To refer to The Enlightenment, complained the eminent historian of the eighteenth century, J. G. A. Pocock, was to presume inaccurately that one could refer to "a single unitary process, displaying a uniform set of characteristics." Many scholars of the post-Peter Gay world of Enlightenment studies share this grievance, and, at variance to Gay who considered "the Enlightenment" as a fundamentally unified movement involved in the "business of criticism," have preferred to see "Enlightenment" as a dynamic and differentiated "long-eighteenth century" mainly (but not exclusively) European movement. Depending on the historian's preference, "Enlightenment" becomes a period, a process, and/or a product. This article briefly considers how "Enlightenment" has been recently and predominantly defined in each of these frameworks.

Previous conceptions of the Enlightenment have undergone major transformations as a result of the new angles from which historians view the past. At issue is not only the scope of where Enlightenment was considered to have taken place, but accounts of how and through whose contributions as well. Rather than seeing the pursuits of select individuals, for example the editors of the Encyclopédie—Denis Diderot or Jean Le Rond d'Alembert—as emblematic of the quest for Enlightenment in a society that worshiped the sovereignty of reason over biblical revelation, recent scholarship has gone much further in altering the canon of central contributors to Enlightenment pursuits. Eighteenth-century gender studies, for example, has refashioned the image of Claudine-Alexandrine Guérin de Tencin as a matron of the Enlightenment, not because she was d'Alembert's mother, but rather because she was bearer of a civilized state, running a highly respected salon on rue Saint-Honoré in Paris and acting as mentor to future salonnières, such as Marie-Thérèse Geoffrin. Madame de Tencin's abandonment of her child, the rejection of the duties of maternity for which she has been so well known, raises uncomfortable questions regarding the Enlightenment's attempt to reconcile the language of individual rights and autonomy with consistent attempts to con-

fine women in domestic settings and reinforce their role as mothers—as, for example, prescribed by Jean-Jacques Rousseau in Emile. As an intellectually independent writer and salonnieré, Tencin represented a challenge to social values that subsequent thinkers would use as a model to help forge a feminist philosophy. Here late-twentieth-century scholarship has not only illuminated the often contradictory Enlightenment debates about gender, but also the ways that new areas of knowledge were developed that expanded the opportunities for a wider band of people to participate in the pursuits.

But "Enlightenment," as a process with which—many believe—we are still engaged in the twenty-first century, is also a pursuit filled with irony and paradox. The psychology of the pursuit—the analysis of what many previous historians preferred to call the "Mind of the Enlightenment"—is complex. This is because Enlightenment thinkers—both men and women—seized upon and then struggled to come to grips with a deep transformation in what were taken as fundamental beliefs and true knowledge about their world. One goal of any history of the Enlightenment—whether the historiography of the 1930s or 1940s, which played on the Enlightenment's intellectual values, or later scholarship which stressed the mechanisms of enlightened practices—has been the attempt to capture some of the wonder and the reflexive pride that enlightened individuals felt when assessing the philosophical and material changes visibly occurring throughout Europe.

Everything was changing, and it seemed—many believed—to be changing for the better. In 1759 a forty-one-year-old d'Alembert leaned back and thought about his times. Putting pen to paper, he wrote his reflections at the beginning of his Elements of Philosophy:

If one examines carefully the mid-point of the century in which we live, the events which excite us or at any rate occupy our minds, our customs, our achievements, and even our diversions, it is difficult not to see that in some respects a very remarkable change in our ideas
is taking place, a change whose rapidity seems to promise an even greater transformation to come.

He thought the changes amounted to nothing short than a revolution: "all fields of knowledge have assumed new forms." What was the root of such changes? New developments in natural science which ushered in "a new method of philosophizing," prompting "the kind of enthusiasm which accompanies discoveries, a certain exaltation of ideas which the spectacle of the universe produces in us." What were the consequences? D'Alembert could only wonder, but it was clear that "this general effervescence of minds" would "cast new light on some matters and new shadows on others." Knowledge was shining bright in what his contemporaries were styling the first century of Enlightenment.

What were all these revolutionary changes in knowledge and methods of philosophizing that so impressed d'Alembert? The answer harks back to the activities of some of d'Alembert's intellectual ancestors, whose work in natural philosophy and experimental science culminated in the scientific revolution and helped establish new conceptions of cosmological structure, to readjust (or revolutionize) the foundations of knowledge, and to set the pace for how Enlightened pursuits (with emphasis on empiricism, experimentation, and secular rationalization) began to reshape modern beliefs about the natural world, human nature, and social organization.

