Chapter 7

The Flowering and Dissolution of Medieval Civilization

- Revival of Learning
- The Medieval World-View
- Philosophy, Science, and Law
- Literature
- Architecture
- The Fourteenth Century: An Age of Adversity
- The Decline of the Papacy
- Breakup of the Thomistic Synthesis
- The Middle Ages and the Modern World: Continuity and Discontinuity

Focus Questions

1. What conditions contributed to the revival of learning during the High Middle Ages?
2. What were scholastic philosophers trying to accomplish?
3. How does the medieval view of the universe differ from the modern view?
4. How did religion pervade much of the medieval philosophy, science, literature, art, and architecture?
5. Why is the fourteenth century described as an age of adversity?
6. What led to the decline of the medieval papacy? What is the historical significance of this development?
Europe in the High Middle Ages showed considerable vitality. The population increased, long-distance trade revived, new towns emerged, states started to take shape, and papal power grew. The culminating expression of this recovery and resurgence was the cultural flowering in philosophy, the visual arts, and literature. Creative intellects achieved on a cultural level what the papacy accomplished on an institutional level: the integration of life around a Christian viewpoint. The High Middle Ages saw the restoration of some of the learning of the ancient world, the rise of universities, the emergence of an original form of architecture (the Gothic), and the erection of an imposing system of thought, called scholasticism. Medieval theologian-philosophers fashioned Christian teachings into an all-embracing philosophy that represented the spiritual essence, the distinctive style of medieval civilization. They perfected what Christian thinkers in the Roman Empire had initiated and what the learned men of the Early Middle Ages had been groping for: a synthesis of Greek philosophy and Christian revelation.
REVIVAL OF LEARNING

In the late eleventh century, Latin Christendom began to experience a cultural revival; all areas of life showed vitality and creativeness. In the twelfth and thirteenth centuries, a rich civilization with a distinctive style united the educated elite in the lands from Britain to Sicily. Gothic cathedrals, an enduring testament to the creativity of the religious impulse, were erected throughout Europe. Universities sprang up in several cities. Roman authors were again read and their style imitated. The quality of written Latin—the language of the church, learning, and education—improved, and secular and religious poetry, both in Latin and in the vernacular, abounded. Roman law emerged anew in Italy, spread to northern Europe, and regained its importance (lost since Roman times) as worthy of study and scholarship. Some key works of ancient Greece were translated into Latin and studied in universities. Employing the rational tradition of Greece, men of genius harmonized Christian doctrines and Greek philosophy.

Several conditions contributed to this cultural explosion, known as the Twelfth-Century Awakening. As attacks of Vikings, Muslims, and Magyars ended and kings and great lords imposed more order and stability, people found greater opportunities for travel and communication. The revival of trade and the growth of towns created a need for literacy and provided the wealth required to support learning. Increasing contact with Islamic and Byzantine cultures in Spain, Sicily, and Italy led to the translation into Latin of ancient Greek works preserved by these Eastern civilizations. By preserving Greek philosophy and science—and by producing creative commentaries on these classical works—Islamic civilization acted as a bridge between antiquity and the cultural revival of the High Middle Ages. The Twelfth-Century Awakening was also prompted by the legacy of the Carolingian Renaissance, whose cultural lights had dimmed but never wholly vanished in the period of disorder after the dissolution of Charlemagne’s empire.

In the Early Middle Ages, the principal educational centers were the monastic schools. During the twelfth century, cathedral schools in towns gained importance. Their teachers, paid a stipend by a local church, taught grammar, rhetoric, and logic. However, the chief expression of expanding intellectual life was the university, a distinct creation of the Middle Ages. The first universities
were not planned but grew spontaneously. They developed as students, eager for knowledge, gathered around prominent teachers. The renewed importance of Roman law for business and politics, for example, drew students to Bologna to study with acknowledged masters.

University students attended lectures, prepared for examinations, and earned degrees. They studied grammar, rhetoric, logic, arithmetic, geometry, astronomy, medicine, music, and, when ready, church law and theology, which was considered the queen of the sciences. The curriculum relied heavily on Latin translations of ancient texts, chiefly the works of Aristotle. Students in mathematics and astronomy read Latin translations of Euclid and Ptolemy, while those in medicine studied the works of two great medical men of the ancient world, Hippocrates and Galen.

Universities performed a crucial function in the Middle Ages. Students learned the habit of reasoned argument. Universities trained professional secretaries and lawyers, who administered the affairs of church, state, and the growing cities. These institutions of learning also produced theologians and philosophers, who shaped the climate of public opinion. Since the curriculum and the texts studied were essentially the same in all lands, the learning disseminated by universities tightened the cultural bonds that united Christian Europe. Medieval universities established in the West a tradition of learning that has never died. There is direct continuity between the universities of our own day and medieval centers of learning.

THE MEDIEVAL WORLD-VIEW

A distinctive world-view, based essentially on Christianity, evolved during the Middle Ages. This outlook differed from both the Greco-Roman and the modern scientific and secular views of the world. In the Christian view, not the individual but the Creator determined what constituted the good life. Thus, reason that was not illuminated by revelation was either wrong or inadequate, for God had revealed the proper rules for the regulation of individual and social life. Ultimately, the good life was not of this world but came from a union with God in a higher world. This Christian belief, as formulated by the church, made life and
dearth purposeful and intelligible; it dominated the thought of the Middle Ages.

The Universe: Higher and Lower Worlds

Medieval thinkers sharply differentiated between spirit and matter, between a realm of grace and an earthly realm, between a higher world of perfection and a lower world of imperfection. Moral values derived from the higher world, which was also the final destination for the faithful. Two sets of laws operated in the medieval universe, one for the heavens and one for the earth. The cosmos was a giant ladder, with God
at the summit; earth, composed of base matter, stood at the bottom, just above hell, where farthest from God dwelled Satan, his evil spirits, and the souls of the damned.

