

This concept of progress was essentially a creation of the later seventeenth century. Medieval and Reformation thinkers had been concerned primarily with sin and salvation. The humanists of the Renaissance had emphasized worldly matters, but they had looked backward. They had believed it might be possible to equal the magnificent accomplishments of the ancients, but they did not ask for more. Fontenelle and like-minded writers had come to believe that at least in science and mathematics, their era had gone far beyond antiquity. Progress, at least intellectual progress, was very possible.

Fontenelle and other writers of his generation were also instrumental in bringing science into conflict with religion. This was a major innovation because many seventeenth-century scientists, both Catholic and Protestant, believed that their work exalted God. They did not draw antireligious implications from their scientific findings. The greatest scientist of them all, Isaac Newton, was a devout, if unorthodox, Christian who saw all of his studies as directed toward explaining God's message.

Fontenelle, in contrast, was skeptical about absolute truth and cynical about the claims of organized religion. Since such unorthodox views could not be stated openly in an absolute monarchy like Louis XIV's France, Fontenelle made his point through subtle editorializing about science. His depiction of the cautious Copernicus as a self-conscious revolutionary was typical. In *Entilogies of Scientists*, Fontenelle exploited with endless variations the fundamental theme of rational, progressive scientists versus prejudiced, reactionary priests.

The progressive and antireligious implications that writers such as Fontenelle drew from the scientific revolution reflected a very real crisis in European thought at the end of the seventeenth century. This crisis had its roots in several intellectual uncertainties and dissatisfactions, of which the demolition of Aristotelian-medieval science was only one.

A second uncertainty involved the whole question of religious truth. The destructive wars of religion that culminated in the Thirty Years' War (1618-1648) had been fought, in part, because religious freedom was an intolerable idea in Europe in the early seventeenth century. Both Catholics and Protestants had believed that religious truth was absolute and therefore worth fighting and dying for. Most Catholics and Protestants also believed that a strong state required unity in religious faith. Yet the disastrous results of the many attempts to impose such religious unity, such as Louis XIV's brutal expulsion of the French Huguenots in 1685, led some people to ask if ideological conformity in religious matters was really necessary. Others skeptically asked if religious truth

could ever be known with absolute certainty and concluded that it could not.

The most famous of these skeptics was Pierre Bayle (1647-1706), a French Huguenot who despised Louis XIV and found refuge in the Netherlands. A teacher by profession and a crusading journalist by inclination, Bayle took full advantage of the toleration and intellectual freedom of his adopted land. He critically examined the religious beliefs and persecutions of the past in his *Historical and Critical Dictionary*, written in French and published in the Netherlands in 1697. Demonstrating that human beliefs had been extremely varied and very often mistaken, Bayle concluded that nothing can ever be known beyond all doubt. In religion as in philosophy, humanity's best hope was open-minded toleration. Bayle's skepticism was very influential. Reprinted frequently in the Netherlands and in England, his four-volume *Dictionary* was found in more private libraries of eighteenth-century France than any other book.

The rapidly growing travel literature on non-European lands and cultures was a third cause of uncertainty. In the wake of the great discoveries, Europeans were learning that the peoples of China, India, Africa, and the Americas all had their own very different beliefs and customs. Europeans shaved their faces and let their hair grow. Turks shaved their heads and let their beards grow. In Europe a man bowed before a woman to show respect. In Siam a man turned his back on a woman when he met her because it was disrespectful to look directly at her. Countless similar examples discussed in the travel accounts helped change the perspective of educated Europeans. They began to look at truth and morality in relative, rather than absolute, terms. If anything was possible, who could say what was right or wrong?

A fourth cause and manifestation of European intellectual turmoil was John Locke's epoch-making *Essay Concerning Human Understanding*. Published in 1690—the same year Locke published his famous *Second Treatise of Civil Government* (see page 554)—Locke's essay brilliantly set forth a new theory about how human beings learn and form their ideas. In doing so, he rejected the prevailing view of Descartes, who had held that all people are born with certain basic ideas and ways of thinking. Locke insisted that all ideas are derived from experience. The human mind at birth is like a blank tablet, or *tabula rasa*, on which the environment writes the individual's understanding and beliefs. Human development is therefore determined by education and social institutions, for good or for evil. Locke's *Essay Concerning Human Understanding* passed through many editions and translations. It was, along with Newton's *Principia*, one of the dominant intellectual inspirations of the Enlightenment.

