

*The Autobiography of
Benjamin Franklin*

Penn Reading Project Edition

BENJAMIN FRANKLIN

Edited by Peter Conn

Preface by Amy Gutmann

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Benjamin Franklin and the American Enlightenment

RICHARD R. BEEMAN

America's revolutionary leaders, though wary of excessive personal ambition, were nevertheless acutely conscious of their claim to fame with posterity. What they sought had little in common with celebrity, the fame we associate with Britney Spears, Posh Spice, or Donald Trump; indeed, it was nearly its antithesis. The pursuit of fame, in the eighteenth-century meaning of that word, had a dynamic quality, encouraging one to make history, to leave the mark of one's deeds and ideals on the world. And unlike the momentary glories of celebrity, fame, as historian Douglass Adair has noted, was thought to be "more public, more inclusive, looking to the largest human audience, horizontally in space and vertically in time."

As things turned out, many of America's revolutionary leaders achieved their goal: they have been elevated to a stature, at least within America, that transcends the individual details of their day-to-day lives as mere mortals and have been made to serve as models of virtue and correct behavior for subsequent generations of Americans. The primary exemplar has of course been George Washington; raised to the stature of a deity in the American consciousness even before his death, as the nineteenth century progressed, he was elevated even higher. Whether in the schoolbook homilies of Parson Weems or the hagiographic biography penned by Chief Justice John Marshall in 1832, Washington emerged in the American consciousness as larger than life, a figure, in English historian Marcus Cunliffe's words, "entombed in his own myth, a metaphorical Washington monument."

Thomas Jefferson, though his claim to enduring fame took longer to establish, is now presented to us in almost equally imposing fashion. If Washington is the American "Cincinnatus"—the heroic citizen who trades the plowshare for the sword when liberty is threatened—then Jefferson has become the philosopher statesman, the intellectual leader of

the revolutionary experiment. Though in recent years there has been more emphasis on some of Jefferson's more obviously human qualities—the speculations, now perhaps confirmed by DNA evidence, about his relationship with his mulatto slave Sally Hemings being the most obvious example—it is the force of his intellect that causes him to endure in the public mind.

Benjamin Franklin, no less than Washington and Jefferson, was consistently preoccupied with posterity's views of his life and accomplishments. As early as 1728, when he was just beginning his career as a printer, he took advantage of his skill in his trade to compose one of America's most famous epitaphs:

The body of
B. Franklin,
Printer:
Like the cover of an old Book,
Its Contents torn out,
And stript of its Lettering and Gilding,
Lies here, Food for Worms,
But the Work shall not be wholly lost:
For it will, as he believ'd, appear once more,
Corrected and amended
By the Author.

The job of revising and amending the plan of his life would be a constant one for Franklin. In his multiple roles as printer, politician, scientific investigator, humorist, and, most self-consciously, autobiographer, Franklin would work all his life to ensure that his fame would be lasting. Unlike those of his contemporaries Washington and Jefferson, however, Franklin's public image—in the eighteenth century as well as the twenty-first—is neither austere nor forbidding. Indeed, the historical Franklin seems not only more accessible to posterity but also more affable. This accessibility and affability—in part the consequence of a sense of humor that Jefferson, in particular, lacked—have ensured Franklin's popularity with subsequent generations of Americans, while, in a peculiar way, detracting from his fame. There are, after all, imposing monuments in the nation's capital to Washington and Jefferson—a towering 555-foot obelisk somehow representative of Washington's forceful but impersonal presence in our historical consciousness and a miniature replica of the Pantheon in Rome symbolizing Jefferson's dual role as republican citizen and philosopher—but none to Franklin. Rather than appearing heroic, Franklin has tended to be presented as *one of us*—the embodiment of many of our aspirations and our failings as Americans.

Our best-known images of Franklin reinforce our sense of both his character and that of the young American society in which he was raised. Indeed, Franklin's life story is often presented as nearly a surrogate for the history of America in the age in which he lived. Few stories are better known, or better told, than Franklin's own account of his initial arrival in Philadelphia at the age of seventeen. "I was dirty from my journey; my pockets were stuff'd out with shirts and stockings, and I knew no soul nor where to look for lodging. I was fatigued with travelling, rowing, and want of rest, I was very hungry; and my whole stock of cash consisted of a Dutch dollar, and about a shilling in copper." Armed with that meager store of personal possessions, he purchased "three great puffy rolls," which he carried with him as he made his entry into the city whose social, political, and intellectual life he would do so much to transform over the next three-quarters of a century.

That account of humble beginnings—truthfully, but self-consciously constructed by Franklin nearly fifty years later when he began work on his *Autobiography*—has been accepted as the tale of America's first Horatio Alger. It is one in which, far from hiding his humble beginnings, the author boasts about them in order to demonstrate that industry, independence, and innovativeness are far more important indicators of self-worth than inherited wealth or hereditary privilege. Those are of course precisely the values that have been most championed as distinctly "American" from Franklin's time down to the present, and even if America's promise of prosperity and success for the industrious has not always been fulfilled in reality, it has nevertheless exerted a powerful hold on the imagination of millions of Americans and prospective immigrants.

Some of our most enduring images of Franklin come from his activities in the field of natural science, yet even these have tended to move toward caricature. The best known comes from his famous kite-flying experiments, which garnered for him an international reputation as the man capable of making "the very heavens obey him." The scholarly literature on Franklin's contributions to our understanding of both the scientific properties and practical uses of electricity does, in fact, confirm his claim to lasting importance in the history of science, but the popular image is far more simplistic—a kind of cross between Rube Goldberg and Mr. Wizard, tinkering in his homemade laboratory and succeeding in spite of his ignorance of European principles of science. His accomplishments in these areas have been depicted as of a peculiarly "American" variety. Daniel Boorstin, for example, has commented: "on rare occasion, an American could discover something, even in physics, simply because he was less learned than his European colleagues." According to Boorstin, it was Franklin's and by implication,

America's naïveté that permitted him to cut through the clutter of past hypotheses to obtain genuinely fresh insights.