From Aristotle and Ptolemy, medieval thinkers inherited the theory of an earth-centered universe—the geocentric theory—which they imbued with Christian meaning. The geocentric theory held that revolving around the motionless earth at uniform speeds were seven transparent spheres, in which were embedded the seven “planets”—the moon, Mercury, Venus, the sun, Mars, Jupiter, and Saturn. (Because Earth did not move, it was not considered a planet.) A sphere of fixed stars—that is, the stars stayed in a constant relationship to one another—enclosed this planetary system. Above the firmament of the stars were the three heavenly spheres. The outermost, the Empyrean Heaven, was the abode of God and the Elect. Through the sphere below—the Prime Mover—God transmitted motion to the planetary spheres. Beneath this was the lowest sphere, the invisible Crystalline Heaven.

An earth-centered universe accorded with the Christian idea that God had created the universe for men and women and that salvation was the primary aim of life. Because God had created people in his image, they deserved this central position in the universe. Although they might be living at the bottom rung of the cosmic ladder, only they, of all living things, had the capacity to ascend to heaven, the realm of perfection.

Also acceptable to the Christian mentality was the sharp distinction drawn by Aristotle between the world above the moon and the one below it. Aristotle held that terrestrial bodies were made of four elements: earth, water, air, and fire. Celestial bodies, which occupied the region above the moon, were composed of a fifth element, ether—too clear, too pure, and too perfect to be found on earth. The planets and stars existed in a world apart; they were made of the divine ether and followed celestial laws, which did not apply to earthly objects. Whereas earthly bodies underwent change—ice converting to water, a burning log converting to ashes—heavenly objects were incorruptible, immune to all change. Unlike earthly objects, they were indestructible.

Heavenly bodies also followed different laws of motion from earthly objects. Aristotle said that it was natural for celestial bodies to move eternally in uniform circles, such motion being considered a sign of perfection. According to Aristotle, it was also natural for heavy bodies (stone) to fall downward and for light objects (fire, smoke) to move upward toward the celestial world; the falling stone and the rising smoke were finding their natural place in the universe.

The Individual: Sinful but Redeemable

At the center of medieval belief was the idea of a perfect God and a wretched and sinful human being. God, who had conceived and created the universe, had given Adam and Eve freedom to choose; rebellious and presumptuous, they had used their freedom to disobey God. In doing so, they made
evil an intrinsic part of the human personality. But God, who had not stopped loving human beings, showed them the way out of sin. God became man and died so that human beings might be saved. Men and women were weak, egocentric, and sinful. With God’s grace, they could overcome their sinful nature and gain salvation; without grace, they were utterly helpless.

The medieval individual’s understanding of self stemmed from a comprehension of the universe as a hierarchy instituted by and culminating in God. On earth, the basest objects were lifeless stones, devoid of souls. Higher than stones were plants, endowed with a primitive type of soul that allowed reproduction and growth. Still higher were animals, which had the capacity for motion and sensation. The highest of the animals were human beings; unlike other animals, they could grasp some part of universal truth. Far superior to them were the angels, who apprehended God’s truth without difficulty. At the summit of this graduated universe (the Great Chain of Being) was God, who was a pure Being, without limitation, and the source of all existence. God’s revelation reached down to humanity through the hierarchical order. From God, revelation passed to the angels, who were also arranged hierarchically. From the angels, the truth reached men and women; it was grasped first by prophets and apostles and then by the multitudes. Thus, all things in the universe, from God to angels to men and women to the lowest earthly objects, occupied a place peculiar to their nature and were linked by God in a great, unbroken chain.

Medieval individuals derived a sense of security from this hierarchical universe, in which the human position was clearly defined. True, they were sinners who dwelt on a corruptible earth at the bottom of the cosmic hierarchy. But they could ascend to the higher world of perfection above the moon. As children of God, they enjoyed the unique distinction that each human soul was precious; all Christians commanded respect unless they were heretics. (A heretic forfeited dignity and could be justly executed.)

Medieval thinkers also arranged knowledge in a hierarchical order: knowledge of spiritual things surpassed all worldly knowledge, all human sciences. To know what God wanted of the individual was the summit of self-knowledge and permitted entry into heaven. Thus, God was both the source and the end of knowledge. The human capacity to think and to act freely reflected the image of God within each individual; it ennobled men and women and offered them the promise of associating with God in heaven. Human nobility might derive from intelligence and free will, but if individuals used these attributes to disobey God, they brought misery on themselves.

**Philosophy, Science, and Law**

Medieval philosophy, or scholasticism, applied reason to revelation. It explained and clarified Christian teachings by means of concepts and principles of logic derived from Greek philosophy. Scholastics tried to show that the teachings of faith, although not derived from reason, were not contrary to reason, that logic could confirm the truth of church dogma. They tried to prove through reason what they already held to be true through faith. For example, the existence of God and the immortality of the soul, which every Christian accepted as articles of faith, could also, they thought, be demonstrated by reason. In struggling to harmonize faith with reason, medieval thinkers constructed an extraordinary synthesis of Christian revelation and Greek rationalism.

The scholastic masters used reason not to challenge but to serve faith: to elucidate, clarify, and buttress it. They did not break with the central concern of Christianity: earning God’s grace and achieving salvation. Although this goal could be realized solely by faith, scholastic thinkers insisted that a science of nature did not obstruct the pursuit of grace and that philosophy could assist the devout in contemplating God. They did not reject those Christian beliefs that were beyond the grasp of human reason and therefore could not be deduced by rational argument. Instead, they held that such truths rested entirely on revelation and were to be accepted on faith. To medieval thinkers, reason did not have an independent existence but ultimately had to acknowledge a supranational, superhuman standard of truth; Greek philosophy had to be interpreted to accord with Christian revelation. They wanted rational
thought to be directed by faith for Christian ends and guided by scriptural and ecclesiastical authority. Ultimately, faith had the final word.

Not all Christian thinkers welcomed the use of reason. Regarding Greek philosophy as an enemy of faith (would not reason lead people to question belief in miracles?), a fabricator of heresies (would not reason encourage disbelief in essential church teachings?), and an obstacle to achieving communion of the soul with God (would not a deviation from church teachings, under the influence of pagan philosophy, deprive people of salvation?), conservative theologians opposed the application of reason to Christian revelation. In a sense, the conservatives were right. By giving renewed vitality to Greek thought, medieval philosophy nurtured a powerful force that would eventually shatter the medieval concepts of nature and society and weaken Christianity. Modern western thought was created by thinkers who refused to subordinate reason to Christian authority. Reason proved a double-edged sword: it both ennobled and undermined the medieval world-view.