**CELEBRATING THE "NEW SCIENCE"**

The theories, mathematical proofs, and writings of people such as the Polish astronomer (and church administrator) Nicolaus Copernicus (1473–1543), the Danish nobleman and astronomer Tycho Brahe (1546–1601), Galileo Galilei (1564–1642), and Isaac Newton (1642–1727), to name only a select few, were crucial in constructing a new method of establishing facts about nature. Advocates of the "new science" (from the Latin *scientia*, meaning knowledge) emphasized that no traditional knowledge was to be
taken for granted. In fact, it was argued that one ought to be downright skeptical of all authority. Rather than rely on what was written in ancient books or what others said about the natural world, the best source of knowledge was to ask nature directly. Personal experience was to be the new arbiter of truth. Why not explore for oneself? Why not rely on one’s own experiences, use one’s own reason? Natural philosophers (as they were then called; the term “scientist” was not coined until the 1830s) were encouraging others to take seriously the plea by the English statesman and philosopher Francis Bacon (1561–1626) to “unroll the volume of the creation” and learn from the Book of Nature by observing and collecting facts from which one could induce greater knowledge and general truths. As a result, all areas of nature were beginning to be scrutinized through critical eyes, and eighteenth-century philosophers portrayed themselves as the inheritors of the radical changes in what were perceived to be the legitimate means of producing “natural” knowledge.

The seventeenth century ended with a crisis of unbelief. Previously, the Bible was read as the ultimate authority on all matters, metaphysical or moral. But it would be misleading to assume that the new sciences simply subverted the authority of the Bible, or that science was suddenly at war with religion. It was not science versus religion, but rather that natural philosophers defended the Book of Nature as an equally legitimate source of knowledge as the Bible. Why not explore all angles? If your beliefs are worth having, aren’t they worth interrogating?

In the ancien régime, social and political organization was modeled on a divine order that enforced a social hierarchy (originally referring to an order of priests; the Greek hieros means sacred and is the root of hieros, priest), and authorities attempted to quiet the voices of the new philosophers because of the challenge they presented to the literal truth of the scriptures. But the debates over who had the legitimate authority to speak on matters of divine order and “truth” (were philosophers seeking a status equal to that of priests?) took place among an educated elite. So what effect did the new philosophy have on the broader public? How did the average individual look upon the new science? Who had the knowledge to understand the debates? After all, the preface to Copernicus’s De revolutionibus declared that mathematics was written for mathematicians, and historians figure that fewer than a hundred contemporaries attempted the whole of Newton’s Principia mathematica, and only a handful could comprehend the mathematics that he used to prove that the earth’s motion could be explained with reference to the same “universal force”—gravity—that moved all other celestial (and terrestrial) bodies.

Here the role of Enlightenment thinkers was particularly effective. The philosophes saw the implications of the new science— its promotion of a new basis of knowledge and its elimination of the traditional hierarchical view of nature—as a platform for revolutionizing the political structures of the ancien régime. The towering genius of Newton was a posthumous construction. He and others such as Copernicus were celebrated not because of what they did, but because of what others thought they did. However few could understand the calculus, hordes could see the implications of having destroyed the distinctions between the terrestrial and heavenly realms.

After his death Newton’s achievements were celebrated as a triumph for enlightened inquiry, and later philosophes made him into one of the first heroes of Enlightenment. The famous philosophe François-Marie Arouet de Voltaire (1694–1778), who visited England from 1726 until 1729 (where he befriended Newton’s niece and even attended his funeral), was one of his most effulgent admirers. He wrote that Newton had taught philosophers to “examine, weigh, calculate and measure, but never to conjecture.” Grounded were the lofty metaphysical theories of the seventeenth century, gone were the dubious tales of saints and miracle workers.

Experiment, observation, and secular reason distinguished an enlightened individual. Newton “saw, and made people see,” continued Voltaire. His penetrating insight rendered visible the previously hidden mysteries of nature. His experiment of directing a beam of sunlight through a prism to show that it was actually comprised of a rainbow of colors has often been used to symbolize the pursuit of enlightenment. The message was articulated in the word chosen for this age: siècle des lumières (French); illuminismo (Italian); Aufklärung (German); Upplysningen (Swedish; lyse means light). Enlightenment signifies the process of coming out from the dark—as in “those times of darkness and ignorance, which we distinguish by the name of the Middle Ages,” according to Voltaire. “We are all [Newton’s] disciples now,” he announced in 1776.