### The Philosophes and the Public

By the time Louis XIV died in 1715, many of the ideas that would soon coalesce into the new world-view had been assembled. Yet Christian Europe was still strongly attached to its traditional beliefs, as witnessed by the powerful revival of religious orthodoxy in the first half of the eighteenth century (see pages 681–683). By the outbreak of the American Revolution in 1775, however, a large portion of western Europe's educated elite had embraced many of the new ideas. This acceptance was the work of one of history's most influential groups of intellectuals, the **philosophes**. It was the philosophes who proudly and effectively proclaimed that they, at long last, were bringing the light of knowledge to their ignorant fellow creatures in an Age of Enlightenment.

*Philosophie* is the French word for “philosopher,” and it was in France that the Enlightenment reached its highest development. There were at least three reasons for this. First, French was the international language of the educated classes in the eighteenth century, and the education of the rich and the powerful across Europe often lay in the hands of French tutors espousing Enlightenment ideas. France's cultural leadership was reinforced by the fact that it was still the wealthiest and most populous country in Europe.

Second, after the death of Louis XIV, French absolutism and religious orthodoxy remained strong, but not too strong. Critical books were often banned by the censors, and their authors were sometimes jailed or exiled—but not tortured or burned. Intellectual radicals battled against powerful opposition in France, but they did not face the overwhelming restraints generally found in eastern and east-central Europe.

Third, the French philosophes were indeed philosophers, asking fundamental philosophical questions about the meaning of life, God, human nature, good and evil, and cause and effect. But in the tradition of Bayle and Fontenelle, they were not content with abstract arguments or ivory-tower speculations. They were determined to reach and influence all the French (and European) economic and social elites, many of which were joined together in the eighteenth-century concept of the educated or enlightened public, or simply **the public**.

As a wealth of recent scholarship has shown, the public was quite different from the great majority of the population, which was known as the common people, or simply “the people.” French philosopher Jean le Rond d'Alembert (1717–1783) characteristically made a sharp distinction between “the truly enlightened public” and “the blind and noisy multitude.”<sup>10</sup> A leading scholar has

even concluded that the differences between the upper and comfortable middling groups that made up the French public were “insignificant” in comparison with the great gulf between the public and the common people.<sup>11</sup> Above all, the philosophes believed that the great majority of the common people were doomed to superstition and confusion because they lacked the money and leisure to look beyond their bitter struggle with grinding poverty (see pages 630–633).

Suspicious of the people but intensely committed to reason, reform, and slow, difficult progress, the great philosophes and their imitators were not free to write as they wished, since it was illegal in France to criticize openly either church or state. Their most radical works had to circulate in manuscript form. Knowing that direct attacks would probably be banned or burned, the philosophes wrote novels and plays, histories and philosophies, dictionaries and encyclopedias, all filled with satire and double meanings to spread their message to the public.

One of the greatest philosophes, the baron de Montesquieu (1689–1755), brilliantly pioneered this approach in *The Persian Letters*, an extremely influential social satire published in 1721. Montesquieu's work consisted of amusing letters supposedly written by Persian travelers, who see European customs in unique ways and thereby cleverly criticize existing practices and beliefs.

Having gained fame by using wit as a weapon against cruelty and superstition, Montesquieu settled down on his family estate to study history and politics. His interest was partly personal, for, like many members of the high French nobility, he was dismayed that royal absolutism had triumphed in France under Louis XIV. But Montesquieu was also inspired by the example of the physical sciences, and he set out to apply the critical method to the problem of government in *The Spirit of Laws* (1748). The result was a complex comparative study of republics, monarchies, and despotisms—a great pioneering inquiry in the emerging social sciences.

Showing that forms of government were shaped by history, geography, and customs, Montesquieu focused on the conditions that would promote liberty and prevent tyranny. He argued that despotism could be avoided if there was a separation of powers, with political power divided and shared by a variety of classes and legal estates holding unequal rights and privileges. A strong, independent upper class was especially important, according to Montesquieu, because in order to prevent the abuse of power, “it is necessary that by the arrangement of things, power checks power.” Admitting greedily the English balance of power among the king, the houses of Parliament, and the independent courts, Montesquieu believed that

in France the thirteen high courts—the *parlements*—were frontline defenders of liberty against royal despotism. Apprehensive about the uneducated poor, Montesquieu was clearly no democrat, but his theory of separation of powers had a great impact on France's wealthy, well-educated elite. The constitutions of the young United States in 1789 and of France in 1791 were based in large part on this theory.

