and telling fortunes for a fee. An undercover police officer paid a visit to F. F. Neitzel, an ordained minister in the National Astrological Society, and asked for his fortune to be told. Neitzel's response was that he could not engage in fortune-telling but would attempt to "figure it out," and gave the officer a horoscope reading of both past and future occurrences for one dollar. Rejecting the defense's argument that Neitzel was practicing the science of astrology, the court ruled that the defendant was clearly "engaged in fortune-telling, for he was professing to tell future events in the life of the witness."⁷⁶ The court thereby ignored Neitzel's claim to predicting with uncertainty—that he couldn't tell fortunes but would "figure it out"—and found him guilty of predicting with certainty for his foretelling of future events in the police officer's life.

In a case frequently cited as a precedent in subsequent rulings, *People ex rel. Preiss v. Adams*, astrologer Evangeline Adams was acquitted in 1914 based on the New York City Magistrate court's ruling that "[e]very fortune-teller is a violator of the law; but every astrologer is not a fortune-teller." The court also noted that merely identifying the "life line," "head line," and "heart line" on one's palm did not make a palmist guilty of pretending to tell fortunes.⁷⁷ According to the court's ruling, astrologers and palmists were not predicting with certainty: "there is a line of distinction between the person who pretends to be able to read the future and

⁷⁶ *State v. Neitzel*, 69 Wash. 567, 125 P. 939 (1912).

⁷⁷ Sarno, *Annotation of Clairvoyancy and Astrology*, 793.

tells with positiveness what will or shall happen; and the one who merely reads a sign as indicating what ought to happen but is particular to make it plain that he is not attempting to predict future events.” The one who did predict with certainty was a “charlatan, an oppressor and an imposter,” the court ruled, but the one who predicted with uncertainty was not by definition a fortune teller. In order to be guilty of “pretending to tell fortunes” (a “peculiar” wording, the court noted), one must intend to defraud or dissemble.⁷⁸

Furthermore, the opinion declared, the purpose of the antidiagnosis statute was to defend a naïve public against the “quackery” and “knavery” of deliberately specious fortune-telling. The court did allow that not all fortune-tellers were quacks and knaves, however, and that some fortune-tellers were truly convinced of their own clairvoyance and possessed only the most honorable motives in telling fortunes. But despite this acknowledgement that some were, in their own minds, not merely pretending to tell fortunes, the court concluded that “the law is not concerned so much with the good faith of the party pretending to possess this ability, as it is concerned with dealing in a human way with the things that are within human knowledge only.”⁷⁹

In another frequently cited case of the following year, *People v. Malcolm* (1915), a disorderly persons conviction was upheld against New Yorker Maude Malcolm, a self-described astrologist and palm reader. The appellate court ruled that palmists and astrologists could give “general advice as to the future of persons” or draw inferences from character reading without committing the act of fortune-telling. However, the ruling declared, should fortune-tellers refer specifically to particular events (e.g., “marriage, death and travel”), they are telling fortunes and are thus disorderly persons. Predicting with uncertainty was permissible, according to the

⁷⁸ *People ex rel. Preiss v. Adams* 32 N.Y. Crim. 326 (1914).

⁷⁹ *Ibid.*

court's logic, but predicting with certainty was not. And Maude Malcolm was guilty of the latter.⁸⁰

Police officer Isabella Goodwin went to Malcolm's place on West 109th St. seeking a two dollar reading. After learning the police officer's birthday, Malcolm warned her to avoid hurrying (for fear of a foot injury) and eating red meat. After looking at Goodwin's palm, Malcolm foretold the following: in 1916 she would marry a medium-skinned man who was interested in machinery; her aunt Anne would die from indigestion the same year; Goodwin would take a trans-Atlantic voyage in 1917; and that Goodwin's nephew, who worked in a mining camp, had sent her a letter that had been lost in the mail. For this glimpse of the future Goodwin paid two dollars, but at trial the police offer revealed numerous inconsistencies in Malcolm's prognostications, chief among them that she didn't even have an aunt named Anne. Malcolm was found guilty and put under \$1,500 bond for one year's good behavior. Malcolm appealed her conviction on two grounds: first, in order to convict those who "pretend" to tell fortunes, the prosecution must demonstrate "an element of deceit or fraud" on the part of the fortune teller; and second, the "so-called science or system" of astrology and palmistry rendered them separate from fortune-telling. The court disagreed on two grounds. First, the intent of "deceit or fraud" was simply not feasible to prove: one would have to wait (who knows how long) to see if a prophecy did in fact come true. Second, the basis or method of making prophecies was irrelevant.⁸¹

