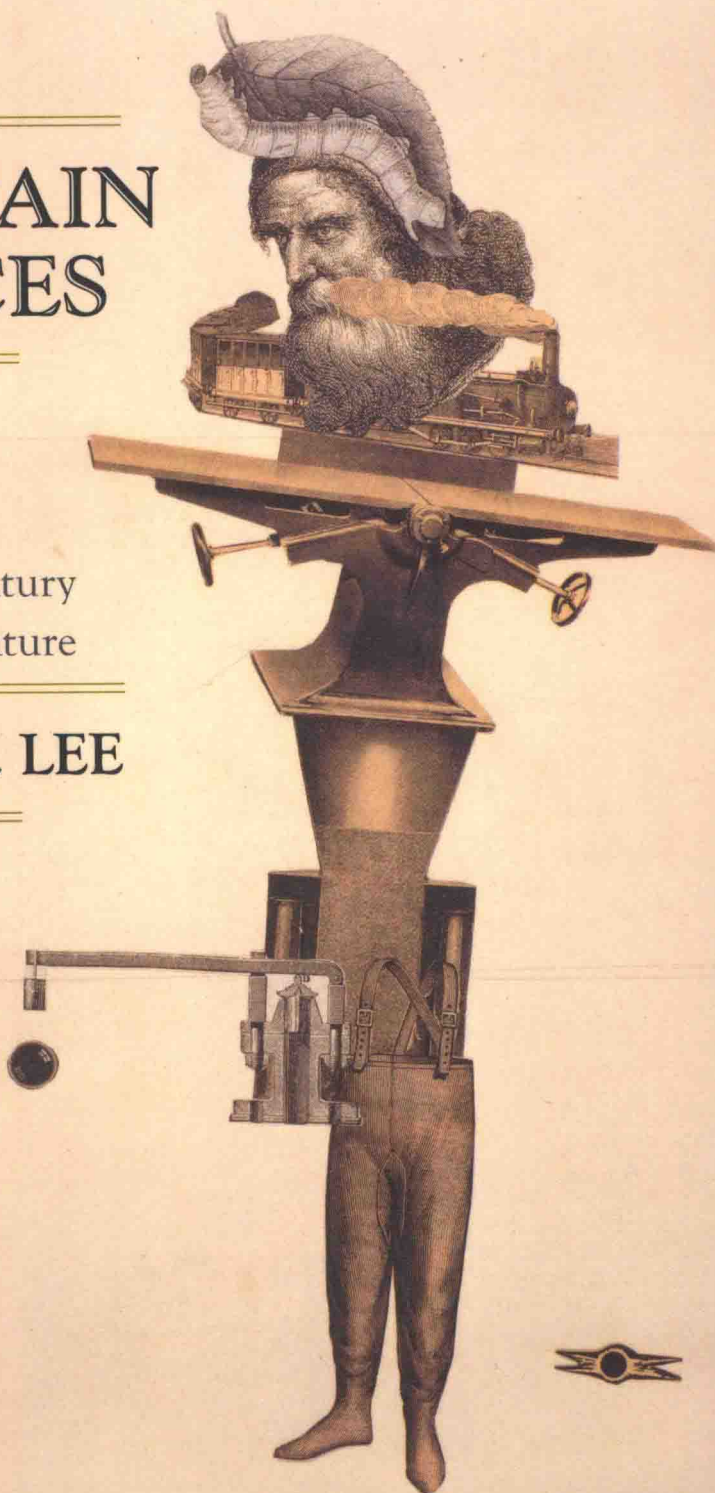

UNCERTAIN CHANCES

Science,
Skepticism,
and Belief in
Nineteenth-Century
American Literature

MAURICE S. LEE



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IN NINETEENTH-CENTURY AMERICAN
LITERATURE

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For Matteo, who loves to climb and jump,
For Nico, who drew dragons on the back of the manuscript,
and
For Marisa, who holds us together