The most famous and in many ways most representative philosophe was François Marie Arouet, who was known by the pen name Voltaire (1694–1778). In his long career, this son of a comfortable middle-class family wrote more than seventy witty volumes, hobnobbed with kings and queens, and died a millionaire because of shrewd business speculations. His early career, however, was turbulent. In 1717 Voltaire was imprisoned for eleven months in the Bastille in Paris for insulting the regent of France. In 1726 a barb from his sharp tongue led a great French nobleman to have him beaten and arrested. This experience made a deep impression on Voltaire. All his life he struggled against legal injustice and unequal treatment before the law. Released from prison after promising to leave the country, Voltaire lived in England for three years and came to share Montesquieu's enthusiasm for English institutions.

Returning to France and soon threatened again with prison in Paris, Voltaire had the great fortune of meeting Gabrielle-Emilie Le Tonnelier de Breteuil, marquise du Châtelet (1706–1749), an intellectually gifted woman from the high aristocracy with a passion for science. Inviting Voltaire to live in her country house at Cirey in Lorraine and becoming his long-time companion (under the eyes of her tolerant husband), Madame du Châtelet studied physics and mathematics and published scientific articles and translations.

Perhaps the finest representative of a small number of elite Frenchwomen and their scientific accomplishments during the Enlightenment, Madame du Châtelet suffered nonetheless because of her gender. Excluded on principle from the Royal Academy of Sciences and from stimulating interchange with other scientists because she was a woman, she depended on private tutors for instruction and became uncertain of her ability to make important scientific discoveries. Madame du Châtelet therefore concentrated on spreading the ideas of others, and her translation with an accompanying commentary of Newton's *Principia* into French for the first (and only) time was her greatest work. But she, who had patiently explained Newton's complex mathematical proofs to Europe's foremost philosopher, had no doubt that women's limited scientific contributions in the past were due to



Madame du Châtelet was fascinated by the new world system of Isaac Newton. She helped to spread Newton's ideas in France by translating his *Principia* and by influencing Voltaire, her companion for fifteen years until her death. (*Girardon/Art Resource, NY*)

limited and unequal education. She once wrote that if she were a ruler, “I would reform an abuse which cuts off, so to speak, half the human race. I would make women participate in all the rights of humankind, and above all in those of the intellect.”<sup>12</sup>

While living at Cirey, Voltaire wrote various works praising England and popularizing English scientific progress. Newton, he wrote, was history's greatest man, for he had used his genius for the benefit of humanity. “It is,” wrote Voltaire, “the man who sways our minds by the prevalence of reason and the native force of truth, not they who reduce mankind to a state of slavery by force and downright violence . . . that claims our reverence and admiration.”<sup>13</sup> In the true style of the Enlightenment, Voltaire mixed the glorification of science and reason with an appeal for better individuals and institutions.

Yet like almost all of the philosophes, Voltaire was a reformer, not a revolutionary, in social and political matters.

He was eventually appointed royal historian in 1743, and his *Age of Louis XIV* portrayed Louis as the dignified leader of his age. Voltaire also began a long correspondence with Frederick the Great and, after the death of his beloved Emilie, accepted Frederick's invitation to come brighten up the Prussian court in Berlin. The two men later quarreled, but Voltaire always admired Frederick as a free thinker and an enlightened monarch.

Unlike Montesquieu, Voltaire pessimistically concluded that the best one could hope for in the way of government was a good monarch, since human beings "are very rarely worthy to govern themselves." Nor did he believe in social and economic equality in human affairs. The idea of making servants equal to their masters was "absurd and impossible." The only realizable equality, Voltaire thought, was that "by which the citizen only depends on the laws which protect the freedom of the feeble against the ambitions of the strong."<sup>14</sup>

Voltaire's philosophical and religious positions were much more radical. In the tradition of Bayle, Voltaire's voluminous writings challenged, often indirectly, the Catholic church and Christian theology at almost every point. Though he was considered by many devout Christians to be a shallow blasphemer, Voltaire's religious views were influential and quite typical of the mature Enlightenment. Voltaire clearly believed in God, but his was a distant, deistic God, the great Clockmaker who built an orderly universe and then stepped aside and let it run. Above all, Voltaire and most of the philosophes hated all forms of religious intolerance, which they believed often led to fanaticism and savage, inhuman action. Simple piety and human kindness—as embodied in Christ's great commandments to "love God and your neighbor as yourself"—were religion enough, even Christianity enough, as may be seen in Voltaire's famous essay on religion. (See the feature "Listening to the Past: Voltaire on Religion" on pages 626–627.)