In Maude Malcolm's case, as well as the cases involving F. F. Neitzel and Evangeline Adams, the courts ruled that making uncertain, ambiguous, or vague predictions was legally permissible, but making predictions with certainty and specificity constituted "pretending to tell

⁸⁰ *People v. Malcolm*, 154 N.Y.S. 919 (1915)

⁸¹ *Ibid.*

fortunes” and was thus illegal. In the 1918 case of *People v. Ashley*, Alice Ashley, a Brooklyn Spiritualist minister, was not charged with predicting with certainty, but she ran afoul of the law nonetheless. Ashley unsuccessfully appealed her conviction as a disorderly person accused of “pretending to tell fortunes.” Presenting herself as the president of and a minister in the Brooklyn Spiritualist Society, not as a fortune-teller, Ashley argued that she provided mere “advice,” not prophecy, and that her advice came as a result of communing with the dead.⁸²

In this particular case, the recipient of Ashley’s advice was undercover police officer Margaret Seller. On March 8, 1917, Seller rang Ashley’s bell, sat across the table from her, and asked whether she would find a job and a husband. Seller’s and Ashley’s testimonies differ regarding the vagueness of Ashley’s answers. Seller recalled that Ashley told her, ““The spirit of your mother comes to me and says that you are to do as you are prompted yourself. . . . Yes, you will get the position and you will marry the man and you will have a small family of two or three children.”” In Ashley’s recounting, her answers were much more noncommittal: ““Anyone with your ability ought not to be without a position very long. . . . That remains for you to say whether you will [marry] or not. . . . It is always best for people to have a family because they seem to be happier with a family than without it.”” The court called Ashley’s answers (as she remembered them) neither “satisfying” nor “valuable,” expressed skepticism that Seller would have paid a dollar for such vagueness, and ultimately discounted Ashley’s testimony in favor of Seller’s. The court also rejected the argument that the foretellings of a spirit medium were significantly different from the predictions of a fortune-teller.⁸³

During the proceedings, Ashley summoned as a witness Chicagoan Dr. George B. Warne, president of the National Association of Spiritualists. Warne cited the precedent of Old

⁸² *People v. Ashley*, 172 N.Y.S. 282 (N.Y. App. Div., 1918).

⁸³ *Ibid.*

Testament prophecy as a “spiritual gift” and noted that “. . . fortune-telling is the doing of the act so-called for the sake of compensation or gain; in the case of the medium prophesy is done directly under the inspiration of a spirit outside of the individual medium.” However, the court’s opinion, which cited Old Testament denunciations of fortune-telling, associated fortune-tellers with “rogues and mountebanks and generally disreputable members of society to be summarily dealt with for the good of the community.” And it was the “good of the community” that was the impetus for the court’s decision against Ashley. The statute against pretending to tell fortunes, the court noted, was “for the protection of the entire community, the credulous as well as the more seasoned members of the body politic.” Ashley’s appeal to the practicing of religious freedom was outweighed by the court’s prerogative to “prohibit acts and practices which are deemed detrimental to the community.” Ashley’s brand of Spiritualist advice, the court decided, was nothing more than “some old-time wrongdoing or indecency sought to be brought to life again” under the cloak of religious practice.⁸⁴ Cultural anxieties regarding the spiritual fate of soldiers killed in battle fueled a revival of interest in spiritualist practices and the possibility of communing with the dead during World War I, and spiritualism figured prominently in legal debates over fortune-telling in the 1920s.⁸⁵

Fortune-telling practices did not change significantly from the nineteenth century to the twentieth, but ways of thinking about fortune-telling did. The uncertainty surrounding fortune-telling evident in these legal proceedings signaled a discursive disjuncture between two different kinds of prediction: one, the occult prophecy-making of traditional fortune-telling and spiritualism, and the other, the scientific forecasting that had become ubiquitous by the end of the century. Fortune-telling became a problem of modernity, as a legal scholar writing in the

⁸⁴ Ibid.

⁸⁵ Blewett Lee, *The Fortune-Teller*, 9 Virginia L. Rev. 249, 252 (1923).