Saint Anselm and Abelard

An early scholastic, Saint Anselm (1033–1109) was abbot of the Benedictine monastery of Le Bec in Normandy. He used rational argument to serve the interests of faith. Like Augustine before him and other thinkers who followed him, Anselm said that faith was a precondition for understanding. Without belief there could be no proper knowledge. He developed a philosophical proof for the existence of God. Anselm argued as follows: we can conceive of no being greater than God. But if God were to exist only in thought and not in actuality, his greatness would be limited; he would be less than perfect. Hence, he exists.

Anselm’s motive and method reveal something about the essence of medieval philosophy. He does not begin as a modern might: “If it can be proven that God exists, I will adopt the creed of Christianity; if not, I will either deny God’s existence (atheism) or reserve judgment (agnosticism).” Rather, Anselm accepts God’s existence as an established fact because he believes what Holy Scripture says and what the church teaches. He then proceeds to employ logical argument to demonstrate that God can be known not only through faith, but also through reason. He would never use reason to subvert what he knows to be true by faith. This attitude would generally characterize later medieval thinkers, who also applied reason to faith.

As a young teacher of theology at the Cathedral School of Notre Dame, Peter Abelard (1079–1142) acquired a reputation for brilliance and combative-ness. His tragic affair with Héloïse, whom he tutored and seduced, has become one of the great romances in Western literature. Abelard’s most determined opponent, Bernard of Clairvaux, accused him of using the method of dialectical argument to attack faith. To Bernard, a monk and mystic, subjecting revealed truth to critical analysis was fraught with danger. Hearkening to Bernard’s powerful voice, the church condemned Abelard and confined him to a monastery for the rest of his days.

Abelard believed that it was important to apply reason to faith and that careful and constant questioning led to wisdom. In *Sic et Non* (Yes and No), he took 150 theological issues and, by presenting passages from the Bible and the church fathers, showed that there were conflicting opinions. He suggested that the divergent opinions of authorities could be reconciled through proper use of dialectics. But like Anselm before him, Abelard did not intend to refute traditional church doctrines. Reason would buttress, not weaken, the authority of faith. He wrote after his condemnation in 1141: “I will never be a philosopher, if this is to speak against St. Paul; I would not be an Aristotle if this were to separate me from Christ. . . . I have set my building on the cornerstone on which Christ has built his Church. . . . I rest upon the rock that cannot be moved.”

Saint Thomas Aquinas: The Synthesis of Faith and Reason

The introduction into Latin Christendom of the major works of Aristotle created a dilemma for religious authorities. Aristotle’s comprehensive philosophy of nature and man, a product of human reason alone, conflicted in many instances with essential Christian doctrine. Whereas Christianity
taught that God created the universe at a specific point in time, Aristotle held that the universe was eternal. Nor did Aristotle believe in the personal immortality of the soul, another cardinal principle of Christianity.

Some church officials feared that the dissemination of Aristotle’s ideas and the use of Aristotelian logic would endanger faith. At various times in the first half of the thirteenth century, they forbade teaching the scientific works of Aristotle at the University of Paris. But because the ban did not apply throughout Christendom and was not consistently enforced in Paris, Aristotle’s philosophy continued to be studied. Rejecting the position of conservatives, who insisted that philosophy would contaminate faith, Saint Thomas Aquinas (c. 1225–1274) upheld the value of human reason and natural knowledge. Aquinas taught at Paris and in Italy. His greatest work, *Summa Theologica*, is a systematic exposition of Christian thought and the crowning expression of the medieval attempt to integrate Aristotle with Christianity.

Can the teachings of faith conflict with the evidence of reason? For Aquinas, the answer was emphatically no. Since both faith and reason came from God, they were not in competition with each other but, properly understood, supported each other and formed an organic unity. Consequently, reason should not be feared, for it was another avenue to God. Because there was an inherent agreement between true faith and correct reason—they both ultimately stemmed from God—contradictions between them were only a misleading appearance. Although philosophy had not yet been able to resolve the dilemma, for God no such contradictions existed. In heaven, human beings would attain complete knowledge, as well as complete happiness. While on earth, however, they must allow faith to guide reason; they must not permit reason to oppose or undermine faith.

Thus, in exalting God, Aquinas also paid homage to human intelligence, proclaimed the value of rational activity, and asserted the importance of physical reality discovered through human senses. Consequently, he prized the natural philosophy of Aristotle. Correctly used, Aristotelian thought would assist faith. Aquinas’s great effort was to synthesize Aristotelianism with the divine revelation of Christianity. That the two could be harmonized he had no doubt. He made use of Aristotelian categories in his five proofs of God’s existence. In his first proof, for example, Aquinas argued that a thing cannot move itself. Whatever is moved must be moved by something else, and that by something else again. “Therefore, it is necessary to arrive at a first mover, moved by no other; and this everyone understands to be God.”

Aquinas upheld the value of reason. To love the intellect was to honor God and not to diminish the truth of faith. He had confidence in the power of the rational mind to comprehend most of the truths of revelation, and he insisted that in nontheological questions about specific things in nature—those questions not affecting salvation—people should trust only reason and experience. Thus, Aquinas gave new importance to the empirical world and to scientific speculation and human knowledge.

The traditional medieval view, based largely on Saint Augustine, drew a sharp distinction between the higher world of grace and the lower world of nature, between the world of spirit and the world of sense experience. Knowledge derived from the natural world was often seen as an obstacle to true knowledge. Aquinas altered this tradition by affirming the importance of knowledge of the social order and the physical world. He gave human reason and worldly knowledge a new dignity. Thus, the City of Man was not merely a sinful place from which people tried to escape in order to enter God’s city; it was worthy of investigation and understanding. But Aquinas remained a medieval thinker, for he always maintained that secular knowledge should be supervised and corrected by revealed truth, and he never questioned the truth of the medieval Christian view of the world and the individual.