The ultimate strength of the French philosophes lay in their number, dedication, and organization. The philosophes felt keenly that they were engaged in a common undertaking that transcended individuals. Their greatest and most representative intellectual achievement was, quite fittingly, a group effort—the seventeen-volume *Encyclopaedia: The Rational Dictionary of the Sciences, the Arts, and the Crafts*, edited by Denis Diderot (1713–1784) and Jean le Rond d'Alembert. Diderot and d'Alembert made a curious pair. Diderot began his career as a hack writer, first attracting attention with a skeptical tract on religion that was quickly burned by the judges of Paris. D'Alembert was one of Europe's leading scientists and mathematicians, the orphaned and illegitimate son of cel-

ebrated aristocrats. From different circles and with different interests, the two men set out to find coauthors who would examine the rapidly expanding whole of human knowledge. Even more fundamentally, they set out to teach people how to think critically and objectively about all matters. As Diderot said, he wanted the *Encyclopaedia* to "change the general way of thinking."<sup>15</sup>

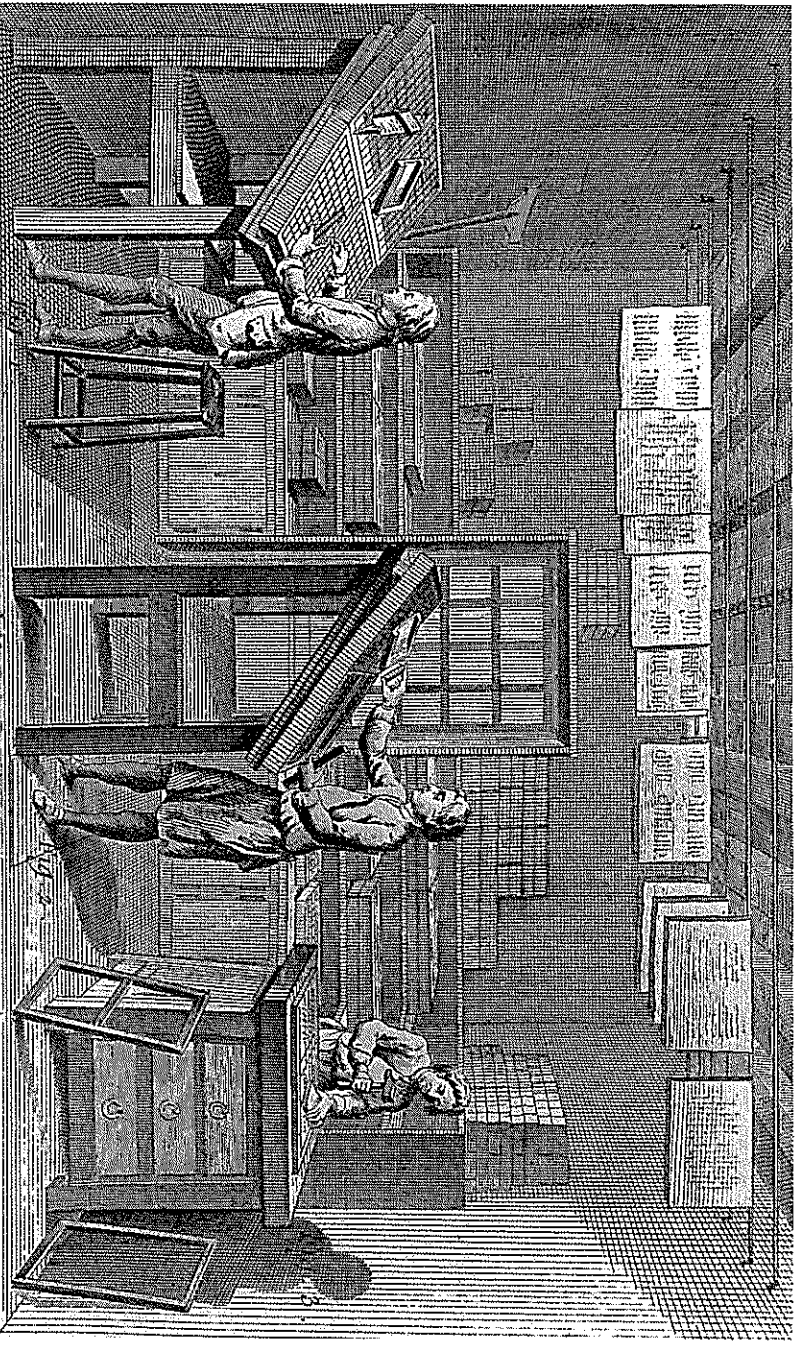
The editors of the *Encyclopaedia* had to conquer innumerable obstacles. After the appearance in 1751 of the first volume, which dealt with such controversial subjects as atheism, the soul, and blind people (all words beginning with *a* in French), the government temporarily banned publication. The pope later placed the work on the Catholic church's index of forbidden works and pronounced excommunication on all who read or bought it. The timid publisher watered down some of the articles in the last ten volumes without the editors' consent in an attempt to appease the authorities. Yet Diderot's unwavering belief in the importance of his mission held the encyclopedists together for fifteen years, and the enormous work was completed in 1765. Hundreds of thousands of articles by leading scientists, famous writers, skilled workers, and progressive priests treated every aspect of life and knowledge.