1920s noted: “Indeed, fortune-tellers seem still to have the whole world for their province, and the laws against them are but the local efforts of modern rationalism against a practice which has been immemorial and universal.”⁸⁶ But as I have illustrated in this chapter, the tools of modern rationalism and occult prediction were hardly mutually exclusive. Fortune-tellers, including astrologists, palmists, and turn-of-the-century practitioners like Mrs. Glyn, sought to legitimize and rationalize their practices as scientific, and as we have seen, spiritualism and science were similarly inextricable in popular, literary, and legal discourses of the late nineteenth and early twentieth centuries. State courts ruling on occult prediction in the early twentieth century ultimately disallowed predictions that made claims to certainty in favor of those predictions that acknowledged their own indeterminacy, thereby reimagining occult prediction as a modern and uncertain practice. What were liabilities of fortune-telling in the nineteenth century—its vagueness, its inaccuracy, its potentially specious nature—became acceptable in the twentieth century. The turn of the century marked a seismic epistemological shift in American culture, as uncertainty was no longer a crisis but an inevitable characteristic of modern life.

⁸⁶ *Ibid.*, 259.

Conclusion: War, Risk, and Insurance

In 1896 insurance executive Darwin P. Kingsley had summoned Edward Bellamy's "specter of Uncertainty" as the villain of his life insurance advertising pamphlet. Kingsley urged his audience to look forward into their own uncertain futures in hopes that they would become convinced of the financial and moral imperative to purchase the life insurance that would insulate their families from an unpredictable economic future. But by World War I, Kingsley's cautionary tale about a "specter of uncertainty" would have amounted to stale advertising copy in some quarters. The war years ushered in new categories of insurance that signaled an increasing rationalization of uncertainty into modern economic life.

The increased demand for and purchasing of weather insurance in the second and third decades of the twentieth century indicates a broader public awareness of the liabilities of weather predictions, both short- and long-term. In 1892 a writer for the *Harrisburg Patriot* joked about the lucrative possibility of "a weather insurance bureau" to aid planners of recreational excursions in both summer and winter.¹ By 1916 weather insurance was no longer a joke but a proposal by the U.S. Office of Farm Management, which advocated a comprehensive insurance mechanism that would effectively redistribute the economic risks that inclement weather posed to farmers.² The press reported widespread interest among non-agricultural interests as well,

¹ "Some enterprising individual," *New York Times*, August 7, 1892.

² Weather insurance was common in Britain before it became well established in the United States. Tornado and hail insurance had been available in the United States since 1861 and 1880, respectively, but they did not gain significant momentum until the second decade of the twentieth century. Frost insurance became available in the U.S. in 1920 after an insurance industry survey revealed significant demand among citrus growers in Florida, California, and Louisiana. G. Wright Hoffman, "Weather Forms of Insurance," *Annals of the American Academy of Political and Social Science* 130 (March 1927): 121-30.

especially regarding rain insurance. In 1921 three companies sold rain insurance, and by 1925, the number had risen tenfold.³

In 1921 the Rogers Peet Company published an advertisement for a raincoat that cited the *Journal of Commerce* as evidence for the new legitimacy of weather insurance, which was “formerly regarded as a rather frivolous form of enterprise, [but] is now taking its place among the older and recognized forms of insurance.”⁴ As the president of the Henry W. Ives Insurance Company observed in 1920, rain insurance—covering society garden parties, baseball games, horse races, boating companies, and Coney Island candy stands—represented ““an entirely new class of risk.””⁵

To mitigate this new class of environmental risk, the Ives Insurance Company sold, beginning in the 1910s, so-called “Pluvius policies” that would protect farmers, builders, sports fans, and outdoor recreation companies from getting financially soaked by an unforeseen and inopportune rainstorm. The “Pluvius policies” were not based on the short-term “Probabilities,” however: customers had to buy policies at least a week before the event they wanted to insure since, as historian Kristine Harper reminds us, “[n]o one could predict the weather a week in advance.”⁶ Companies selling rainfall insurance were essentially betting on the uncertainty of long-range forecasts, confident in their own ability to predict that no weather prophet—federal government forecaster or private citizen—would accurately predict the next week’s weather.

³ William Gardner Reed, “Weather Insurance,” *Monthly Weather Review* 44, no. 10 (October 1916): 575-80; Hoffman, “Weather Forms of Insurance”; “Why Not Insure Crops Against Bad Weather?” *New York Times*, March 25, 1917; “Wide Interest Felt in Rain Insurance,” *New York Times*, May 27, 1920; “Topics of the Times,” *New York Times*, May 28, 1920; “You Can Now Insure Your July 4 Outing,” *New York Times*, June 27, 1920; “Rain Insurance Grows Popular,” *Los Angeles Times*, August 10, 1921; “Weather Insurance Takes Strong Hold,” *New York Times*, August 14, 1921; “New Insurance Covers Weather,” *Atlanta Constitution*, August 18, 1921; “Let it Rain; What of It! I’m Insured, You Know,” *Boston Daily Globe*, September 11, 1921.