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Uncertain Chances

Introduction

Maybe modernity began in Ellington, Connecticut on July 30, 1804. A minister working on the roof of the town's meetinghouse slipped, fell sixty-eight feet, and survived, in part because he crashed through a plank suspended in the framing and, lower down, landed on a workbench that further broke his fall. He had a nail driven into his skull and crippled a leg for life, and when reflecting on the incident in his memoirs, he praised the "special interposition of a kind Providence." A doubter with a taste for theodicy might wonder why God would allow such an accident in the first place, but for a Calvinist minister (named Diodate Brockway, no less) the invocation of heaven's design was a deeply felt and powerfully conventional response, even as such providential explanation came under increasing duress. Like the minister himself, the *Middlesex Gazette* discerned in the extraordinary fall from the meetinghouse a "preserving providence, superior to any human calculations," and yet an urge to analyze Brockway's salvation—or was it dumb luck?—remained: "Calculating upon the doctrine of chances, his out of any proposed number, appears to be the only favorable one. If we view the hand of Providence, it seems that he was to fall, but yet to be preserved."¹ Much depends upon the word *If*. Perhaps the unnamed author of the article knew of Abraham De Moivre's *Doctrine of Chances* (1717), a pioneering work of probability theory purchased by Thomas Jefferson and Benjamin Franklin and advertised in the early American press. Or maybe the author had heard of the doctrine of chances through its occasional treatment in the period's scientific literature, philosophical works, sermons, and newspaper articles. Whatever the case, the *Middlesex Gazette*'s wavering between providence and probability registers the beginnings of an uneven shift from faith in Christian teleology and confidence in rational certitude toward a more modern, more skeptical worldview in which chance, long dismissed as a nominal concept marking the limits of human knowledge, came to be regarded as an actual force subject to degrees of human control.

To read nineteenth-century American literature with an eye toward chance is to broach some unfamiliar questions that turn out to have broad interpretive use. What exactly does Poe mean in his detective fiction when he refers to the "Calculus of Probabilities"? If *Moby-Dick* (1851) is about free will versus fate,

why does Ishmael identify three principal agents—"chance, free will, and necessity"?² Can Thoreau in his literary and naturalist work simultaneously abandon himself to chance and search for unchanging higher laws? How does Douglass turn his era's probabilistic methods against a burgeoning statistical racism? Can Dickinson in her poetry describe how chance feels when it escapes consciousness, theology, and language? And what might chance mean for other American authors from Edwards, Franklin, and Jefferson, to Hawthorne, Emerson, and James McCune Smith, to Elizabeth Stuart Phelps and Du Bois? Such questions bear on a longstanding interest of literary criticism: How do writers, historically understood, approach problems of skepticism and faith? For scholars who study nineteenth-century America, responses typically involve the decline or displacement of religious authority, the rise of scientific positivism, the advent of post-metaphysical philosophy, and the disenchanting trauma of the Civil War. As a concept that comes to mediate uncertainty and belief, chance relates to all of these major developments, though it also deserves attention in its own right as a vitally destabilizing aspect of modernity's unfinished emergence.

The premise of this book is that nineteenth-century American literature took part in a broad intellectual and cultural shift in which chance became increasingly treated as a challenge to be managed but never mastered. In their dealings with chance, literary figures engage a surprising array of debates—in theology, philosophy, logic, and mathematics, in the natural and social sciences, and in everyday practices such as weather forecasting, insurance, investment, and gaming. Poe, Melville, Douglass, Thoreau, Dickinson, and others join in their era's general rethinking of chance, though their contributions to the discussion are distinctive, not only because they imaginatively pursue moral, political, and psychological lines of inquiry not usually associated with the subject but also because as writers they are uniquely attuned to the aesthetic implications of probability and chance.