To boldly go . . . Throughout the eighteenth century a growing ensemble of admirers seized upon science as the route to progress and, perhaps, even perfectibility. Unlike Blaise Pascal who became frightened when he contemplated the possibility of an infinite universe, the preeminent German philosopher Immanuel Kant (1724–1804) thought the concept “filled the understanding with wonder.”
Kant was not afraid of the challenges presented by the new philosophy. In fact, he was one of the first to sloganize the achievements of the early natural philosophers by popularizing the phrase “Copernican Revolution,” albeit to imply that his particular philosophy of knowledge was as radically different from others as the heliocentric from the geocentric model of the universe! But his work is also said to have crowned the philosophy of Enlightenment in Germany. He lived his whole life in Königsberg, where he became professor of logic and metaphysics at its university. His chief works questioned the limits of reason in the advancement of human knowledge—the Critiques of pure reason, practical reason, and judgment (published in 1781, 1788, and 1790 respectively). However, it is significant that this leader of the German Enlightenment earlier wrote a work on natural philosophy and the history of the heavens: General Natural History and Theory of the Heavens (1755).

But in terms of defining moments in the history of Enlightenment, it is also significant that in 1784 Kant wrote an essay in answer to the question “What is enlightenment?” that was published in a Berlin monthly, Berlínische Monatsschrift. His answer was that enlightenment was the attainment of the ability to think rationally for oneself: “Enlightenment is man’s release from his self-incurred tutelage. Tutelage is man’s inability to make use of his understanding without direction from another.” Have no fear, he went on, borrowing a phrase from the Latin poet, Horace: “Sapere aude!” Dare to Know! ’Have courage to use your own reason!’—that is the motto of enlightenment.”

However challenging the new philosophy, self-confidence and self-determination would help overcome vanity and foolishness. Kant believed that pursuing Enlightenment was worth the effort since the benefits it brought easily outstripped the perceived dangers. Yes, people would fall a few times before learning to walk alone, but better to do that than to labor in a life of perpetual tutelage. He, like many others, believed that those who learn to think for themselves “will disseminate the spirit of the rational appreciation of both their own worth and every man’s vocation.” But others remained cautious, fearing the power of authorities who ordered, “Do not argue!” Some of Kant’s colleagues lamented the resistance—or the inertia—of the masses to pursue the quest. The Göttingen professor of physics (and seventeenth child of a Protestant pastor) Georg Christoph Lichtenberg (1742–1799) erupted in frustration over humanity’s inability to seize its opportunities. “People talk a great deal about Enlightenment and ask for more light. My God! What good is all this light if people either have no eyes or if those who do have eyes resolutely keep them shut!”

Yet it seemed to others that the greatest irony of enlightenment was that the light it provided illuminated more harsh realities of humanity’s condition than havens of happiness. “Has it not always been obvious that the time of highest refinement is precisely the time of the most extreme moral rottenness?” asked the German poet and sardonic critic Christoph Martin Wieland (1733–1813). Was it not obvious “that the epoch of brightest enlightenment is always the very epoch in which all sorts of speculations, madness, and enthusiasm, flourish most?” Was one really to believe that man’s perfectibility was an attainable goal—the payoff of Enlightenment pursuits? Could one really overthrow one’s inner, savage, corrupting passions? It seemed to Wieland that for every individual who strove to attain enlightened liberty there were many others who were eager to suppress their attempts. “Just think,” he wrote, “against one man who actively advances true enlightenment, there are a hundred who work against it with all their might, and ten thousand who neither desire nor miss his services.”

Indeed one great paradox of the Enlightenment might be that for all the new meanings of liberty and freedom offered, the same period witnessed the rise of new disciplinary controls over the population and new mechanisms of surveillance. Talk about freedom, but play by the rules. Kant saw this irony when he repeated the words of a prince: “Argue as much as you will, and about what you will, but obey!” “Everywhere there is restriction on freedom,” he concluded. And while repression was not as draconian as in the sixteenth or seventeenth centuries, a number of philosophers who voiced their visions of a society liberated from a repressive political regime found themselves meditating over their next messages in prison.

Nevertheless, one of the major achievements of eighteenth-century enlightenment was to spread the word, to popularize the new philosophy through print, in new journals, or the celebrated Encyclopédie (published from 1751) and the British answer to it in the form of the Encyclopaedia Britannica (which began publication in 1771), through new public libraries and salons, and so forth. They were adept at playing up propaganda. Because of this, philosophes have often been regarded as mere spokespeople for the achievements of the seventeenth century, not sophisticated in their own right, and as a result critics regarded them as shallow. To various degrees either image—the hack writer or the high culture savant—can be defended.
The Victory of Truth. Imagination crowns the veiled figure of Truth as Reason, Philosophy, Theology, and the arts, crafts, and sciences pay homage. Frontispiece to the volume of illustrations of the *Encyclopédie*, edited by Denis Diderot and Jean Le Rond d'Alembert and published between 1751 and 1776. Engraving (1764) by Benoît-Louis Prévost after a drawing by Claude-Nicolas Chochin II.
RULING AND ORDERING
NATURE AND SOCIETY