Science

During the Early Middle Ages, few scientific works from the ancient world were available to Western Europeans. Scientific thought was at its lowest ebb since its origination more than a thousand years earlier in Greece. In contrast, both the Islamic and Byzantine civilizations preserved and, in some instances, added to the legacy of Greek science. In the High Middle Ages, however, many ancient texts were translated from Greek and Arabic into Latin and entered Latin Christendom for the first time. Spain, where Christian and Muslim civilizations...
met, was one of the two principal centers of translation. The other was Sicily, which had been controlled by Byzantium up to the last part of the ninth century and then by Islam until Christian Normans completed the conquest of the island by 1091.

In the thirteenth and fourteenth centuries, a genuine scientific movement did occur. Impressed with the naturalistic and empirical approach of Aristotle, some medieval schoolmen spent time examining physical nature. Among them was the Dominican Albert the Great (Albertus Magnus, c. 1206–1280). Born in Germany, he studied at Padua and taught at the University of Paris, where Thomas Aquinas was his student. To Albert, philosophy meant more than employing Greek reason to contemplate divine wisdom; it also meant making sense of nature. Albert devoted himself to editing and commenting on the vast body of Aristotle’s works.

While retaining the Christian emphasis on God, revelation, the supernatural, and the afterlife, Albert (unlike many earlier Christian thinkers) considered nature a valid field for investigation. In his writings on geology, chemistry, botany, and zoology, Albert, like Aristotle, displayed a respect for the concrete details of nature, utilizing them as empirical evidence. Albert approved of inquiry into the material world, stressed the value of knowledge derived from experience with nature, sought rational explanations for natural occurrences, and held that theological debates should not stop scientific investigations.

Other scholars in the scientific movement included Robert Grosseteste (c. 1175–1253), the chancellor of Oxford University. He declared that the roundness of the earth could be demonstrated by reason. In addition, he insisted that mathematics was necessary in order to understand the physical world, and he carried out experiments on the refraction of light. Another Englishman, the monk and philosopher Roger Bacon (c. 1214–1294), foreshadowed the modern attitude of using science to gain mastery over nature. Bacon valued the study of mathematics and read Arabic works on the reflection and refraction of light. Among his achievements were experiments in optics and the observation that light travels much faster than sound. His description of the anatomy of the vertebrate eye and optic nerves was the finest of that era, and he recommended dissecting the eyes of pigs and cows to obtain greater knowledge of the subject.

Medieval scholars did not make the breakthrough to modern science. They retained the belief that the earth was at the center of the universe and that different sets of laws operated on earth and in the heavens. They did not invent analytic geometry or calculus or arrive at the concept of inertia—all crucial for modern science. Moreover, medieval science was never wholly removed from a theological setting. Modern science self-consciously seeks the advancement of specifically scientific knowledge, but in the Middle Ages, many questions involving nature were raised merely to clarify a religious problem.

Medieval scholars and philosophers did, however, advance knowledge about optics, the tides, and mechanics. They saw the importance of mathematics for interpreting nature, and they performed some experiments. By translating and
commenting on ancient Greek and Arabic works, medieval scholars provided future ages with ideas to reflect on and to surpass, a necessary precondition for the emergence of modern science. Medieval thinkers also developed an anti-Aristotelian physics, which some historians of science believe influenced Galileo, the creator of modern mechanics, more than two centuries later.

Recovery of Roman Law

During the Early Middle Ages, Western European law essentially consisted of Germanic customs, some of which had been put into writing. Some elements of Roman law endured as custom and practice, but the formal study of Roman law had disappeared. The late eleventh and twelfth centuries saw the revival of Roman law, particularly in Bologna, Italy. Irnerius lectured on the *Corpus Juris Civilis*, codified by Byzantine jurists in the sixth century, and made Bologna the leading center for the study of Roman law. Irnerius and his students employed the methods of organization and logical analysis that scholastic theologians used in studying philosophical texts.

Unlike traditional Germanic law, which was essentially tribal and parochial, Roman law assumed the existence of universal principles, which could be grasped by the human intellect and expressed in the law of the state. Roman jurists had systematically and rationally structured the legal experience of the Roman people. The example of Roman law stimulated medieval jurists to organize their own legal tradition. Intellectuals increasingly came to insist on both a rational analysis of evidence and judicial decisions based on rational procedures. Law codes compiled in parts of France and Germany and in the kingdom of Castile were influenced by the recovery of Roman law.

Literature

Medieval literature was written both in Latin and in the vernacular. Much of medieval Latin literature consisted of religious hymns and dramas depicting the life of Christ and saints. In their native tongues, medieval writers created different forms of poetry: *chansons de geste*, the *roman*, and *troubadour* songs, which emerged during the High Middle Ages.

The French *chansons de geste*—epic poems of heroic deeds that had first been told orally—were written in the vernacular of northern France. These poems dealt with Charlemagne’s battles against the Muslims, with rebellious nobles, and with feudal warfare. The finest of these epic poems, *The Song of Roland*, expressed the feudal ethic—loyalty to one’s lord and devotion to Christianity were the highest virtues and treachery an unpardonable crime. Roland, Charlemagne’s nephew who was killed in a battle with the Muslims is idolized as the brave Christian knight who battles God’s enemies. He is a warrior of heroic proportions and great physical prowess, who is loyal to God, the King, and his knightly entourage.

The *Nibelungenlied*, the best expression of the heroic epic in Germany, is often called “the *Iliad* of the Germans.” Like its French counterpart, it dealt with heroic feats.

The *roman*—a blending of old legends, chivalric ideals, and Christian concepts—combined love with adventure, war, and the miraculous. Among the romans were the tales of King Arthur and his Round Table. Circulating by word of mouth for centuries, these tales spread from the British Isles to France and Germany. In the twelfth century, they were put into French verse.

Another form of medieval poetry, which flourished particularly in Provence, in southern France, dealt with the romantic glorification of women. Sung by troubadours, many of them nobles, the courtly love poetry expressed a changing attitude toward women. Although medieval men generally regarded women as inferior and subordinate, courtly love poetry ascribed to noble ladies superior qualities of virtue. To the nobleman, the lady became a goddess worthy of all devotion, loyalty, and worship. He would honor her and serve her as he did his lord; for her love he would undergo any sacrifice.