Not every article was daring or original, but the overall effect was little short of revolutionary. Science and the industrial arts were exalted, religion and immorality questioned. Intolerance, legal injustice, and out-of-date social institutions were openly criticized. More generally, the writers of the *Encyclopaedia* showed that human beings could use the process of reasoning to expand human knowledge. The encyclopedists were convinced that greater knowledge would result in greater human happiness, for knowledge was useful and made possible economic, social, and political progress. The *Encyclopaedia* was widely read, especially in less expensive reprint editions published in Switzerland, and it was extremely influential in France and throughout western Europe as well. It summed up the new world-view of the Enlightenment.

### The Later Enlightenment

After about 1770, the harmonious unity of the philosophes and their thought began to break down. As the new world-view became increasingly accepted by the educated public, some thinkers sought originality by exaggerating certain Enlightenment ideas to the exclusion of others. These latter-day philosophes often built rigid, dogmatic systems.

In his *System of Nature* (1770) and other works, the wealthy German-born but French-educated Baron Paul



Illustrating the *Encyclopédie*: “The Print Shop” Diderot wanted to present all valid knowledge—that is, knowledge based on reason and the senses and not on tradition and authority. This plate, one of 3,000 detailed illustrations accompanying the 70,000 essays in the *Encyclopédie*, shows (from left to right) compositors setting type, arranging lines, and blocking down completed forms. Printed sheets dry above. (Division of Rare & Manuscript Collections, Cornell University Library)

d'Holbach (1723–1789) argued that human beings were machines completely determined by outside forces. Free will, God, and immortality of the soul were foolish myths. D'Holbach's aggressive atheism and determinism, which were coupled with deep hostility toward Christianity and all other religions, dealt the unity of the Enlightenment movement a severe blow. Deists such as Voltaire, who believed in God but not in established churches, were repelled by the inflexible atheism they found in the *System of Nature*. They saw in it the same dogmatic intolerance they had been fighting all their lives.

D'Holbach published his philosophically radical works anonymously in the Netherlands to avoid possible prosecution in France, and in his lifetime he was best known to the public as the generous patron and witty host of writers and intellectuals. At his twice-weekly dinner parties, an inner circle of regulars who knew the baron's secret exchanged ideas with aspiring philosophers and distin-

guished visitors. One of the most important was Scottish philosopher David Hume (1711–1776), whose carefully argued skepticism had a powerful long-term influence.

Building on Locke's teachings on learning, Hume argued that the human mind is really nothing but a bundle of impressions. These impressions originate only in sense experiences and our habits of joining these experiences together. Since our ideas ultimately reflect only our sense experiences, our reason cannot tell us anything about questions that cannot be verified by sense experience (in the form of controlled experiments or mathematics), such as the origin of the universe or the existence of God. Paradoxically, Hume's rationalistic inquiry ended up undermining the Enlightenment's faith in the power of reason.