The few regularly cited philosophes, who are often criticized as being mere propagandists, represent a minority of those who contributed to Enlightenment pursuits. The term “philosophes” gained currency because it referred to a specifically French membership (a sort of brotherhood, as Voltaire suggested to d’Alembert), and because, unlike references to university or professionally oriented philosophers, philosophers were amateurs, whose society was formed in salons and who wrote for a nonprofessional public. But in common historical usage the term has come to represent far more than a restricted group of French intellectuals (as the term is often translated). Philosophes are no longer only French. Rousseau proudly declared that he was a citizen of Geneva (this before its upright magistrates condemned his philosophy and burned his books). David Hume and Adam Ferguson were Scottish, Thomas Jefferson and Benjamin Franklin were American, Immanuel Kant and Christian Wolff were German, and the Scandinavians Emanuel Swedenborg and Linnaeus’s pupil Daniel Solander (among many others) helped spread the Enlightenment in the Baltic. Among those in Italy (where, besides gouty tourists, Enlightenment principles were among the rare imports from the north) were Cesare Beccaria, Pietro Verri (editor of II caffè, organ of the Lombard Enlightenment), and the Neapolitan experimenter Maria Angela Ardinghelli.

This, of course, names only a few, and proportionately fewer still were amateur polemists—we find academicians, politicians, and other legal or medical professionals filling in the ranks. Perhaps equally variegated were the philosophers’ commitments to pursue different Enlightenment goals. As Simon Schama has remarked of the reformers in the Dutch Enlightenment, they rejected “a cosmopolitan, Francophone, universally applicable, rationally discerned set of natural laws, in favor of a highly particular, inward-looking, evangelical, proto-romantic cult of the Fatherland.” With regard to the crusade for religious and intellectual toleration, not all European Enlightenment activists rallied around Voltaire’s notorious cry to crush the infamous (écrasez l’infâme). Enlightenment philosophies of toleration emphasized that rational enquiry necessitated freedom of thought and expression, which usually did not mean abolishing God but recognizing that heterogeneous beliefs might legitimately coexist, something that enlightened Europe, largely through the work of its travelers, anthropologists, and orientalists, was forced to come to terms with.

State responses to this varied around Europe. In England the Toleration Act (1689) permitted freedom of worship for Nonconformists, if at the cost of continuing certain civil disabilities. Elsewhere some monarchs such as Frederick II of Prussia (ruled 1740–1786), Catherine II of Russia (ruled 1762–1796), and Joseph II of Austria (ruled 1764–1790) adopted an enlightened philosophy of conceiving of themselves as the servants, rather than the absolute masters, of their states, leading to the paradoxical way these rulers were referred to by nineteenth-century historians as “enlightened despots.” How enlightened and tolerant their rule was in practice is much debated. For example, Charles III of Spain has been described as a minor enlightened despot; nonetheless progressive members of the elite in the Iberian peninsula still faced a tough fight against the Spanish Inquisition.

But a new ruling philosophy was emerging. Social power was increasingly sought by philosophes who seized upon laws of nature as a guide to legitimate governance. One radical philosophy developed was materialism, with John Locke’s theory of thinking matter—the material, “corpuscular,” sensory origin of ideas—proving an influential model for later clandestine writers who appropriated materialistic arguments to support their theories of an immortal and immaterial soul, of free will, and a naturalist philosophy of life. In his Man a Machine (1747), the French military physician Julien de La Mettrie wrote of how human physiology and behavior could be explained solely in terms of the organization of matter and with reference to the mechanical concepts offered in natural philosophy. La Mettrie, who after the publication of Man a Machine settled at the court of Frederick the Great, described the body as a sort of automaton that “winds up its own springs,” which physicians, rather than priests, were capable of repairing.

The influence of this philosophy was not, as some critics have emphasized, a matter of an Enlightenment drive to create a “modern paganism” where the so-called Age of Reason was one sustained attack on religious faith. To be sure, deism and natural theology emerged as mediators which postulated that the more rational nature was seen to be—that is, the more law-bound and organized—the more proof this offered of the wisdom and benevolence of God. More germane, perhaps, to Enlightenment pursuits were the ways in which innovators used the man-machine philosophy as a model for their systems of mechanized labor and manufacture.