Noblewomen actively influenced the rituals and literature of courtly love. They often invited poets to their courts and wrote poetry themselves. They demanded that knights treat them with gentleness and consideration and that knights dress neatly, bathe often, play instruments, and compose (or at least recite) poetry. To prove worthy of his lady’s love, a knight had to demonstrate
Literature

167

By devoting himself to a lady, it was believed, a knight would ennoble his character. Courtly love did not involve a husband-wife relationship, but rather a noble’s admiration of and yearning for another woman of his class. Among nobles, marriages were arranged for political and economic reasons. The rituals of courtly love, it has been suggested, provided an outlet for erotic feelings condemned by the church. They also expanded the skills and refined the tastes of the noble. The rough warrior acquired wit, manners, charm, and skill with words. He was becoming a courtier and a gentleman.

The greatest literary figure of the Middle Ages was Dante Alighieri (1265–1321) of Florence. Dante appreciated the Roman classics and wrote not just in Latin, the traditional language of intellectual life, but in Italian, his native tongue. In this respect, he anticipated the Renaissance (see the following chapter). In the tradition of the troubadours, Dante wrote poems to his beloved Beatrice.

In *The Divine Comedy*, Dante synthesized the various elements of the medieval outlook and summed up, with immense feeling, the medieval understanding of the purpose of life. Written while Dante was in exile, *The Divine Comedy* describes the poet’s journey through hell, purgatory, and paradise. Dante arranges hell into nine concentric circles; in each region, sinners are punished in proportion to their earthly sins. The poet experiences all of hell’s torments—burning sand, violent storms, darkness, and fearful monsters that whip, claw, bite, and tear sinners apart. The ninth circle, the lowest, is reserved for Lucifer and traitors. Lucifer has three faces, each a different color, and two batlike wings. In each mouth he gnaws on one of the greatest traitors in history: Judas Iscariot, who betrayed Jesus, and Brutus and Cassius, who assassinated Caesar. Those condemned to hell are told: “All hope abandon, ye who enter in.” In purgatory, Dante meets sinners who, although they undergo punishment, will eventually enter paradise. In paradise, an abode of light, music, and gentleness, the poet, guided by Beatrice, meets the great saints and the Virgin Mary. For an instant, he glimpses the Vision of God. In this mystical experience, the aim of life is realized.

Another masterpiece of the Middle Ages is *The Canterbury Tales* of Geoffrey Chaucer (c. 1340–1400), written in the vernacular. Chaucer chose as his theme twenty-nine pilgrims en route from London to the religious shrine at Canterbury. In describing the pilgrims, Chaucer displayed humor, charm, an understanding of human nature,
and a superb grasp of the attitudes of the English. Few writers have pictured their times better.

**ARCHITECTURE**

Two styles of architecture evolved during the Middle Ages: Romanesque and Gothic. The Romanesque style dominated the eleventh century and the greater part of the twelfth. In imitation of ancient Roman structures, Romanesque buildings had massive walls that supported stone barrel and groin vaults with rounded arches. The thick walls were needed to hold up the great weight of the roofs. The walls left few spaces for windows, and so little light entered the interior. However, the development of the pointed arch permitted supports that lessened the bearing pressure of the roof on the walls. This new style, called Gothic, allowed buildings to have lofty, vaulted ceilings and huge windows, which permitted sunlight to flood the interiors. The Romanesque building produced an impression of massive solidity; Gothic buildings created an illusion of lightness and soaring energy.

The Gothic cathedral gave visual expression to the medieval conception of a hierarchical universe. As historian Joan Gadol puts it, “Inside and out, the Gothic cathedral is one great movement upward through a mounting series of grades, one ascent through horizontal levels marked by arches, galleries, niches, and towers . . . [T]he material ascends to the spiritual, the natural is assumed into the supernatural—all in a graduated rise.”

The magnificently designed stained-glass windows and complex sculptural decoration of Gothic cathedrals depicted scenes from the Bible and the lives of saints—as well as scenes from daily life—for the worshipers, many of whom were illiterate. The reduction of wall space, which allowed these massive glass illustrations, was made possible by the flying buttresses on the buildings’ exteriors. These great arcs of masonry carry the weight and thrust of the stone vaults out to the exterior walls.

The Gothic style was to remain vigorous until the fifteenth century, spreading from France to England, Germany, Spain, and beyond. Revived from time to time thereafter, it has proved to be one of the most enduring styles in Western art and architecture.

**THE FOURTEENTH CENTURY:**
**AN AGE OF ADVERSITY**

By the fourteenth century, Latin Christendom had experienced more than 250 years of growth. On the economic level, agricultural production had expanded, commerce and town life had revived, and the population had increased. On the political level, kings had become more powerful, bringing greater order and security to large areas. On the religious level, the papacy had demonstrated its strength as the spiritual leader of Christendom, and the clergy had been reformed. On the cultural level, a unified world-view, blending faith and reason, had been forged.

During the Late Middle Ages (roughly the fourteenth century), however, Latin Christendom was afflicted with severe problems. The earlier increases in agricultural production did not continue. Limited use of fertilizers and limited knowledge of conservation exhausted the topsoil. From 1301 to 1314, there was a general shortage of food, and from 1315 to 1317, famine struck Europe. People subsisted by scavenging. On roads and in villages, the deceased and those dying of starvation remained unattended. Throughout the century, starvation and malnutrition were widespread.

Adding to the economic crisis was the Black Death, or bubonic plague. This disease was carried by fleas on black rats and probably first struck Mongolia in 1331–1332. From there, it crossed into Russia. Carried back from Black Sea ports, the plague reached Sicily in 1347. Spreading swiftly throughout much of Europe, it attacked an already declining and undernourished population. The first onslaught lasted until 1351, and other serious outbreaks occurred in later decades. The crowded cities and towns had the highest mortalities. Perhaps twenty million people—about one-quarter to one-third of the European population—perished in the worst disaster in recorded history caused by natural forces. Contemporaries viewed the plague as divine punishment for humanity’s sins.
Overwhelmed by terror, people abandoned their sick children, spouses, and parents. Panic-stricken people drifted into debauchery, lawlessness, and frenzied forms of religious life. Organized bands of flagellants marched from region to region, beating themselves and each other with sticks and whips in a desperate effort to appease God, who, they believed, had cursed them with the plague. Art concentrated on morbid scenes of decaying flesh, open graves laden with worm-eaten corpses, dances of death, and the torments of hell. Sometimes, this hysteria was directed against Jews, who were accused of causing the plague by poisoning wells. Terrible massacres of Jews, often by mass burnings, occurred despite the pleas of the papacy.