Franklin's own ability to identify himself with a set of values and aspirations that were quintessentially "American" has not been an unmixed blessing with respect to posterity's view of him. While many have lauded him as a shining exemplar of the virtues of American capitalism, others are less complimentary. Perhaps the most oft-quoted disparagement of Franklin came from the pen of D. H. Lawrence. Reacting to what he believed to be the self-righteousness underlying many of Franklin's moralisms in the *Poor Richard's Almanac* series, Lawrence complained that "Franklin made a list of virtues, which he trotted inside like a grey nag in a paddock. . . . I do not like him." Even Franklin's remarkable accomplishments as a civic leader in Philadelphia have not escaped criticism. The literary critic Charles Angoff, assessing Franklin's activities as Philadelphia's leading citizen, described him as a "cheap and shabby soul. . . . He represented the least praiseworthy qualities of the inhabitants of the New World: miserliness, fanatical practicality, and lack of interest in what are usually known as spiritual things. Babbitry was not a new thing in America, but he made a religion of it, and by his tremendous success with it he grafted it upon the American people so securely that the national genius is still suffering from it."

Whether we accept the assessment of Boorstin or of Lawrence and Angoff, we are left with a set of caricatures. In either case, Franklin's very accessibility—his standing as a "typical American"—has tended to reduce his stature.

In turning Franklin into a caricature, we obscure the substance of his contributions to what historians have termed "the Age of Enlightenment," which was in reality not so much an "age" as an "impulse," fueled by a heightened sense of optimism about the ability of men and women to use their rational powers not only to understand the laws of the universe but also to devise means to use those laws for the betterment of humanity.

Franklin's contributions to Enlightenment thought far transcended the boundaries of his own country: his reputation as a scientist and a philosopher was, deservedly, an international one. Yet we must not, in our urge to free Franklin from the baggage associated with his image as "typical American," divorce him entirely from his American upbringing and experience. Despite the fact that he spent nearly twenty-seven years of his life outside the boundaries of North America, his temperament and habit of mind were shaped in countless ways by the American natural landscape and social structure. The extraordinary novelty and variety in that landscape would give to Franklin, in common with many other American Enlightenment figures, a sharpened sense of empirical ob-

servation and induction. The more open-ended social structure of eighteenth-century America encouraged in Franklin an optimism about humanly created institutions—be they legislatures or fire companies or colleges—that citizens of European societies, more heavily encumbered by tradition, would have found difficult to share. Perhaps more important, Franklin's own life experiences and accomplishments would serve as models—as he wished them to do—for countless Americans both in his age and in subsequent generations.

Freedom of Reason

PAUL GUYER

Benjamin Franklin experienced irrational domination at an early age. With his formal education over by the age of ten and indentured at twelve to his older brother James to learn the trade of a printer, he later notes with remarkable calm that "I fancy his harsh and tyrannical treatment of me might be a means of impressing me with that aversion to arbitrary power that has stuck to me through my whole life." Many people seem to be able to respond to the early experience of tyranny only by becoming tyrannical to others as soon as they have the power to do so; thus we are now constantly told that the best predictor that people will become child abusers as adults is that they have themselves been abused as children. But Franklin was clearly not like everyone else, and he responded to his domination by his brother with a love of freedom not just for himself but for others as well. He claimed his own freedom at the age of seventeen, of course, by escaping from Boston with the little money he could raise by selling his precious books and undertaking the remarkable journey to Philadelphia that could itself have been a chapter in a contemporary novel like *Moll Flanders* or *Robinson Crusoe*. But that he never thought of claiming freedom just for himself is evident in the *Autobiography* in his occasional remarks about his own apprentices and workers in his printing business, to which, after his further adventure in the trade in London, Philadelphia would prove so receptive. He clearly regarded them not as workers to be exploited for his own profit, but as pupils to be taught a valuable craft and taken in as partners or encouraged to set up on their own as soon as possible. In other words, what he had learned from his treatment at the hands of his brother was not to tyrannize others but to treat them with the respect due to those whose capacity for freedom was equal to his own and the value of whose freedom was equal to own:

Franklin's view about how to treat an apprentice would be reflected in his mature theory of education, an issue at the heart of the eighteenth-century Enlightenment in which he would ultimately play a

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leading role. But long before he proposed the model of education on which our own university was founded, Franklin's early experience led him directly to the most fundamental and indispensable idea of the Enlightenment, namely, that if human beings are to be truly free, then they must be able to see the rules and laws in accordance with which they are to act as the product of their own reason, not as arbitrary impositions of a higher power, whether an older brother, a king, or even a God and Creator. Having described how he managed to set himself up in business by the age of twenty-one, he abruptly says that "Before I enter upon my public appearance in business, it may be well to let you know the then state of my mind with regard to my principles and morals, that you may see how far those influenc'd the future events of my life." He describes how he first rejected the pious Protestantism of his parents for the view of radical "freethinkers" that "virtue and vice were empty distinctions," but then came to see that such a view was "not so clever a performance" as he first thought. He then became convinced that "*truth, sincerity and integrity* in dealings between man and man were of the utmost importance to the felicity of life," and "entertain'd an opinion that, though certain actions might not be bad *because* they were forbidden by [revelation], or good *because* it commanded them, yet probably those actions might be forbidden *because* they were bad for us, or commanded *because* they were beneficial to us, in their own natures, all the circumstances of things considered." "And this persuasion," he continues, "with the kind hand of Providence, or some guardian angel, or accidental favorable circumstances and situations, or all together, preserved me, thro' this dangerous time of youth, and the hazardous situations I was sometimes in among strangers, remote from the eye and advice of my father, without any willful gross immorality or injustice, that might have been expected from my want of religion."

In this remarkable passage, Franklin goes to the heart of the Enlightenment. First, he completely rejects voluntarism, the doctrine that what is right and wrong is simply what a powerful deity wills to be right and wrong, with the concomitant doctrine that we should do what is right and avoid what is wrong in order to earn the favor and avoid the wrath of such a deity. As free agents, we must be able to find the basis of right and wrong in what we ourselves can see to be good or bad for us—we must not merely be free to act in accordance with rules that are imposed upon us, but must be free to see the reason for the rules upon which we are to act. And if we are to believe in any lawgiver other than ourselves, we must see be able to see this authority as willing laws that freely satisfy our own reason, and not have to deform our own freedom and reason in order to accommodate ourselves to his arbitrary laws.