Another French aristocrat, Marie-Jean Caritat, the marquis de Condorcet (1743–1794), transformed the Enlightenment belief in gradual, hard-won progress into fanciful utopianism. In his *Progress of the Human Mind*,

written in 1793 during the French Revolution (see Chapter 21), Condorcet hypothesized and tracked nine stages of human progress that had already occurred and predicted that the tenth would bring perfection. Ironically, Condorcet wrote this work while fleeing for his life. Caught and condemned by revolutionary extremists, he preferred death by his own hand to the blade of the guillotine.

Other thinkers and writers after about 1770 began to attack the Enlightenment's faith in reason, progress, and moderation. The most famous of these was the Swiss Jean-Jacques Rousseau (1712–1778), a brilliant and difficult thinker, an appealing but neurotic individual. Born into a poor family of watchmakers in Geneva, Rousseau went to Paris and was greatly influenced by Diderot and Voltaire. Always extraordinarily sensitive and suspicious, Rousseau came to believe that his philosophic friends and the women of the Parisian salons were plotting against him. In the mid-1750s, he broke with them personally and intellectually, living thereafter as a lonely outsider with his uneducated common-law wife and going in his own highly original direction.

Like other Enlightenment thinkers, Rousseau was passionately committed to individual freedom. Unlike them, however, he attacked rationalism and civilization as destroying, rather than liberating, the individual. Warm, spontaneous feeling had to complement and correct cold intellect. Moreover, the basic goodness of the individual and the unspoiled child had to be protected from the cruel refinements of civilization. These ideas greatly influenced the early romantic movement (see pages 766–770), which rebelled against the culture of the Enlightenment in the late eighteenth century. They also had a powerful impact on the development of child psychology and modern education.

Rousseau's contribution to political theory in *The Social Contract* (1762) was equally significant. His contribution was based on two fundamental concepts: the general will and popular sovereignty. According to Rousseau, the general will is sacred and absolute, reflecting the common interests of all the people, who have displaced the monarch as the holder of sovereign power. The general will is not necessarily the will of the majority, however. At times the general will may be the authentic, long-term needs of the people as correctly interpreted by a farseeing minority. Little noticed before the French Revolution, Rousseau's concept of the general will appeared greatly to democrats and nationalists after 1789. The concept has also been used since 1789 by many dictators claiming that they, rather than some momentary majority of the voters, represent the general will and thus the true interests of democracy and the sovereign masses.

### Urban Culture and Public Opinion

The writings and press campaigns of the philosophes were part of a profound cultural transformation. The object of impressive ongoing research and scholarly debate in recent years, this transformation had several interrelated aspects.

Of great importance, the European market for books grew dramatically in the eighteenth century. In Germany the number of new titles appearing annually grew substantially and at an accelerating rate, from roughly six hundred new titles in 1700 to about eleven hundred in 1764 and about twenty-six hundred in 1780. Well-studied France, which was indicative of general European trends, witnessed an explosive growth in book consumption. A modest increase in literacy was partly responsible, as the popular classes bought more penny tracts and escapist stories (see pages 669–671). Yet the solid middle class, the clergy, and the aristocracy accounted for most of the change. The number of books in the hands of these privileged groups increased eightfold to tenfold between the 1690s and the 1780s, when the private library of the typical noble contained more than three hundred volumes. Moreover, a much more avid French reader purchased a totally transformed product. The number of religious and devotional books published legally in Paris declined precipitously, from one-half of the total in the 1690s to one-tenth of the total in the 1780s. History and law held constant, while the proportion of legally published books treating the arts and sciences surged.

Even these figures understate the shift in French taste because France's unpredictable but pervasive censorship caused many books to be printed abroad and then smuggled back into the country for "under-the-cloak" sale. Experts believe that perhaps the majority of French books produced between 1750 and 1789 came from publishing companies located outside France. These publishers, located primarily in the Netherlands and Switzerland but also in England and a few small west German principalities, also smuggled forbidden books in French and other languages into the absolutist states of central, southern, and eastern Europe. The recently discovered catalogues of some of these foreign publishers reveal a massive presence of the famous French philosophes, reaffirming the philosophes' central role in the spread of critical secular attitudes.

The illegal book trade in France also featured an astonishing growth of scandalmongering denunciations of high political figures and frankly pornographic works. These literary forms frequently came together in scathing pornographic accounts of the moral and sexual depravity