The millions of deaths caused production of food and goods to plummet and some prices to soar. Economic and social tensions, some of them antedating the Black Death, escalated into rebellions. Each rebellion had its own specific causes, but a general pattern characterized the uprisings...
The Flowering and Dissolution of Medieval Civilization

In the countryside. When kings and lords, breaking with customary social relationships, imposed new and onerous regulations, the peasants rose in defense of their traditional rights.

In 1323, the lords’ attempt to reimpose old manorial obligations infuriated the free peasants of Flanders, whose condition had improved in earlier decades. The Peasants’ Revolt lasted five bloody years. In 1358, French peasants took up arms in protest against the plundering of the countryside by soldiers. Perhaps twenty thousand peasants died in the uprising known as the Jacquerie. In 1381, English peasants revolted, angered over legislation that tied them to the land and imposed new taxes. Like the revolts in Flanders and France, the uprising in England failed. To the landed aristocracy, the peasants were sinners attacking a social system ordained by God. Possessing superior might, the nobility suppressed the peasants, sometimes with savage cruelty.

Social unrest also afflicted towns. The wage earners of Florence (1378), the weavers of Ghent (1382), and the poor of Paris (1382) rose up against the ruling oligarchies. These revolts were generally initiated not by the poorest and most downtrodden, but by those who had made some gains and were eager for more. The rebellions of the urban poor were crushed just like the peasant uprisings.

Compounding the adversity was the series of conflicts known as the Hundred Years’ War (1337–1453). Because English kings ruled parts of France, conflicts between the two monarchies were common. In the opening phase of the war, the English inflicted terrible defeats on French knights at the battles of Crécy (1346) and Poitiers (1356). Using longbows, which allowed them to shoot arrows rapidly, English archers cut down wave after wave of charging French cavalry. The war continued on and off throughout the fourteenth century. During periods of truce, gangs of unemployed soldiers roamed the French countryside killing and stealing, actions that precipitated the Jacquerie, the peasant uprising.

After the battle of Agincourt (1415), won by the English under Henry V, the English controlled most of northern France. It appeared that England would shortly conquer France and join the two lands under one crown. At this crucial moment in French history, a young and illiterate peasant girl, Joan of Arc (1412–1431), helped rescue France. Believing that God commanded her to drive the English out of France, Joan rallied the demoralized French troops, leading them in battle. In 1429, she liberated the besieged city of Orléans. Later she was captured and imprisoned by the English, and in 1431 she was condemned as a heretic and a witch by a handpicked church court and was burned at the stake. Inspired by Joan’s death, the French drove the English from all French territory except the port of Calais.

During the Hundred Years’ War, French kings introduced new taxes, which added substantially to their incomes. These monies furnished them with the means to organize a professional army of well-paid and loyal troops. By evoking a sense of pride and oneness in the French people, the war also contributed to a growing, but still incomplete, national unity. The English, too, emerged from the war with a greater sense of solidarity, and Parliament, because it had to finance the war, gained in stature. However, the war had horrendous consequences for the French peasants. Thousands of farmers were killed, and valuable farmland was destroyed by English armies and marauding bands of mercenaries. In a portentous development, the later stages of the Hundred Years’ War saw the use of gunpowder and heavy artillery.

The Decline of the Papacy

The principal sign of the decline of medieval civilization in the Late Middle Ages was the waning authority and prestige of the papacy. In the High Middle Ages, the papacy had been the dominant institution in Christendom, but in the Late Middle Ages, its power weakened. The medieval ideal of a unified Christian commonwealth guided by the papacy was shattered. Papal authority declined in the face of the growing power of kings, who championed the parochial interests of states. As the pope became more embroiled in European politics, papal prestige and the pope’s capacity to command diminished. Many pious Christians felt that the pope was behaving more like a secular ruler than like an Apostle of Christ. Political
Theorists and church reformers further undermined papal authority.

Conflict with France

Philip IV of France (1285–1314) taxed the church in his land to raise revenue for war. In doing so, he disregarded the church prohibition against the taxing of its property without papal permission. In 1296, in the bull Clerici Laicos, Pope Boniface VIII (1294–1303) decreed that kings and lords who imposed taxes on the clergy and the clergy who paid them would be excommunicated. Far from bowing to the pope’s threat, Philip acted forcefully to assert his authority over the church in his kingdom. Boniface backed down from his position, declaring that the French king could tax the clergy in times of national emergency. Thus, the matter was resolved to the advantage of the state.

A second dispute had more disastrous consequences for Boniface. Philip tried and imprisoned a French bishop despite Boniface’s warning that this was an illegal act and a violation of church law and tradition, which held that the church, not the state, must judge the clergy. Philip summoned the first meeting of the Estates General to gain the backing of the nation. Shortly afterward, Boniface threatened to excommunicate Philip.
The outraged monarch raided the papal summer palace at Anagni in September 1303 and captured the pope. Although Boniface was released, this shocking event proved too much for him, and a month later he died.

Boniface’s two successors, Benedict XI (1303–1304) and Clement V (1305–1314), tried to conciliate Philip. In particular, Clement decided to remain at Avignon, a town on the southeastern French frontier, where he had set up a temporary residence.

From 1309 to 1377, a period known as the Babylonian Captivity, the popes were all French and resided in Avignon, not Rome. During this time, the papacy, removed from Rome and deprived of revenues from the Papal States in Italy, was often forced to pursue policies favorable to France. The growing antipapalism among the laity further damaged the papal image. Laypeople were repelled by the luxurious style of living at Avignon and by the appointment of high churchmen to lands where they did not know the language and showed little concern for the local population. Criticism of the papacy increased. The conflict between Boniface and Philip provoked a battle of words between proponents of papal supremacy and defenders of royal rights.