Beyond that, Franklin suggests we might not have to believe in a pow-

erful deity in order to explain our success in conforming our behavior to the freely given laws of our own reason: while he does not commit the Socratic fallacy of thinking that simply to know what is right will guarantee that one will do it, he also insinuates that “accidental favorable circumstances” may be as good an explanation of why anyone does what is right, when they do, as the “kind hand of Providence.” And of course Franklin makes it clear here that the essence of morality is simply “*truth, sincerity and integrity* in dealings between man and man,” in other words, that each human being treat all others as equally free and equally valuable as himself or herself.

Of course Franklin did not invent this view entirely by himself. The signature argument, that, even if there is a God, then what is right and wrong is not so simply because he wills it, but rather he wills that we do what is independently and intelligibly right and wrong, had been forcibly stated at the end of the seventeenth century by the brilliant student of John Locke, Anthony Ashley Cooper, the third earl of Shaftesbury, in his *Inquiry concerning Virtue, or Merit*—a work that the precocious Shaftesbury wrote at the age of twenty and that the equally precocious Franklin, in spite of his deprivation of a formal education, had consumed at the age of sixteen. But only someone who had come to love freedom at an even earlier age could have appreciated this revolution in human morality at that age.

Franklin also notes in this passage that he had to develop his principles independently not only of divine revelation but also of the “eye and advice of his father.” He clearly regards this as an “unfavorable circumstance” that he was fortunately able to overcome, not as a positive good; but it is revealing that what he missed was the *advice* of his father, not the *tutelage* or *authority* of a father. This brings me to Franklin’s conception of education, deep below the surface in his *Autobiography* but more evident in his *Proposals Relating to the Education of Youth in Pennsylvania*, the founding document of what we now call the University of Pennsylvania.

The very idea of education is potentially paradoxical for one who values freedom above all, for to educate another literally means to *lead* him or her, but what one who is to be educated to and for freedom must learn is precisely to *lead him- or herself*. How can one person teach another to do *this*? This is the problem that every teacher, whether in primary school or a university, faces every day. Without explicitly formulating this problem, Franklin solves it in the *Proposals* by arguing that the heart of a proper education can only be to help students develop the capacities and skills they need in order to exercise *their own reason freely*, and to provide them with materials on which to test their reason as well as

examples or models but not mechanical rules for the free but successful use of reason.

Franklin emphasizes the first of these points when he writes that "to form their style" students should be "put on writing" what they read "in their own words, telling or writing stories lately read, in their own expressions," and, more important, that students should *discover* the value of good reasoning in the course of vigorous debate, where "they will begin to feel the want, and be sensible of the use of *logic*, or the art of reasoning to *discover* truth, and of arguing to *defend* it, and *convince* adversaries." "Public disputes," he continues, "warm the imagination, whet the industry, and strengthen the natural abilities."

Franklin makes the second point when he grants the study of history a central role in his curriculum, for he holds that "the advantages of *liberty*, mischiefs of *licentiousness*, benefits arising from good laws and a due execution of justice, etc.," thus "the first principles of sound *politics*," can "be fix'd in the minds of youth" not by rote or precept but by discussion and debate of the "questions of right and wrong, justice and injustice" that will "naturally arise" from the examination of "*historical* occasions." Thus Franklin's famous recommendation that the students of his academy should "learn those things that are likely to be *most useful* and *most ornamental*" is not merely a recommendation that students learn by doing but a plea that students learn by *doing their own thinking*, using the "best writers" certainly as *materials*, maybe as *models*, but never as arbitrary *rules*. In education as in morality, principles should be freely adopted only as the product of one's own reason, never because of the arbitrary will of another.

A lot to learn from an older brother's beatings—but Franklin's *Autobiography* shows—without Franklin himself saying—that he was a child and then a man with an extraordinary capacity to learn from everything that happened to him and everything that he did. Of course he could give the rest of us no mechanical rule by which to do this, but he certainly gives us an extraordinary model for the use of our own freedom.

An Inclination Joined with an Ability to Serve

MICHAEL ZUCKERMAN

The myths have always threatened to swallow the man. The legends have always bid to absorb the life. But the myths have always been a bit ambiguous, and the legends a little elusive.

In the conventional understanding, Franklin personified the opportunity America afforded people who were not well-born to seek their own aggrandizement. He was the poor boy who made good. And in doing so he embodied the best aspects of America: the chance that the country offered all to get ahead, the individualism at the core of the culture.

There is much to be said for this conventional view. Franklin did take for granted the salience of self-interest among men's and women's motives. He did expect people to act on calculations of private advantage. He did move in milieus of deceit and disappointment, and he did become a connoisseur of conniving. In his memoirs, he presented his youth and young manhood as an insistent saga of sharp practice and chicanery, where wary attentiveness to one's own ends was a necessity. But there are difficulties with this view. Even as Franklin came to a keen appreciation of American egoism and articulated the logic of its eventual ascendancy, he remained convinced that "men are naturally benevolent as well as selfish." His *Autobiography* is in many ways an account of the means by which he cultivated his own benevolence, weaning himself from the gratifications of aggression and the delights of defeating others. As a boy in Boston, he proceeded by "abrupt contradiction and positive argumentation." In his maturity in Philadelphia, he saw that "the chief ends of conversation" were information, pleasure, and persuasion, not the temporary titillation of triumph. He developed a "modest diffidence" that served him better than contentiousness ever had when he "had occasion to inculcate [his] opinions" and promote "measures."

Despite his sporadic assertions of the centrality of selfishness, Franklin hardly ever pursued unalloyed self-interest. Long before Tocqueville set forth the principle of "self-interest rightly understood," Franklin perfected its practice. In all he did, he sought usefulness, and he always held "that nothing was useful which was not honest."