By reading their work in relation to the rise of chance and the spread of the probabilistic revolution, this book shows how chance is thematically, formally, and meta-critically significant for American writers during a period when changing attitudes toward chance reconfigure the relationships between science, religion, and literature (especially romanticism). Attention to chance reshapes literary-critical practices, now and in the nineteenth century, for chance entails specific approaches to uncertainty quite different from the radical skepticism usually associated with the romantics and their post-structural heirs, who can dwell on epistemological quandaries of subjectivity and semiotics to a point where indeterminacy threatens to corrode sufficient claims to truth and action. Emphasizing chance also departs from Wittgensteinian engagements with skepticism most forcefully advanced in nineteenth-century American literary studies by the provocations of Stanley Cavell. The following chapters share with Cavell, Charles Altieri, and others

a desire to move beyond Cartesian problematics through literature, but they do so with more commitment to classical skepticism, empiricism, and the philosophy of science than to the shared inheritances of language coming after Kant. Which is to say that the epistemological limits marked by probabilism and chance do not necessarily impel textual interpretation toward the linguistic turns of deconstruction or ordinary language philosophy. As Emerson suggests in “Montaigne, or the Skeptic” (1850) when associating skepticism with causal uncertainty, nineteenth-century authors encountering chance move with varying degrees of confidence, anxiety, and wonder from representation toward agency, from ideation toward experience, and from Cartesian and linguistic conundrums toward more practical—and pragmatist—positions. They may even suggest ways of living and writing under conditions of doubt.

First, some historical contextualization. Most philosophers, mathematicians, physicists, neuroscientists, and biologists treat chance and probability ahistorically, though how humans understand the possibilities of chance is, of course, temporally and culturally shaped. The rise of chance in modern Western thought is less a march than a drift, less an orderly progression of great ideas and events and more a set of loosely related developments based on the idea that the power of chance can be to some extent governed, and even harnessed. As intellectual historians over the last few decades have shown, chance became increasingly visible across the nineteenth century, though critical treatments of the subject began much earlier. Classical philosophers and early modern skeptics saw chance as something more than a privative concept, while Fermat, Huygens, and Pascal in the seventeenth century lay the mathematical groundwork for the probability theorems of the Bernoullis, De Moivre, and Thomas Bayes. As knowledge became defined by its predictive capacity more than its apodictic certainty—and as Baconian empiricism and the “modern fact” led to quantitative conceptualizations of reality—the influence of probabilistic thinking in the seventeenth and eighteenth centuries spread beyond mathematics to natural history, theology, jurisprudence, and emerging social sciences such as political economy and statistical sociology. Prior to 1800, the probabilistic revolution took place primarily in European intellectual circles and specific industries such as annuities and shipping, though rapidly evolving attitudes toward chance soon became transatlantic phenomena.³

A robust body of scholarship in the history of science has traced what Ian Hacking has called the “the taming of chance” through a wide range of disciplines in the nineteenth century. Laplace’s 1814 summa of probability theory, *Philosophical Essay on Probabilities*, inspired mathematicians such as Siméon Denis Poisson, Charles Babbage, Augustus De Morgan, George Boole, and John Venn. These thinkers tended to work on abstract problems involving dice, cards, coins, and bags full of marbles, though of more importance to this

book, they showed how rational laws can be inferred from masses of data and seemingly random variations. The basic idea, sometimes termed “frequentism,” is startlingly obvious today: chancy (or more specifically, stochastic) events regress to a mean when considered in large numbers, even if as a problematic feature of induction margins of error and statistical outliers remain. Probability thus constitutes a limitation of knowledge in general and of inferential reasoning in particular, for if quantitative thinking helps predict outcomes en masse, chance always retains some unsettling sway (a point the twenty-first century has painfully if temporarily relearned with the failures of its risk-management methods).⁴

Progress in nineteenth-century probability theory instigated and ran parallel with advances in a number of other fields—political economy (from Malthus on), quantitative sociology (especially in the work of Adolphe Quetelet), logic (John Herschel and John Stuart Mill), and game theory (Antoine-Augustin Cournot). In the mid-century, James Maxwell along with Ludwig Boltzmann qualified Newtonian mechanics by theorizing the stochastic motion of gas molecules, while Darwin cast doubt on the argument from design by taking the accidents of variation and the chances of natural selection as main mechanisms of the natural world. Later in the century, Francis Galton applied statistical methods to a variety of subjects, most infamously heredity and race; and when Charles Peirce marveled in 1893 that the middle decades of the nineteenth century constituted the most productive fifty years in the history of science, he singled out “[t]he idea that chance begets order” as the era’s fundamental insight. With startling speed, the new sciences of chance pushed a paradigm shift that remains in force today.⁵