The most important critique of clerical intrusion into worldly affairs was The Defender of the Peace (1324) by Marsiglio of Padua (c. 1290–c. 1343). Marsiglio held that the state ran according to its own principles, which had nothing to do with religious commands originating in a higher realm. Religion dealt with a supranatural world and with principles of faith that could not be proved by reason, wrote Marsiglio. Politics, on the other hand, dealt with the natural world and the affairs of the human community. Political thinkers should not try to make the earthly realm conform to articles of faith. For Marsiglio, the state was self-sufficient; it needed no instruction from a higher authority. Thus, Marsiglio denied the essential premises of medieval papal political theory: that the pope, as God’s vicar, was empowered to guide kings; that the state, as part of a divinely ordered world, must conform to and fulfill supranatural ends; and that the clergy were above the laws of the state. Marsiglio viewed the church as a spiritual institution with no temporal power. Marsiglio’s concept of an autonomous state that did not answer to clerical authority anticipated modern political thought.

The Great Schism and the Conciliar Movement

Pope Gregory XI returned the papacy to Rome in 1377, ending the Babylonian Captivity. But the papacy was to endure an even greater humiliation: the Great Schism. Elected pope in 1378, Urban VI abused and imprisoned a number of cardinals. Fleeing from Rome, the cardinals declared that the election of Urban had been invalid and elected Clement VII as the new pope. Refusing to step down, Urban excommunicated Clement, who responded in kind. To the utter confusion and anguish of Christians throughout Europe, there were now two popes: Urban ruling from Rome and Clement from Avignon.

Prominent churchmen urged the convening of a general council—the Council of Pisa—to end the disgraceful schism, which obstructed the papacy from performing its sacred duties. Held in 1409 and attended by hundreds of churchmen, the Council of Pisa deposed both Urban and Clement and elected a new pope. Neither deposed pope recognized the council’s decision, so Christendom then had three popes. A new council was called at Constance in 1414. In the struggle that ensued, each of the three popes either abdicated or was deposed in favor of an appointment by the council. In 1417, the Great Schism ended.

During the first half of the fifteenth century, church councils met at Pisa (1409), Constance (1414–1418), and Basel (1431–1449) in order to end schism, combat heresy, and reform the church. The Conciliar Movement attempted to transform the papal monarchy into a constitutional system, in which the pope’s power would be regulated by a general council. Supporters of the movement held that the papacy could not reform the church as effectively as a general council representing the clergy. But the Conciliar Movement ended in failure. As the Holy Roman emperor and then the French monarch withdrew support from the councils, the papacy regained its authority over the higher clergy. In 1460, Pope Pius II condemned the Conciliar Movement as heretical.
Deeply embroiled in European power politics, the papacy often neglected its spiritual and moral responsibilities. Many devout Christians longed for a religious renewal, a return to simple piety. The papacy barely heard this cry for reform. Its failure to provide creative leadership for reform made possible the Protestant Reformation of the sixteenth century. By splitting Christendom into Catholic and Protestant, the Reformation destroyed forever the vision of a Christian world commonwealth guided by Christ’s vicar, the pope.

Fourth-Century Heresies

Another threat to papal power and to the medieval ideal of a universal Christian community guided by the church came from radical reformers, who questioned the function and authority of the entire church hierarchy. These heretics in the Late Middle Ages were forerunners of the Protestant Reformation.

The two principal dissenters were the Englishman John Wycliffe (c. 1320–1384) and the Bohemian (Czech) Jan Hus (c. 1369–1415). By stressing a personal relationship between the individual and God and by claiming that the Bible itself, rather than church teachings, was the ultimate Christian authority, Wycliffe challenged the fundamental position of the medieval church: that the avenue to salvation passed through the church alone. He denounced the wealth of the higher clergy and sought a return to the spiritual purity and material poverty of the early church.

To Wycliffe, the wealthy, elaborately organized hierarchy of the church was unnecessary and wrong. The splendidly dressed and propertied bishops had no resemblance to the simple people who first followed Christ. Indeed, these worldly bishops, headed by a princely and tyrannical pope, were really anti-Christians, the “fiends of Hell.” Wycliffe wanted the state to confiscate church property and the clergy to embrace poverty. By denying that priests changed the bread and wine of communion into the substance of the body and blood of Christ, Wycliffe rejected the sacramental power of the clergy. The church, in response, deprived the Lollards—an order of poor priests that spread Wycliffe’s teachings—of their priestly functions.

Wycliffe’s ideas were enthusiastically received by Czech reformers in Bohemia led by Jan Hus. Like Wycliffe, Hus advocated vernacular translations of the Bible, which would be accessible to common people, and upbraided the upper clergy for their luxury and immorality.

Although both movements were declared heretical and some of Wycliffe’s followers and Hus were burned at the stake, the church could not crush the dissenters’ followers or eradicate their teachings. To some extent, the doctrines of the Reformation would parallel the teachings of Wycliffe and Hus.

Breakup of the Thomistic Synthesis

In the Late Middle Ages, the papacy lost power as kings, political theorists, and religious dissenters challenged papal claims to supreme leadership. The great theological synthesis constructed by the scholastic theologians of the twelfth and thirteenth centuries was also breaking down. The process of fragmentation seen in the history of the church took place in philosophy as well.

Saint Thomas Aquinas’s system was the culmination of the scholastic attempt to show the basic agreement of philosophy and religion. In the fourteenth century, a number of thinkers cast doubt on the possibility of synthesizing Aristotelianism and Christianity, that is, reason and faith. Denying that reason could demonstrate the truth of Christian doctrines with certainty, philosophers tried to separate reason from faith. Whereas Aquinas had said that reason proved or clarified much of revelation, fourteenth-century thinkers asserted that the basic propositions of Christianity were not open to rational proof. Whereas Aquinas had held that faith supplemented and perfected reason, some philosophers were now proclaiming that reason often contradicted faith.