Enlightened entrepreneurs. Enlightened entrepreneurs translated the concept that nature was mechanical and could be reduced to laws, its powers im-
Part of the mantra of Enlightenment rationality was the refrain that, like nature which operated under regulated “laws,” the human economy—from labor processes to population health—could be reduced to mechanical operations that were rule-bound and controllable. Once this was accomplished, humanity was well on its way to realizing the Enlightenment goal of rendering laborers’ techniques visible and allowing entrepreneurs and projectors to assess and reproduce them anywhere. In this protoindustrial and capitalist enterprise, a mechanical, visible workforce was the key to social progress. To the philosophers, as Simon Schaffer has suggested, workers themselves figured as individuals who performed like the machines they managed.

Also accomplished would be the associated benefit of replacing a hereditary social hierarchy with a single strata of enlightened individuals who share knowledge of the mechanical principles that govern nature and society. One popular Enlightenment goal was for careers to be open to the talented, with the intent of introducing a professional meritocracy where status was earned rather than inherited, but proponents first needed to establish rules by which merit could be judged. An illuminating example is the way in which the eighteenth-century French artillery
corps—traditionally a second-class branch of the military—obtained new social status when it was recognized that their abilities as technical experts, organized around rigorous discipline and collaboration, could successfully “engineer” the French Revolution. In the Enlightenment, mechanist theories and rule-governed practices were equally as likely to be applied in factories as in prisons, hospitals, or on battlefields.

The links forged during the Enlightenment between manufacturers, entrepreneurs, and natural philosophers became part of the new area where the “business” of Enlightenment expanded, including factories and banks. In addition to the usual locales, such as universities or philosophical academies, late-twentieth-century scholarship has also focused attention on anatomy theaters, various intellectual societies throughout Europe, salons, and even Masonic lodges, whose habitués were allowed to espouse enlightened ideals. All were locales for an effusive Enlightenment rhetoric of liberty, equality, and fraternity. However, the Enlightenment also saw the expansion of areas central to the rapidly expanding and specialized pursuits in natural history—the collection and classification of specimens from the animal, vegetable, and mineral kingdoms.

**Spaces of natural history.** The founding of the British Museum in 1753 came hot on the heels of the opening of the Luxembourg palace in 1750, the first public art gallery in France. But even earlier, the Enlightenment encyclopedic approach to the acquisition and classification of knowledge was manifest in cabinets of curiosities (such as Peter the Great’s in St. Petersburg, which proudly possessed the largest and most famous collection of “monsters”), or the archaeological and artistic collections that generated a thriving commercial economy in Italian cities, where dealers, dilettanti, connoisseurs, aesthetes, and antiquarians busily traded in enlightened taste.

As a descriptive science of forms and categories, natural history complemented mechanical philosophy by merging the living and the nonliving, banishing spirits and metaphysics in favor of empirical methods of classification, often based on external characteristics (such as Linnaeus’s use of the sexual organs of plants to classify groups down to the level of species), with the famous exception of Georges-Louis Leclerc de Buffon (1707–1788), who attempted to classify the whole of the natural world in his massive *Histoire naturelle* (1749–1804) using a uniquely historical approach (evidence from the fossil record, for example) and a theory of reproductive relationships to create a biological classification system. In either case, despite their epistemological differences, recognizing patterns in nature was thought to be the key to understanding not only its operations but its organization, embracing the Enlightenment commitment to render the secrets of nature visible and to display its magisterial order openly to the public.

One Enlightenment pursuit was to set out to catalog nature’s diversity, with its contents named and classified accordingly. When Enlightenment pursuits turned to collecting exemplary specimens, the natural history community was vigorously mobilized. And one view of the “geography” of the Enlightenment appears expansive—Russia recruited naturalists particularly from France, Germany, and the Netherlands to help explore its vast natural resources; the Uppsala Royal Society sponsored various expeditions to the polar regions; and Linnaeus gave his pupils specific instructions for collecting specimens and recording information during their worldwide travels, a procedure later imitated by the president of the Royal Society in London, Sir Joseph Banks, when promoting voyages of exploration. Even if everything collected could not be comfortably classified (in an epoch of standardized descriptions, how does one account for “monsters?”), natural historical knowledge was considered useful because it summed up the Adamic process of establishing order from the confusion of the natural world.

**Popularizing knowledge.** The flip side to collecting and displaying nature’s curiosities in particular places was the spread and distribution of Enlightenment knowledge to more distant parts of Europe. Citizens in the eighteenth-century republic of letters followed new codes of sociability and enjoyed a discursive equality where women who participated in Enlightenment debate were seen as a civilizing force, promoting the philosophy of the Enlightenment in the public sphere. Correspondence linked enlightened communities—Voltaire’s vast network of correspondents, including Catherine the Great (who eventually bought Diderot’s and Voltaire’s book collections, which she added to the imperial library), made his estate at Ferney on the Swiss border a crossroads of enlightened Europe. But for many historians of the Enlightenment, the real achievements in spreading Enlightenment knowledge were linked to the production of inexpensive editions of books. As Robert Darnton has shown, “underground” printers, publishers, and booksellers who peddled the philosophers’ banned books at great risk were crucial to the popularization of Enlightenment ideas.