For Peirce and others, the rise of probabilism and chance extended beyond the natural and social sciences. Herbert Spencer applied the probabilistic logic of statistics and natural selection to ethics, religion, and political philosophy (as did Mill). Henry Buckle, renowned in the nineteenth century, pursued history as a probabilistic enterprise, as did the less assured Henry Adams. The pragmatists shook metaphysical foundations by admitting chance into their philosophy, while some literary writers had already entertained the radical possibilities of chance, which appeared to take on explanatory force in every aspect of life, even religion. By the middle of the nineteenth century, an 1814 statement from Laplace did not seem so outlandish. “[T]he most important questions of life,” he wrote, “are indeed for the most part only problems of probability,” a claim Peirce sharpened in 1878: “All human affairs rest upon probabilities.”⁶ As thoroughly as Diodate Brockway’s providence, chance can become a totalizing concept, and yet for all their emphatic language and pan-disciplinary ambitions, nineteenth-century theorists of chance practiced relatively modest epistemologies marked by contingency, approximation, fallibilism, pluralism, open-endedness, and the suspension of judgment. What makes the reach of probabilistic explanation so expansive is the looseness of its grasp.

As chance's role grew in the realm of ideas, so too did its cultural work, and not simply because "high" scientific concepts trickled down into popular forums. With the market revolution rolling on in America, and as Jackson Lears has most comprehensively shown, maturing cultural practices increasingly attempted to control and profit from the power of chance. Developments included the expansion of stock markets, the growth of the insurance industry, the spread of numerical literacy and statistical thinking, and the application of probability theory to travel, politics, health, consumerism, and other aspects of daily experience.⁷ From Harriet Martineau to Frances Trollope to Dickens, visitors to the United States commented on the "calculating character" of its people, while Tocqueville wrote of Americans in 1840, "Those who live in the midst of democratic fluctuations have always before their eyes the image of chance." An 1847 article in New York's *Merchants' Magazine and Commercial Review* sounded a similar nationalistic note: "We have in the United States . . . become familiar with the doctrine of probabilities. . . . The calculations of the merchant—the harvest of the planter—the fate of a ship at sea—the very existence of the world for another day, are all but probabilities." Around the same time, London's *Morning Chronicle* emphasized the transatlantic scope of the probabilistic revolution: "It is one of the most remarkable developments of modern civilization that the practical importance of the doctrine of chances has obtained universal recognition."⁸

Such exaggerated claims are partly borne out by examples throughout the century, which suggest how probabilistic thinking spread through myriad channels of experience and print culture. Commentators used probability theory to estimate the likelihood of economic panics, train fatalities, extra-terrestrial life, and the chances of John Adams and Thomas Jefferson both dying on July 4, 1826. (Based on one writer's actuary tables, the odds were 1 to 1,721,473,236, significantly less likely than an 1883 assessment following the assassination of James Garfield that both the president and the vice president of the United States would die in the same month every 840 years).⁹ Other articles referred to the doctrine of chances when offering advice on lotteries, employment, marriage, child rearing, and crime prevention. So strikingly did the probabilistic revolution play out across the nineteenth century that it is tempting to tell a story of some sweep: as Americans and their transatlantic peers managed chance in the course of ordinary life, they encountered a modernity characterized not only by the rising authority of science and market ideology but also by a paradoxical sense of unprecedented control and unavoidable uncertainty, of empowering knowledge and inescapable risk.