⁴ “What better policy than a fair-weather overcoat of rainproofed Scotch Mist!” *New York Times*, January 25, 1921.

⁵ “You Can Now Insure Your July 4 Outing,” *New York Times*, June 17, 1920.

⁶ Harper, *Weather by the Numbers*, 19. As Harper reports, insurance companies used the Weather Bureau’s long-term climatological data to calculate their own risk in issuing rainfall policies a week in advance (19-20).

“The most important risk of the farmer has for its cause the uncertainties of weather and market conditions,” wrote insurance expert G. Wright Hoffman in 1925.⁷ Indeed, the war years saw a flurry of experimentation in crop insurance at the same time that demand for rainfall, tornado, and hail insurance steadily increased. By 1915 farmers were generally well-insured against fire, with almost two thousand farmers’ mutual fire insurance companies carrying policies that totaled over five billion dollars, more than 40 percent of the nation’s farm property value that year.⁸ Hail insurance, available from two mutual insurance company providers in the early 1880s and twenty-eight mutual insurance companies and five joint-stock companies by 1910, became much more prevalent in the 1910s during the so-called “golden age” of American agriculture until its coverage in 1919 totaled an unprecedented half a billion dollars. And in 1917 a few insurance companies introduced blanket coverage for farmers that was not tied to a particular kind of natural hazard but rather sought to mitigate the risk of unpredictable market prices.⁹

At the same time that underwriters began crafting significant numbers of insurance policies designed to protect their bearers from the financial losses brought by rain-soaked sporting events and crop-ruining hailstorms, the federal government’s Bureau of War Risk Insurance instituted an unprecedented system of social welfare designed to protect World War I servicemen who faced unpredictable dangers on the front and the families who coped with the uncertain length of their soldiers’ absence. The Bureau of War Risk Insurance, which had originally been established in 1914 to mitigate shipping losses on Atlantic waters, dramatically expanded its scope in November of 1917, when it began paying “allotments and allowances”

⁷ G. Wright Hoffman, “Crop Insurance—Its Recent Accomplishments and Its Possibilities,” *Annals of the American Academy of Political and Social Science* 117 (January 1925): 95.

⁸ *Ibid.*

⁹ *Ibid.*, 111, 99-102.

benefits to the wives and families of enlisted men, namely a portion of a soldier's pay plus an additional supplement based on family size. In addition to providing these support payments to soldiers and their families, the War Risk Insurance Act also offered servicemen the option of government life and disability insurance.¹⁰ Unlike the beleaguered Civil War pension system, the War Risk Insurance Act would, according to historian K. Walter Hickel, "furnish a predictable degree of protection rather than arbitrary charity, uniform and officially tabulated benefits rather than individual awards of an unpredictable amount."¹¹

Thus by the end of World War I, Americans had an array of new insurance mechanisms with which to insulate themselves from the uncertain winds of weather, agriculture, and war. The early-twentieth-century emergence of weather insurance, crop insurance, and War Risk Insurance marked both a recognition of and an attempt to rationalize the unpredictability and uncertainty of modern life. Taken together, these insurance mechanisms represent a modern acceptance of as well as a response to the "specter of Uncertainty" that had haunted Bellamy, his readers, and scores of prophets in late nineteenth century America.

¹⁰ For an account of the work of the Bureau of War Risk Insurance that attends to the contexts of Progressive Era "maternalist" and "paternalist" social welfare programs as well as to the rise of the modern welfare state, see K. Walter Hickel, "War, Region, and Social Welfare: Federal Aid to Servicemen's Dependents in the South, 1917-1921," *Journal of American History* 87, no. 4 (2001): 1362-91. For contemporary accounts of the Bureau of War Risk Insurance, see Paul H. Douglas, "The War Risk Insurance Act," *Journal of Political Economy* 26, no. 5 (1918): 461-83; Samuel McCune Lindsay, "Purpose and Scope of War Risk Insurance," *Annals of the American Academy of Political and Social Science* 79 (September 1918): 52-68; S. H. Wolfe, "Eight Months of War Risk Insurance Work," *Annals of the American Academy of Political and Social Science* 79 (September 1918): 68-79.

¹¹ K. Walter Hickel, "Entitling Citizens: World War I, Progressivism, and the American Welfare State, 1917-1928" (PhD diss., Columbia University, 1999), 116.

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