He measured honesty and utility alike by authentic community service, not by self-serving. His profoundest ethical discovery was of the close connection between virtue and happiness. He himself averred the "doctrine" that it was "everyone's interest to be virtuous who wished to be happy," in this world as in the next. He had Poor Richard put it even more pithily: "When you're good to others, you are best to yourself." Though Franklin sometimes conceived self-seeking and his public projects as inseparable, he more often set benevolence before interest and social service before self-advancement. In his daily schedule, he began each day by asking, "What good shall I do this day?" and ended each evening by inquiring, "What good have I done today?" In the creed that he composed, he maintained that "the most acceptable service of God is doing good to man." And in a more acerbic version of the same sentiment, he had Poor Richard observe that "serving God is doing good to man, but praying is thought an easier service, and therefore more generally chosen."

Benevolence was the divine thing, even if the more difficult. Franklin was enough a realist to accept indulgently the ways of ordinary men and women. He was enough a humanitarian to hold himself and his friends to a more strenuous standard.

From his first civic endeavors to his final contributions to the national cause, he sought a virtuous fusion of public and private interests and, when the two could not be joined, presumed the priority of the claims of public life.

Early in his political career, when he floated his *Proposals Relating to the Education of Youth in Pennsylvania*, he treated "true merit" as "the great aim and end of all Learning," and he defined such merit as "an inclination join'd with an ability to serve mankind, one's country, friends and family." He sought to set the college that would become the University of Pennsylvania on a foundation of altruism and concern for the general welfare. He wished to "fix in the Minds" of the school's students "deep impressions of the beauty and usefulness of virtue [and] public spirit." At the end of his life, when he drew upon the experience of a lifetime at the Constitutional Convention, his commitment to the common good had deepened and his aversion to unvarnished self-interest had hardened. He proposed that the officials of the new national government serve without salary, for "the pleasure of doing good and serving their country" and for the respect that would attend their offices. Such gratifications seemed plausible incentives to Franklin, "sufficient motives with some minds to give up a great portion of their time to the public." Mere "pecuniary satisfaction," on the contrary, seemed to him a "mean inducement" that would only lead to corruption.

Franklin lived as he lectured his fellow delegates. So far from epito-

mizing the irrational work ethic at the center of the spirit of capitalism, as Max Weber thought, he quit his business forever at the age of forty-two. So far from laboring incessantly, he gave up his leather apron for a life of "leisure . . . for philosophical studies and amusements" and, soon enough, public service. As he told friends and family alike, he much preferred to "have it said, 'He lived usefully,' than 'He died rich.'"

Even in his prime, he refused easy money that might have been his. When he developed his famous stove, he disdained to patent it or in any other way to profit from it. When he invented his lightning rod and his clockworks, he likewise allowed anyone interested in doing so to manufacture and distribute them. With all his inventions, he held undeviatingly to an abhorrence of monopolistic exploitation of innovations that might better the human condition. As he grew older, he grew even more willing to sacrifice his own purse to the public interest. When he won a princely sum in a lottery to raise money for an association for provincial defense in King George's War, he turned all his winnings over to the associators. When he learned that the governors of Maryland and Virginia would not supply the horses and wagons the western campaign required in the French and Indian War, he secured hundreds of those horses and wagons by pledging £1000 of his own money to their owners and drivers.

As the imperial crisis deepened, he offered his fortune in its entirety to avert the rupture he dreaded. When he heard of the Boston Tea Party, he pledged every penny he was worth to compensate the East India Company for its losses if Parliament would repeal the taxes the colonists resented. And once the die of rebellion was cast, he gave of himself even more utterly. He led the commissioners of the Continental Congress on their expedition to Canada to try to convince the Canadians to join the thirteen colonies in their break with Britain, though it was still winter and he was already several months past his seventieth birthday. He endured all the hardships of the grueling journey that the younger men did—sailing in open boats through the snow and ice, sleeping in the woods, riding over rugged roads, nearing exhaustion, his legs swollen with dropsy—on an errand that availed the commissioners and their cause nothing. Before he left Philadelphia later that year for his mission to France, he lent the Congress several thousand pounds and assured Benjamin Rush that the Revolution could "have [him] for what [it] pleased." Indeed, Franklin gave himself so completely to the public that sophisticated commentators have questioned whether he had any inner existence at all. He engaged endlessly in the arrangement of his public poses, preoccupied with what Erving Goffman once called facework. He sat for more portraits than any other man of his era, and he composed himself differently for almost every one of them. Like

Lord Chesterfield, he conceived the management of masks "both a pleasure and a necessity for the continuance of civil harmony."

He reveled in manipulating those masks, in attempting postures and personae, in creating and recreating himself. Pundits have taken him for an avatar of American individualism, but he individuated himself very little and revealed himself still less. He bent his being to accommodate the claims of others more than to assert himself. His essential Americanness inhered in his mastery of the fronts and façades that in profound ways *are* American culture, not in his quest for self in the sense of authenticity and integrity, a quest that has never held any notable number of Americans. He experimented with everything: with callings and careers, with beliefs and values, with old women and new nations, with words and deeds, with his identity, and indeed with his very name. He was by turns a "Water-American" who would not touch "muddling liquor" and a bon vivant who wrote drinking songs and kept five different kinds of champagne in his wine cellar. He could counsel thrift and frugality, dispensing maxims to the masses about pennies saved and pennies earned, and then succumb to the temptations of "luxury," first with a 23-shilling silver spoon and china bowl, soon enough with "several hundred pounds" worth of plate and porcelain. More than that, he could accustom himself to such amenities of elegance for decades and then all at once in Paris fulfill the French legend of the "good Quaker" by ostentatiously putting on "the plain dress of Friends."