And yet the spread of modern approaches to chance is hardly the whole story, for the probabilistic revolution in the United States, as in Europe, did not proceed unchallenged. Observers condemned gambling and financial

speculation as chance upset notions of economic justice grounded in the labor theory of value. Christian writers, especially those drawing on Puritan origins, often called the doctrine of chances “absurd,” equated strong beliefs in “blind chance” with atheism and insanity, and went so far as to condemn insurance as an impious attempt to constrain God’s will. Following Descartes, Locke, and Kant, almost every metaphysician of the nineteenth century denied the actuality of chance, as did moral philosophers and natural scientists working within the dominant paradigm of the argument from design. Though probability theorists insisted that their methods were compatible with the rational government of God, their assurances failed to mollify many critics, if only because the management of chance could not help but acknowledge chance’s wild power to shape individual outcomes. Indeed, objections to chance rose as probabilistic methods were becoming naturalized in many disciplines and social practices, and Peirce was among the first modern thinkers to name chance as a fundamental element of nature (a speculation later corroborated by twentieth-century quantum physics). It is thus possible to find in the rise of chance a cognate version of more familiar falls into modernity: nineteenth-century students of chance, despite their culture’s and their own conservative reservations, unleashed a disruptive force of skepticism that no rearguard action could contain.

The triumph of chance over teleology is a compelling (and teleological) narrative, though for critics of nineteenth-century literature coming belatedly to direct engagements with chance, the impressive work of cultural and intellectual historians should serve more as a guide than as a rule. As a figure of uncertainty, chance by definition is devilishly hard to define, let alone fix within the linear plots preferred by most histories of the subject. Forms of chance are widely accepted today—in quantum physics and evolutionary biology, in risk management and informatics, in postmodernism’s commitment to aleatory disorder and philosophy’s abandonment of metaphysical quests for certainty. Yet for many Americans in the nineteenth century, as well as for plenty of people today, chance remains a nominal concept and its taming a scientific fiction. Everything happens for a reason, one hears, whether that reason is providence or natural law. We only say “chance” when we lack sufficient causal knowledge—when the brain is not wider than the sky, or when we seek to evade the more demanding claims of personal responsibility or God.

Between the true belief and fierce denial of chance is a slippery middle ground that became increasingly contested as the nineteenth century struggled to accommodate new views of chance. For the natural theologian William Paley, chance might cause simple things such as a wart or a pimple but only the omnipotent, omniscient Ruler of a chanceless universe might craft something as complex as the human eye (an argument still maintained today by defenders of intelligent design). For statistical thinkers, chance might govern individual

events such as the flipping of a coin, but in the long run probabilities abide by set averages that in the aggregate function as immutable laws. As suggested by the *Middlesex Gazette*'s account of Diodate Brockway's fall, one can treat both providence and chance as living options, as did Pascal in his notorious wager, or as Marcus Schouler more bitterly suggests in *McTeague* (1899) when he mutters, "God *damn* the luck!"¹⁰ Even nineteenth-century probability experts vacillated between competing models of chance: objective views (actual probabilities in nature) versus subjective ones (expectations under conditions of partial knowledge); descriptions of past events versus predictions of future ones; degrees of belief regarding single outcomes versus the mass logic of frequentism (an approach that eventually came to dominate the field but emerged unevenly over the century). Physicists today still disagree as to the scope of chance's purview, while philosophers argue over the relevance of chance in questions of etiology and moral luck. Controversial and broadly applicable, intensely theorized and yet conceptually elusive, chance—like fate and free will—can be a hypothesis too deeply felt for rational adjudication. It even seems beyond apprehension and expression, as suggested by references to "blind" and "dumb" luck.¹¹

Further complicating matters, chance shares family resemblances with a host of mythic, vernacular, and technical terms: *chaos*, *fortune*, *accident*, *coincidence*, *contingency*, *luck*, *risk*, *randomness*, both *fate* and *free will*, all of which have been historically imbued with diverse connotations. The ancient goddess Fortuna—sometimes blind or blindfolded, sometimes an angel or a prostitute, sometimes winged or Janus-faced—later takes the shape of Lady Credit, Lady Luck, and (as Susan Mizruchi has recently noted) a vaguely foreign, potential terrorist in a Travelers Insurance Company commercial. In medieval times, vertical wheels of fortune implied equal chances for rising and falling, though the odds on the American game show are much happier and, as suggested by the wheel's horizontal position, have more to do with earthly stakes than the status of one's soul. Dice and cards, symbols of sin in the nineteenth century, are now brightly displayed on the packaging of children's games, while financiers, once seen as masters of the universe, suddenly become deer in the headlights of chance before reverting to the populist stereotype of the parasitic market manipulator, a series of transformations dramatized by Howells, Norris, Dreiser, and Conrad.¹²