Above ground, the translation of scientific and medical tracts played a particularly important role in promoting Enlightenment ideas of utility to a wide-
spread public—the immense success of self-help health-care books such as William Buchan's *Domestic Medicine*, first published in London in 1769 but issued in multiple editions and translated into a number of foreign languages, is testimony to the success of this enterprise. The intended audience for such “useful” works and their wide distribution is a measure of the ambitions of the Enlightenment to include previously marginalized social groups in its goals to educate and improve. In Buchan’s case it was the poor, but a similar point has been made about the pedagogic literature written for women, such as the Venetian writer Francesco Algarotti’s *Newtonianism for Ladies* (1737), or by women, such as the Bolognese *filosofesse* and critic of Cartesian thought Laura Bassi or the French translator of Newton, Émilie Du Châtelet.

Enlightenment advocates stressed that science served moral as well as utilitarian ends, which was a message most effectively presented to the public in the form of “popular” writing. But the rhetoric of Enlightenment “public science” was also crucial to establishing the natural philosophers’ social legitimacy by demonstrating that the improvements they were arguing for would serve the interests of the public. Therefore, “science” is often seen as the centerpiece to Enlightenment thought because, when placed alongside a number of other important implications of Enlightenment thought on society, science was considered the embodiment of reason and rationality, it spearheaded the assault on superstition and priestcraft, and it promised human progress and social improvement. These latter utopian dreams were a leitmotiv of the Enlightenment. Acquiring knowledge through enlightened pursuits, some believed, would conquer fear, perfect humanity, and even eliminate death. At least that is what Benjamin Franklin imagined, while lamenting that he was born a century too early to benefit. “It is impossible to imagine the heights to which may be carried in a hundred years, the power of man over matter,” he wrote to the English chemist and Presbyterian minister Joseph Priestley. “All diseases may by sure means be prevented or cured, not excepting even that of old age, and our lives lengthened at pleasure even beyond the antediluvian standard.”

**THE HEALTH OF NATIONS**

Progress was perhaps the key term of Enlightenment thought, the most celebrated, if also the most contentious, term. It embodies the tensions and paradoxes of Enlightenment thought, and an exploration of how the idea of progress was promoted and criticized reveals no consensus among philosophers. However, it does reveal the degree to which Enlightenment philosophers were “conductors” (in both senses) of debate between science and politics.

One point of disagreement among writers was how progress was related to the morally charged optimistic or pessimistic visions of future society. Rousseau wasn’t very optimistic. He argued that the more civilization progressed, the farther humanity was from happiness. The savage, he wrote, “breathes only peace and liberty,” while “civilized man, on the other hand, is always moving, sweating, toiling, and racking his brains to find still more laborious occupations: he goes on in drudgery to his last moment... and, proud of his slavery, he speaks with disdain of those, who have not the honor of sharing it.” This is from his *Discourse on the Origin of Inequality*, which, in various ways, was an evolutionary tract explaining how the natural and social attributes of man affect *perfectibilité*, or the capacity for self-improvement. As was more forcefully stated in his direct attack on the notion of progress in *Discourse on the Arts and Sciences*, this capacity could be misdirected, and lead humanity down the road of self-destruction.

The Enlightenment analysis of “wealth” elaborated on its dangers. European economics, it has been widely noted, are future-oriented, a perspective rooted in Enlightenment theories of progress. In the eighteenth century, European economic thought asserted that the purpose of an economy was to increase national wealth—to “grow.” For the French physiocrats, this meant that economic and political administration should be based on the scientific, secular management of public welfare. They maintained that the distribution of goods and services operated under the same Newtonian “natural laws” as the rest of the universe. For them, wealth was dependent on free trade in agricultural products. Freedom from government interference (laissez-faire economics) would lead to greater profits, which would result in greater agricultural productivity, upon which “the success of all parts of the administration of the kingdom” depended, according to François Quesnay (a French physician and leader of the physiocrats). Anne-Robert-Jacques Turgot, a disciple of Quesnay, used physiocracy to attack mercantilism and its economic isolationism, which, he said, only “nourishes among nations a germ of hatred and wars,” destroying the wealth and happiness of the whole population.