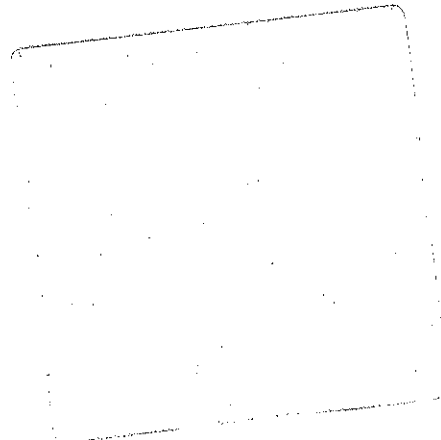
He left the preachments that might have defined a coherent character to Poor Richard, while he himself went his own inconsistent, unworried way. He never found a unifying frame for his career, in his life or in his art. His writings ranged over a dozen genres. His autobiography itself was composed in four disconnected segments addressed to different audiences and ends. He was simply not the same man in 1784 or 1788 or 1789 as he had been in 1771, and the discordances in the form of the separate segments reflected alterations in the substance of his ideas and intentions. He wrote routinely in styles that were not his own and under names that were not his own. As John Updike once said, he was "an inveterate impersonator." His earliest surviving writings were submitted under the pseudonym of Silence Dogood, widow of a country minister. His most widely read works were published under the pseudonym of Richard Saunders, the Poor Richard of the almanacs. Franklin delighted in such simulations of other identities. He wrote so casually and so constantly in such characters that, to this day, scholars still quarrel over the extent of his canon. He wrote so frequently in personae remote from his own that their disputes may never be resolved.

When he was a stripling of sixteen, Franklin wrote as an aging widow. When he was a pillar of his community, he wrote as a disreputable

woman on trial for bearing her fifth illegitimate child. When he was middle-aged, he wrote in the modes of youthful folly and elderly wisdom. When he was an impetuous youth, he wrote of restraint, and when he was (presumably) too old to be in earnest, he wrote of passion. Again and again, he got outside himself. Again and again, he imagined the other. Even when he described his delayed marriage to Deborah Reed, he took her perspective.

His ability to assume roles without being consumed in or by them, to fit his psyche to his circumstances with flair and fine humor, to try the other's point of view and allow the other's ethical authenticity, made Franklin whole in one special sense. They enabled him to connect his convictions about public life with his perspectives on personal relations. They allowed him to integrate his conceptions of political economy with his predilections in private affairs.

His disengagement from immediate personal interests extended the dominion of benevolence beyond the civil sphere into more personal realms. His disavowal of enmeshment in present passions made disinterestedness a central category of his social as well as his political experience. A man who could get inside the skin if not the soul of others was not a man for whom private concerns were pervasive or primary. Franklin has often been taken for a promoter of the self and of selfishness. Nothing could be further from the truth. In actuality, he set civic and public obligations before private entitlements. He understood himself as disinterested and benevolent. This putative paragon of privatism was a thoroughly public man. This alleged archetype of individualism was a person without any evident inner life. Perhaps, like Moses, he pointed to a promised land of private priorities. He never himself entered it. Perhaps, like the prophets of old, he forecast the future. He never himself knew it. And if he had, it would have disheartened him.



The Key to Electricity

MICHAEL WEISBERG

The name "Benjamin Franklin" often evokes the image of an avuncular man flying a kite on a stormy night. It is indeed a striking picture: one of the founders of our country, a successful businessman, a diplomat, and the public face of the American Revolution spending his time contributing to the advancement of science—and putting his life at risk in the process.

Copious mythology surrounds Franklin and his kite experiment. Students are often told that Franklin discovered electricity, or, even more ridiculously, that he invented it. Even a cursory look at the history of science would show that these claims are false, yet Franklin's experiment is justly famous. He did not discover electricity, but he did conclusively show that lightning is an electrical phenomenon. The kite experiment also paved the way for the lightning rod, perhaps his most important invention.

In 1746, Franklin met "a Dr. Spence[r], who was lately arrived [in Boston] from Scotland, and show'd me some electric experiments." Some of Dr. Spencer's experiments would be familiar to students in modern physics courses. Upon rubbing a glass tube with felt, he caused small flakes of brass or gold to jump around or be attracted to the tube. More dramatically, an associate of Franklin describes a boy who "was suspended horizontally and the Dr. rubbed a glass tube, a little distance from his feet, which made sparks of the fire fly from his face and hands." Although Dr. Spencer was not an expert on electricity and his experiments were "very imperfectly perform'd," Franklin's interest was piqued.

Much was known about the behavior of electricity before Franklin encountered Dr. Spencer, so the often-heard claim that Franklin discovered electricity is clearly false. Franklin did perform many electrical experiments and contributed to the growing stock of experimentally derived knowledge about electricity. However, his most important contributions to electrical research lay elsewhere. The first of these contributions was theoretical: the electrical fluid theory.

Franklin posited that an electrical fluid is present in all bodies. This electrical fluid is *subtle*, meaning that it can permeate even the densest of objects. All bodies have a natural quantity of the electrical fluid, but this quantity can be increased or decreased by contact with other electrified bodies or by friction. Franklin used this theory to account for most electrical phenomena, including the most basic electrical properties: attraction and repulsion.

Two charged bodies sometimes exhibit repulsion, moving away from one another when brought together. In Franklin's theory, this is attributed to both bodies possessing excess electrical fluid, or being *positively* charged. When a body possesses excess fluid, the fluid flows around the body's surface and forms what Franklin called an *electrical atmosphere*. The atmospheres of two positively charged bodies repel one another because they cannot occupy the same space.

Franklin's theory also accounted for electrical attraction. In an essay describing his electrical theory, he described matter as "a kind of sponge to the electrical fluid." When a body lacks electrical fluid relative to its normal state, its sponge-like character draws fluid from a positive body.

Although Franklin was justly proud of these and other theoretical explanations of well-known phenomena, he was also interested in more practical matters. Eighteenth-century Philadelphia suffered from frequent fires caused by lightning strikes. The density of buildings increased the probability that lightning would start a fire, and the proximity of the buildings meant that a fire could ravage a whole block. About ten years before Franklin's kite experiment, he had devised a volunteer fire company which ensured that Philadelphia "never lost more than one or two houses at a time" from fire. Lightning-induced fire could be contained, but it could not be prevented. Franklin sought a way to keep lightning from starting fires in the first place.