One might elaborate a spectrum of attitudes toward chance by parsing various theoretical positions, though a trip to Las Vegas or a classroom discussion of why bad things happen to good people more viscerally shows how diverse and vexed our lived relations to the possibilities of chance can be. Probabilistic thinking is probably natural—whether one consciously practices it or not, whether the explanation is natural selection, dopamine, or neuroplasticity. Adults process language and visual data probabilistically, and infants seem to be intuitive statistical thinkers, while even monkeys are good at playing the odds when sweet, sweet juice is at stake.¹³ The management of chance can also

seem like second nature in what Ulrich Beck has called a modern “risk society” in which some citizens, directed by institutional structures, have the ironic good fortune of feeling safe enough to worry about their long-term security.¹⁴ Yet as we check the weather report, glance at the latest poll, weigh the cost benefits of bacon versus bran, and estimate what percentage of our students did their reading given that it’s Friday and Henry James, we should not too easily take for granted that we have a modern relationship with chance, nor should we too comfortably refer to “we” when generalizing about attitudes toward it. As the historian of science Lorraine Daston has noted, people are everywhere surrounded by intimations of chance and yet there is “nothing self-evident” about it.¹⁵

It is not simply that probabilistic reasoning is an unevenly distributed skill, or that risk, socially managed and privatized, affects disparate groups disproportionately. Nor is it only that some historical periods and ideologies take chance more seriously than others. What seems to me most intriguing—and less accessible to large-scale historical and sociological studies—is that compartments toward the possibilities of chance vary wildly *within* individuals. An otherwise calculating politician takes a ridiculous extra-marital risk. An investor attributes failure to luck and success to God or merit (or less commonly, *visa versa*). A person does not know what to think or how to feel when told that a cancer has an 80 percent chance of remission. A professor studies chance for years and still wonders how much he believes in it, finally learning to bracket the question of chance’s ontology and ask instead how literary figures, their cultures, and readers embedded within their own historical moments try to make sense of the ambiguities of chance. How we experience the potential meanings of chance is personal, contextual, conflicted, and purposive, and it touches us in profound and quotidian ways. If the rational handling of chance is a sign of modernity, then we have never been consistently modern—just ask a behavioral economist dismantling *Homo economicus* or refer to neuroscience’s estimations of the irrational human brain. Or, as the following chapters will argue while trying to restrain disciplinary self-righteousness, consult some nineteenth-century American literature that explores early and as deeply as any other body of work what it means to live with the limits of reason under conditions of aleatory uncertainty. The role of chance did change across the nineteenth century, and its engendering of intellectual and cultural controversies made it particularly animating for literary writers compelled by the psychological, moral, political, religious, and aesthetic consequences of chance. Historians have described the probabilistic revolution, and scientists are exploring how humans process chance, though such work is only the beginning of some stories, not a few of which are literary ones.

Though Dupin solves the case, “The Purloined Letter” (1844) famously ends with uncertainty: the contents of the missive are never revealed (pointing

some critics toward the unending referentiality of signs), and Dupin's specific motives remain a mystery (what happens in Vienna stays in Vienna). Poe's story dramatizes epistemological limits while suggesting how the rise of chance might bear on the reading of literature. In Poe's detective fiction, Dupin refers to the "theory of probabilities," the "doctrine of chance," and the "Calculus of Probabilities," which he describes as the "most rigidly exact in science applied to . . . the most intangible in speculation."¹⁶ Poe had access to new discourses of chance through many channels, intellectual and popular; and it may matter that a study repeatedly cited by probability theorists of the period demonstrated that the number of dead letters in the Paris post office was so remarkably consistent from year to year as to be predicted *en masse*, results more or less duplicated by similar studies in London and Washington, D.C. For all its skepticism, "The Purloined Letter" shows that uncertainty understood in aleatory terms can be, to some extent, rationally governed. Inquiry is a game of odds in the story; knowledge is partial but sufficient; Dupin is revealed as both a mathematician and a poet whose probabilistic methods reflect, direct, and exploit the reader's own probabilistic expectations. The management of chance in "The Purloined Letter" is simultaneously a topic and a meta-critical commentary, for if Dupin is a kind of literary critic and the missing letter is a text, then Poe implies that the interpretation of literature involves encounters with chance.