But not all agreed with the physiocrats’ view of economic progress. Some eighteenth-century critics thought that too much wealth was far from “progressive” in the sense of improvement, but instead was a symptom of the “diseases of civilization.” Primitivists
Dinner at Sans Souci. Frederick the Great, king of Prussia (1740–1786) (at the head of the table, center), entertains the writers Voltaire (leaning across the table at left), J.-B. de Boyer, marquis d’Argens (in the foreground, leaning to the right), Francesco Algarotti (leaning forward, third from right), and Julien Offroy de La Mettrie (far right) at the royal palace of Sans Souci at Potsdam, outside Berlin. Voltaire resided at the Prussian court from 1750 to 1755. Painting (1850) by Adolph von Menzel (1815–1905). National Gallery, Berlin/AKG London

such as Rousseau or physicians such as George Cheyne or Thomas Trotter argued that in the early stages of human development, “noble savages” had pursued healthy lifestyles—hunting and gathering, exercising in the open air—which were very different from modern, congested urban squalor. “The strength and vigor of body are found under the coarse homely coverings of the laboring peasant, not under the courtier’s embroidery,” wrote Rousseau.

Even though many eighteenth-century Enlightenment thinkers aspired to write “universal histories” of civilization that emphasized progressive “stages” of social refinement, leading eventually to societies where even luxurious desires are catered to, others perceived in the accumulation of wealth (associated with overindulgence in luxury, idleness, and inequality) a dissolution of morals. In various ways wealth did not lead to health.

Wealth, according to Adam Smith, was not merely the same as money. Wealth required new moral responsibilities. Smith wondered just how far prescriptions for individual responsibility to maintain public health would be implemented, believing that certain refinements of wealthy society made people
less interested in the welfare of strangers. The Enlightenment invention of the social sciences proposed new forms of collective organization to guarantee the health and wealth of populations. Since medical theory saw the health of individuals as bound to environmental concerns, civic environmentalism proved a profitable trade, spawning a host of commercial enterprises addressing problems of drainage, sanitation, and ventilation that were deployed in the eighteenth-century campaign to lessen disease.

In England the Enlightenment pursuit of environmental health was haphazardly implemented through philanthropic programs, while elsewhere in Europe the drive to quantify the size and strength of the state in terms of the health of its citizens was given more—if at the same time uneven—state support, such as through the efforts of the Physici, the state-salaried physicians in Protestant northern Germany. While statistical inquiries into population trends and patterns of epidemic disease were undertaken at least in Italy and Spain since the sixteenth century, the Enlightenment quantifying spirit is best represented in the state census bureaus set up earliest in Sweden (1749) and followed elsewhere, such as with France's bureau of statistical investigation instituted during the Napoleonic era. As Dorothy Porter has pointed out, the Enlightenment pursuit of medical statistics and state accounting used the data it acquired either to prescribe preventative health measures to avoid epidemic disease or to introduce efficient state regulation of medical practice and the standardization of pharmaceutical preparations and sales, depending on which state is being examined.

Attitudes toward progress were often burdened with ambivalent feelings, oscillating between optimism and pessimism, with underlying uncertainties over humanity's new social and moral responsibilities. For every attempt made in the Enlightenment to reduce the natural and social world to a formulaic equation or neatly catalog all knowledge, a catastrophe seemed to threaten the entire enterprise. This led to further anxiety and a paradox of the Enlightenment. If nature was rational and law-bound, then why did earthquakes and floods occur? If government was best placed democratically in the hands of its citizens, then why the Reign of Terror?

Every pigeonholed piece of knowledge seemed to add to a mosaic of larger questions. Was nature really a mechanical entity that could be controlled? Was rationality the best guide to human happiness? Was the emphasis on scientific knowledge and rational pursuits really the key to unbounded progress? What were the limits of humanity's intellectual horizon? What were the limits of enlightenment?

LIMITS OF THE ENLIGHTENMENT

This sketch can only point to a few of the major “long eighteenth-century” trends that characterize Enlightenment pursuits. There have been many attempts to present a working definition of the Enlightenment—from its chronology to its geography as well as its intellectual and material representations. Some believe that the Enlightenment has not ended, that the attitudes of enquiry that probe the potential powers of human achievement, social improvement, and political reform continue to characterize even the early twenty-first century—spreading throughout the world. Other scholars have been far less sanguine in the analysis of the legacy of the Enlightenment. For Theodor Adorno and Max Horkheimer, writing their Dialectic of Enlightenment in wartime exile in New York, Enlightenment worship of reason gave man sovereignty not only over nature but over humanity itself, creating a new totalitarian regime that ultimately led to fascism and new levels of human barbarism. Still others have argued that the Enlightenment ended with the withdrawal of confidence in the authoritarian regime of Napoleon Bonaparte. But late-twentieth-century scholarship also questioned the geographical limits of the Enlightenment.