The first step involved determining what kind of phenomenon lightning actually was. In a notebook entry dated November 7, 1749, Franklin made the following observations:

Electrical fluid agrees with lightning in these particulars: 1. Giving light. 2. Colour of the light. 3. Crooked direction. 4. Swift motion. 5. Being conducted by metals. 6. Crack or noise in exploding. 7. Subsisting in water or ice. 8. Rending bodies it passes through. 9. Destroying animals. 10. Melting metals. 11. Firing inflammable substances. 12. Sulphurous smell.—The electric fluid is attracted by points.—We do not know whether this property is in lightning.—But since they agree in all the particulars wherein we can already compare them, is it not probable they agree likewise in this? Let the experiment be made.

It is clear from this entry that by 1749 Franklin already suspected that lightning was an electrical discharge. However, all he had was an argu-

ment by analogy. He thus implored himself: Let the experiment be made! Lightning needed to be captured in order to analyze its properties.

The first successful attempt to capture lightning took place in France, not Philadelphia, by one of Franklin's European admirers. On May 10, 1752, Thomas-François Dalibard brought a forty-foot pointed bar of iron to a garden in Marly, and "a storm cloud having passed over the place where the bar stood, those that were appointed to observe it, drew near, and attracted from it sparks of fire, perceiving the same kind of commotions as in the common electrical Experiments" (from a letter addressed to Franklin by G. Mazeas, a French correspondent, which Franklin included in his book about electricity).

While we know that the experiment in Marly was performed before Franklin flew his kite, we do not know whether news of it had reached Franklin before he performed his own experiment. Subsequently alluding to the success of the Marly experiment, Franklin told his friend and patron Peter Collinson that "the same experiment has succeeded in *Philadelphia*, although made in a different and more easy manner," and went on to give instructions for repeating his experiment.

Make a small cross of two light strips of cedar, the arms so long as to reach to the four corners of a large thin silk handkerchief when extended; tie the corners of the handkerchief to the extremities of the cross, so you have the body of a kite; which being properly accommodated with a tail, loop, and string, will rise in the air, like those made of paper; but this being of silk is fitter to bear the wet and wind of a thunder-gust without tearing. To the top of the upright stick of the cross is to be fixed a very sharp pointed wire, rising a foot or more above the wood. To the end of the twine, next the hand, is to be tied a silk ribbon, and where the silk and twine join, a key may be fastened.

In his *Autobiography*, Franklin declines to "swell this narrative with an account" of the experiment performed in Marly. He also modestly declines to elaborate on "the infinite pleasure I receiv'd in the success of a similar one I made soon after with a kite at Philadelphia." While Franklin's letter to Collinson recounts the procedure undertaken, it is to Franklin's friend Joseph Priestley we must turn for an account of what actually transpired.

Franklin and his son walked out into an open field with their silk kite, standing just inside a shed for shelter. Franklin allowed the kite to fly through ominous looking clouds, yet nothing happened at first.

At length, just as he was beginning to despair of his contrivance, he observed some loose threads of the hempen string to stand erect, and to avoid one another, just as if they had been suspended on a common conductor. Struck with this promising appearance, he immediately presented his knuckle to the

key, and (let the reader judge of the exquisite pleasure he must have felt at that moment) the discovery was complete. He perceived a very evident electric spark. Others succeeded, even before the string was wet, so as to put the matter past all dispute, and when the rain had wet the string, he collected electric fire very copiously.

Showing that lightning produced an electrical spark and that "electrical fire" could be collected from it was the experimental confirmation of Franklin's hypothesis about lightning. He had shown that, as he suspected, lightning was an electrical discharge. The experiment also suggested how buildings might be protected from lightning-induced fires with the aid of a lightning rod. The rod's construction was described in detail in the 1753 edition of *Poor Richard's Almanac*.

Provide a small iron rod . . . of such a length, that one end being three or four feet in the moist ground, the other may be six or eight feet above the highest part of the building. To the upper end of the rod fasten a foot of brass wire, the size of a common knitting-needle, sharpened to a fine point. . . . A house thus furnished will not be damaged by lightning, it being attracted by the points, and passing thro the metal into the ground without hurting anything.

The use of Franklin's invention quickly spread throughout the colonies. Writing from London twenty years later, Franklin reported that "hitherto there has been no instance of a house so guarded being damaged by lightning; for wherever it has broke over any of them the point has always receiv'd it, and the conductor has convey'd it safely into the earth, of which we have now 5 authentic instances."

Franklin's kite experiment was the culmination, not the beginning, of his research on electricity. It showed that lightning was an electrical phenomenon and suggested how buildings could be protected from it. Franklin's discovery was not just a practical one, as it is sometimes portrayed. Like Newton, Franklin showed how a phenomenon of the heavens behaved exactly as a phenomenon on earth. His demonstration that lightning is electrical gave his theory of electricity tremendous unifying power, helping to lay the foundations of electrical science. This achievement alone would have earned Franklin an illustrious place in the history of science, but this was far from his only scientific contribution. And science was only his part-time occupation, of course, for he was also helping to lay the foundations for a new nation.

A Chronology of Franklin's Life

COMPILED BY MARK FRAZIER LLOYD

- 1706 January 6 (January 17, New Style): BF born in Boston.
- 1714-15 September through May: BF was enrolled in the South Grammar School (now Boston Latin).
- 1715-16 September through May: BF attended George Brownell's English school, which followed a nonclassical curriculum, for his second and final year of formal school.
- 1716 BF became his father's assistant in the tallow-chandlery and soap-boiling business.
- 1718 BF was apprenticed as a printer to his brother James Franklin.
- 1721 August 7: James Franklin began publication of *The New-England Courant*, the first American newspaper to feature humorous essays and other literary content.
- 1722 April 2: The first letter of "Silence Dogood" published in the *Courant*, followed by thirteen others before BF revealed his identity in October of that year.
June 12 through July 7: The Massachusetts legislature imprisoned James Franklin and in his absence BF temporarily edited the *Courant*.
- 1723 January 24 through February 12: BF again temporarily edited the *Courant*.
September 25: At the age of seventeen, BF broke his apprenticeship with his older brother, calling him "harsh and tyrannical," and left Boston.