Poe thus hints at a fresh approach to a set of enduring scholarly concerns. Readers of nineteenth-century American literature have long recognized crises of skepticism and belief tracked along multiple axes. Quarrels with an overbearing Calvinist God, the higher criticism's attempts to verify the Bible, the antinomian potential of individualistic faith, the rise of scientific authority in an age of advancing, though by no means dominant, materialism and secularism—all presented challenges to Christian orthodoxies that registered in the literature of the time. Philosophical conundrums also drive nineteenth-century literary skepticism. The psychological and supernatural possibilities of the Gothic undermine enlightenment reason, as do the unbounded subjectivism of romanticism, the affective instabilities of sentimentality, and the epistemological and moral quandaries that roil the literature of slavery and race. Cultural pluralism as experienced in the nineteenth century, as well as the ever-accelerating pace of economic and technological change, further unsettles foundational assumptions, including principles of essential value and teleological progress. Attention to the probabilistic revolution extends, reorients, and departs from these more or less familiar critical narratives as chance comes to mediate both science and skepticism, both faith and unbelief—positions that are typically set in opposition but are surprisingly subtended by the rise of chance.

Literary studies of chance and related concepts have appeared irregularly over the last several decades, making the growing subfield, if one can call it

that, more of an archipelago of interests than a centralized area of inquiry. Critics working outside of American literature have pointed in productive directions—Douglas Patey on the rise of probabilism in Augustan aesthetics; Ross Hamilton on accidents replacing essence at the center of modernity; Michael Witmore, Thomas Kavanagh, and Leland Monk on the conjunction of chance and narrative in (respectively) Elizabethan, eighteenth-century French, and modern British literatures. The general consensus is that chance resists integration into totalizing systems of knowledge and judgment and that by dramatizing the play between chance and order, writers meditate on epistemological problems, the navigation of aleatory experience, the role of chance in social practices, and the operations of literature itself. Historical specificity matters in all of these concerns, but while chance has occasioned books in other periods and remains a familiar presence in postmodernism, it has for the most part been only tangentially treated in nineteenth-century literary studies, despite the fact that the rise of frequentism and spread of probabilistic practices made chance a provocative topic as writers and readers faced a newly quantified world to which they were not habituated.¹⁷ Walter Benn Michaels, Wai Chee Dimock, Brook Thomas, and Mizruchi have touched locally on chance in nineteenth-century American literature, while subsequent scholarship with more sustained focus includes Nan Goodman's book on liability law, Eric Wertheimer's deconstruction-inflected work on insurance, and Jason Puskar's forthcoming book on accidents and insurance in the late nineteenth and early twentieth centuries. Such valuable literary criticism tends to center on the postbellum period and socioeconomic formulations of accidents, leaving largely unexplored two lines of inquiry that the following chapters take up.¹⁸

The first involves the wealth of intellectual contexts implicated in the probabilistic revolution, for while Poe, Melville, Douglass, Thoreau, and Dickinson address chance in social and economic registers, they most strenuously ask how chance alters the dynamics among science, skepticism, and faith, a pursuit that takes them across the Atlantic and into extended intellectual histories, even while retaining more immediate connections to nineteenth-century American life. In today's compartmentalized intellectual culture, one does not expect to find sermons dwelling on probabilism or scientists ruminating on mysteries of fate, nor do studies of aesthetics take much interest in, say, statistics and numerical literacy. Neuroscience and evolutionary theory can reach toward questions of beauty and God, but the authors treated in this book discuss such concerns with reference to their era's own scientific idioms, work that can seem prophetically interdisciplinary but is better regarded as pre-disciplinary, insofar as probabilism in the nineteenth century spanned intellectual estates only beginning to be subdivided.

A second main contribution of this book is the reclamation of chance's rise before the Civil War. For Andrew Delbanco, James Dawes, Louis Menand,