The Enlightenment was obsessed with geography, at once seeking to identify others who were thought to share Enlightenment values, searching for the boundaries of where rational, enlightened civilization ended and the yet unenlightened, savage world began. But precisely because the Enlightenment concerned itself with its own propagation under the banner of the “civilizing process,” precise boundaries can never be located. However, debates over who best embodied and applied the principles of the Enlightenment to civil duty and social improvement began to refine the general category of “European” to a narrower, national level. The Enlightenment vocabulary that gave birth to “civilization” also invented Eurocentrism, which by the end of the eighteenth century had turned into “enlightened nationalism.” This increasing fragmentation within Enlightenment geography has multiplied the number of sites that must be investigated in local context rather than by presuming a unified “European” Enlightenment, which is reflected in late-twentieth-century scholarship's attempt to analyze the Enlightenment in context and within a comparative framework (as pioneered, for example, by Roy Porter and Mikulás Teich).

Virtually all assessments of the Enlightenment have received their fair share of criticism, mainly because any attempt to delimit or define the results or pursuits of the Enlightenment appear to impose sta-
PURSUING THE MOOD OF THE ENLIGHTENMENT

Here are a few sources that can help capture some of the spirit of the Enlightenment.

**Music**
Franz Joseph Haydn. Quartets
Christoph Willibald Gluck. *Iphigénie en Tauride*

**Museums**
A visit to any museum is worthwhile, as Enlightenment pursuits often ended with the public display of all manner of “curiosities.” For background, read:

**Poetry and Drama**
Robert Marcellus Browning. *German Poetry in the Age of the Enlightenment: From Brockes to Klopstock* (University Park, Pa., 1978)
Denis Diderot. *Le fils naturel* (1757, various editions and translations)
Carlo Goldoni. *Pamela nubile* (1751, a dramatization of Samuel Richardson’s famous novel)

**Fiction**
Jean-Jacques Rousseau. *Émile* (1762, various translations)
Voltaire. *Candide* (1759, various translations)

**Travel Writing**
Voltaire. *Lettres anglaises et philosophiques* (1734, various translations)
Denis Diderot. *Supplément au Voyage de Bougainville* (1772)
Lady Mary Wortley Montagu. *Letters Written during Her Travels in Europe, Asia, and Africa* (1763; reprinted 1790 and in various modern editions)

**Painting**
Johann Georg Sulzer, *Allgemeine Theorie der schönen Künste* (1771–1774), for contemporary art theory and commentary on the German Enlightenment

**Contemporary Reactions**

The Enlightenment and Social History

While scholars most often approach the Enlightenment as a chapter in European intellectual history, there are many important questions to be examined from a social history standpoint. Enlightenment thinkers came from a variety of social backgrounds. They advanced and promoted technology and science, theorized about education and social change, and advocated ideas with great potential social impact. To what extent their ideas actually played a causal role in changing society remains open to debate. How much, for instance, did Enlightenment thinking contribute to the motivations and tactics of the budding entrepreneurs who would soon trigger an industrial revolution? How did Enlightenment thinking affect gender, if thinkers tended to downplay women while at
the same time expounding ideas that could inspire women to demand equal rights?

The links between the Enlightenment and the French Revolution have prompted particularly heated debate among historians. There is no question that Enlightenment ideas challenged the ancien régime and served to guide the revolutionaries. But historiography has shifted repeatedly in evaluating the importance of these ideas; while at one point social tensions—including unrest among peasants and artisans—prevailed over abstract ideas in historical accounts of the Revolution, in the 1990s the balance shifted back toward intellectual developments.

The Enlightenment had an impact on European societies insofar as its ideas were popularized. It was through the sale of books and pamphlets or through coffeehouse and tavern discussions that the thought of Jean-Jacques Rousseau or Immanuel Kant managed to reach a wider public. For the first time in European history, some writers—such as Voltaire—were able to support themselves from the sale of their works. But just how deeply Enlightenment ideas penetrated society and how widely they spread has sparked much debate and inspired much imaginative historical research. The Enlightenment was most effectively popularized in western Europe. Even here, though, its forces faced competition, not only from traditional religions, but also from new faiths like Methodism in Britain and from popular writers who attacked Enlightenment rationalism, emphasizing a new, Romantic cultural approach. Finally, while the Enlightenment was an eighteenth-century movement, its impact continues well into nineteenth-century social history, where it may be traced both in politics and in popular scientific outlook.

See also other articles in this section.

BIBLIOGRAPHY