- October 6: BF arrived in Philadelphia.
 October 1723 through March 1724: BF employed as a printer in the shop of Samuel Keimer.
- 1724 April through June: BF traveled to Boston to ask his father to lend him funds to start a printing business in Philadelphia; his father refused to assist him.
 November 5: With an offer of financial backing from Provincial Pennsylvania Governor Sir William Keith, BF sailed to London to buy type and other printing supplies.
 December 24: BF arrived in London.
- 1725 BF worked in the London printing shops of Samuel Palmer and John Watts.
- 1726 July 21: BF left London for Philadelphia.
 October 11: BF arrived in Philadelphia, found work as a clerk in a dry-goods store, and then returned to the printing shop of Samuel Keimer.
- 1727 January 6: BF turns 21
 Fall: BF founded the Junto club
- 1728 June 1: BF and a fellow Keimer printer, Hugh Meredith, left Keimer's employ and opened their own printing and stationery shop.
- 1729 October 2: BF became the owner, publisher, and editor of the weekly newspaper the *Pennsylvania Gazette*.
- ca. 1729 BF became a father, out of wedlock, of a son, William, who was born of an unidentified mother; the year and date of William's birth are not known.
- 1730 January 30: The Pennsylvania Assembly elected BF and Hugh Meredith official government printers.
 July 14: BF purchased Meredith's share of the business and became sole proprietor.
 September 1: BF married Deborah (Read) Rogers (the legal status of the union is uncertain).
- 1731 July 1: BF authored the "articles of association," appointed the first officers and directors, and founded the Library Company of Philadelphia.

- 1732 October 20: Francis Folger Franklin born to BF and Deborah Read.
 December 28: BF published the first issue of *Poor Richard's Almanac* under the pseudonym "Richard Saunders."
- 1736 October 15: BF appointed clerk of the Pennsylvania Assembly.
 November 21: BF's son, Francis Folger Franklin, died at the age of four.
 December 7: BF organized the Union Fire Company of Philadelphia.
- 1737 October 5: Governor Spotswood of Virginia appointed BF postmaster of Philadelphia.
- 1743 May 14: BF authored and published *A Proposal for Promoting Useful Knowledge Among the British Plantations in America*, the founding document of the American Philosophical Society.
 September 11: Sarah ("Sally") Franklin born to BF and Deborah Read.
- 1747 May 25: A letter of BF to Peter Collinson in England described BF's first experiments with electricity.
 November 17: BF authored and published a pamphlet "Plain Truth," on the need for protecting Philadelphia against the raids of French and Spanish privateers on the Delaware River.
 November 24: BF and others organized a volunteer militia—the Associators—for the defense of Pennsylvania.
- 1748 January 1: BF entered into a partnership with David Hall, permitting to retire from printing. In exchange for the use of the shop and its printing presses, Hall agreed to divide the profits evenly with BF.
 October 4: BF elected to Common Council of the City of Philadelphia. BF acquired the first of several African American slaves he owned.
- 1749 April 29: BF titled a long letter to John Mitchell in England as follows: "Observations and Suppositions towards forming a new Hypothesis for explaining the several Phaenomena of Thunder Gusts."

October 23: BF authored and published the pamphlet "Proposals Relating to the Education of Youth in Pennsylvania."

November 14: BF and others organized the "Academy of Philadelphia"; BF elected President of the Academy's Trustees.

- 1750 July 29: In a long letter to Peter Collinson in England, entitled "Opinions and Conjectures," BF proposed lightning rods as a means for protecting buildings from fire.
- 1751 January: With BF in attendance, the Academy of Philadelphia conducted opening exercises and classes began.
 February: BF was successful in winning legislation from the Pennsylvania Assembly that provided for both public and private funding for the first hospital in Pennsylvania.
 April: John Fothergill, M.D., an English physician and scientist, collected, edited, and wrote a preface to BF's writings on electricity, which were published under the title, *Experiments and Observations on Electricity, made at Philadelphia in America*.
 May 9: BF elected a member of the Pennsylvania Assembly (reelected annually until 1764).
 July 26: BF initiated plan to establish first fire insurance company in Philadelphia, the Philadelphia Contributionship, which was formally organized on September 7.
 October 1: BF elected an alderman of the City of Philadelphia.
- 1752 February 6: Pennsylvania Hospital opened at Eighth and Spruce Streets in Philadelphia.
 June: BF experimented with a kite, discovering that lightning is electrical in nature.
- 1753 July 25: Harvard College conferred honorary degree of Master of Arts upon BF for his advances in the theory of electricity.
 August 10: BF appointed joint Deputy Postmaster General of North America.
 September 12: Yale College conferred honorary degree of Master of Arts upon BF for his advances in the theory of electricity.

- September 26 through October 4: BF negotiated treaty with Ohio Indians at Carlisle, Pennsylvania.
November 30: The Royal Society of London conferred upon BF its Copley Medal for advances in the theory of electricity.
- 1754 June through July: BF attended Albany Congress as a representative from Pennsylvania. He proposed a union of the colonies to provide for common defense against the French.
- 1755 May 14: Penn family proprietors of Pennsylvania rechartered the Academy of Philadelphia as the College and Academy of Philadelphia, thereby granting BF's school the right to confer all the degrees of higher education.
November 25-27: BF's militia bill for Pennsylvania adopted by the Assembly.
- 1756 March 9: Pennsylvania Assembly passed BF's bill for providing night watchmen and street lighting for Philadelphia.
April 20: College of William and Mary conferred honorary degree of Master of Arts upon BF for his advances in the theory of electricity.
April 29: The Royal Society of London unanimously elected BF a member for his scientific advances in the theory of electricity.
- 1757 February 3: Pennsylvania Assembly elected BF its agent in presenting its grievances to the Penn family proprietors and the British government.
26 July: BF arrived in London, having written "The Way to Wealth" while at sea.
- 1759 February 12: University of St. Andrews in Scotland conferred honorary Doctor of Laws upon BF in absentia; BF subsequently referred to as "Dr. Franklin."
- 1760 March 6: BF elected chairman of the Associates of Dr. Bray, a philanthropic group that sponsored charity schools for African Americans in Philadelphia, New York, Rhode Island, and Williamsburg, Virginia.

- 1762 April 30: Oxford University conferred honorary Doctor of Civil Law upon BF.
September 9: King George III commissioned son William Franklin royal Governor of New Jersey.
November 1: BF returned to Philadelphia.
- 1763 December 17: BF wrote to Reverend John Waring in London that he had visited a charity school sponsored by Associates of Dr. Bray in Philadelphia and that he had "conceived a higher Opinion of the natural Capacities of the black Race, than I had ever before entertained."
- 1764 November 1: BF left Philadelphia for London, acting again as agent for the Pennsylvania Assembly.
- 1765 February: BF lobbied the British government against the Stamp Act but was ignored.
- 1768 April 11: Georgia Assembly appointed BF its agent in Great Britain.
- 1769 January 2: American Philosophical Society in Philadelphia elected BF President (and reelected him President every year until his death).
November 8: New Jersey House of Representatives appointed BF its agent in Great Britain.
- 1770 October 24: Massachusetts House of Representatives elected BF its agent in Great Britain.
- 1771 August: BF began writing his *Autobiography*.
- 1772 June 20: Having previously freed his slaves, BF first wrote against the institution of slavery in "The Sommersett Case and the Slave Trade."
- 1774 January: News of Boston Tea Party reached London.
January 31: British government removed BF from his position as Deputy Postmaster General in America.
December: BF unsuccessfully negotiated with British government for reconciliation with the American colonies.
- 1775 March 20: BF departed from London.
May 5: BF arrived in Philadelphia.

- May 6: BF elected a delegate to the Second Continental Congress.
August 23: King George III declared that the American colonies were in rebellion.
- 1776** June 1: Continental Congress appointed BF to the committee to draft the Declaration of Independence.
July 2: With the Continental Congress, BF voted to adopt the Declaration of Independence.
September 26: Continental Congress appointed Silas Deane, BF, and Thomas Jefferson to serve as Commissioners to France; Jefferson declined.
October 27 through December 3: BF traveled from Philadelphia to France.
- 1778** February 6: BF, on behalf of the United States of America, signed with France a treaty of "alliance for mutual defense" and a treaty of "amity and commerce."
17 June: France declared war on Great Britain.
- 1783** September 3: John Adams, BF, and John Jay signed the treaty of peace between Great Britain and the United States.
- 1785** July 12 through September 14: BF traveled from France to America by way of England.
October 11: BF elected to a three-year term as a member of the Supreme Executive Council of Pennsylvania; elected President of the Council October 18; reelected President in 1786 and 1787; in that role he was ex officio President of the Board of Trustees of the University of the State of Pennsylvania, but he attended no meetings of its Trustees.
- 1787** April 23: BF elected President of the Pennsylvania Society for Promoting the Abolition of Slavery.
May 28 through September 17: BF served as a delegate to the constitutional convention held in Philadelphia and, at its conclusion, signed the U.S. Constitution.
- 1789** February 12: BF, as President of the Pennsylvania Abolition Society, composed, signed, and submitted the first petition against slavery to appear before the U.S. Congress.
March 9: College of Philadelphia reestablished; Trustees

met in Franklin's house; Franklin elected President; all subsequent meetings of the Trustees held in Franklin's house until August of that year.

1790

March 23: BF published his famous parody of the defense of slavery, "God is great, and Mahomet is his prophet." In it he told the story of "a purist [Muslim] sect, asking for an end of the practice of capturing and enslaving European Christians to work in Algiers."

April 17: BF died and was buried in Christ Church burial ground, Fifth and Arch Streets, Philadelphia.

Contributors

RICHARD R. BEEMAN is Professor of History at the University of Pennsylvania. He is coeditor of *Beyond Confederation: The Origins of the American Constitution and National Identity* and author of *The Varieties of Political Experience in Eighteenth-Century America*, also published by the University of Pennsylvania Press.

PETER CONN is Andrea Mitchell Term Professor of English at the University of Pennsylvania. His publications include *The Divided Mind: Ideology and Imagination in America, 1898–1917*, *Literature in America*, and *Pearl S. Buck: A Cultural Biography*, which was chosen as a *New York Times* Notable Book, was included among the five finalists for the National Book Critics Circle award in biography, and received the Athenaeum Award.

NATHAN G. GOODMAN is the author of *Benjamin Rush, Physician and Citizen, 1746–1813*, and editor of *The Ingenious Dr. Franklin: Selected Scientific Letters of Benjamin Franklin*, both published by the University of Pennsylvania Press.

AMY GUTMANN is President of the University of Pennsylvania. Her most recent books are *Identity in Democracy, Why Deliberative Democracy?* with Dennis Thompson, and *Color Conscious: The Political Morality of Race*, with Anthony Appiah, which won the Ralph J. Bunche Award of the American Political Science Association, the North American Society for Social Philosophy Book Award, and the Gustavus Myers Human Rights Award.

PAUL GUYER is Florence R. C. Murray Professor in Humanities at the University of Pennsylvania. Among his many books is, most recently, *Values of Beauty: Historical Essays in Aesthetics*. He is the general coeditor of the Cambridge Edition of the Works of Immanuel Kant and coeditor of the book series *The Evolution of Modern Philosophy*.

MARK FRAZIER LLOYD is Director of the University Archives and Records Center and a member of the adjunct faculty in the Department

of History at the University of Pennsylvania. He coedited, with Richard S. Dunn, *A Pennsylvania Album: Undergraduate Essays on the 250th Anniversary of the University of Pennsylvania* and compiled and edited *Timeline of Women Pioneers and Women's Achievements at the University of Pennsylvania*.

MICHAEL WEISBERG teaches philosophy at the University of Pennsylvania. Essays of his have appeared in such journals as *Philosophy of Science*, *Studies in the History and Philosophy of Science*, and *Boston Studies in the Philosophy of Science*.

MICHAEL ZUCKERMAN is Professor of History at the University of Pennsylvania. He is the author of *Peaceable Kingdoms: New England Towns in the Eighteenth Century* and coeditor with Willem Koops of *Beyond the Century of the Child: Cultural History and Developmental Psychology*, also available from the University of Pennsylvania Press.