To be sure, this new outlook did not urge abandoning faith in favor of reason. Faith had to prevail in any conflict with reason because faith rested on God, the highest authority in the universe. But the relationship between reason and revelation was altered. Articles of faith, it was now held, had
nothing to do with reason; they were to be believed, not proved. Reason was not an aid to theology but a separate sphere of activity. This new attitude snapped the link between reason and faith that Aquinas had so skillfully forged. The scholastic synthesis was disintegrating.

The chief proponent of this new outlook was William of Ockham (c. 1285–1349). In contrast to Aquinas, Ockham insisted that natural reason could not prove God’s existence, the soul’s immortality, or any other essential Christian doctrine. Reason could say only that God probably exists and that he probably endowed human beings with an immortal soul; it could not prove these propositions with certainty. The tenets of faith were beyond the reach of reason, said Ockham; there was no rational foundation to Christianity. For Ockham, reason and faith did not necessarily complement each other as they did for Aquinas; it was neither possible nor helpful to join reason to faith. He did not, however, seek to undermine faith—only to disengage it from reason.

In the process of proclaiming the authority of faith, Ockham also furthered the use of reason to comprehend nature. Ockham’s approach, separating natural knowledge from religious dogma, made it easier to explore the natural world empirically, without fitting it into a religious framework. Ockham thus is a forerunner of the modern mentality, which is characterized by the separation of reason from religion and by an interest in the empirical investigation of nature.

**THE MIDDLE AGES AND THE MODERN WORLD: CONTINUITY AND DISCONTINUITY**

Medieval civilization began to decline in the fourteenth century, but no dark age comparable to the three centuries following Rome’s fall descended on Europe; its economic and political institutions and technological skills had grown too strong. Instead, the waning of the Middle Ages opened up possibilities for another stage in Western civilization: the modern age.

The modern world is linked to the Middle Ages in innumerable ways. European cities, the middle class, the state system, English common law, universities—all had their origins in the Middle Ages. During medieval times, important advances were made in business practices, including partnerships, systematic bookkeeping, and the bill of exchange, which paved the way for modern banking. By translating and commenting on the writings of Greek and Arabic thinkers, medieval scholars preserved a priceless intellectual heritage, without which the modern mind could never have evolved. In addition, numerous strands connect the thought of the scholastics and that of early modern philosophers.

Feudal traditions lasted long after the Middle Ages. Up until the French Revolution, for instance, French aristocrats enjoyed special privileges and exercised power over local government. In England, the aristocracy controlled local government until the Industrial Revolution transformed English society in the nineteenth century. Retaining the medieval ideal of the noble warrior, aristocrats continued to dominate the officer corps of European armies through the nineteenth century and even into the twentieth. Aristocratic notions of duty, honor, loyalty, and courtly love have endured into our own day.

During the Middle Ages, Europeans began to take the lead over the Muslims, the Byzantines, the Chinese, and all other peoples in the use of technology. Medieval technology and inventiveness stemmed in part from Christianity, which taught that God had created the world specifically for human beings to subdue and exploit. Consequently, medieval people tried to employ animal power and laborsaving machinery to relieve human drudgery. Moreover, Christianity taught that God was above nature, not within it, so Christians faced no spiritual obstacle to exploiting nature—unlike, for instance, the Hindus. In contrast to classical humanism, the Christian outlook did not consider manual work degrading; even monks combined it with study.

The Christian stress on the sacred worth of the individual (each person had an immortal soul that was God’s concern), on human equality (differences in rank and birth were of no account to God on Judgment Day), and on the higher law of God (divine precepts had a greater pull on conscience than did the state’s laws) has never ceased to influence Western civilization. Even though in modern times the various Christian churches have not
often taken the lead in political and social reform, the ideals identified with the Judeo-Christian tradition have become part of the Western heritage. As such, they have inspired social reformers who may no longer identify with their ancestral religion.

In structuring canon (church) law into a coherent and rational system, church jurists provided a model for legal systems in emerging European states. Moreover, specific elements of canon law have become an integral part of modern Western law. Medieval jurists, for example, argued for the replacement of trial by ordeals of fire or water, which was central to ancient Germanic folk law, with rational trial procedures and insisted that marriages based on fraud or duress could be invalidated.

Believing that God’s Law was superior to state or national decrees, medieval philosophers provided a theoretical basis for opposing tyrannical kings who violated Christian principles. The idea that both the ruler and the ruled are bound by a higher law would, in a secularized form, become a principal element of modern liberal thought.

Feudalism also contributed to the history of liberty. According to feudal custom, the king, as a member of the feudal community, was duty-bound to honor agreements made with his vassals. Lords possessed personal rights, which the king was obliged to respect. Resentful of a king who ran roughshod over customary feudal rights, lords also negotiated contracts with the crown, such as the famous Magna Carta, to define and guard their customary liberties. To protect themselves from the arbitrary behavior of a king, feudal lords initiated what came to be called government by consent and the rule of law.

During the Middle Ages, then, there gradually emerged the idea that law was not imposed on inferiors by an absolute monarch but required the collaboration of the king and his subjects; that the king, too, was bound by the law; and that lords had the right to resist a monarch who violated agreements. A related phenomenon was the rise of representative institutions, with which the king was expected to consult on the realm’s affairs. The most notable such institution was the British Parliament; although subordinate to the king, it became a permanent part of the state. Later, in the seventeenth century, Parliament would successfully challenge royal authority. Thus, continuity exists between the feudal tradition of a king bound by law and the modern practice of limiting the authority of the head of state.

Although the elements of continuity are clear, the characteristic outlook of the Middle Ages is as different from that of the modern age as it was from the outlook of the ancient world. Religion—which often expressed a disdain for earthly pursuits and a preoccupation with the world to come—was the integrating feature of the Middle Ages, whereas science and secularism—a preoccupation with worldly life—determine the modern outlook. The period from the Italian Renaissance of the fifteenth century through the eighteenth-century Age of Enlightenment constituted a gradual breaking away from the medieval world-view: a rejection of the medieval conception of nature, the individual, and the purpose of life. The transition from medieval to modern was neither sudden nor complete, for there are no sharp demarcation lines separating historical periods. While many distinctively medieval ways endured into the sixteenth, seventeenth, and even eighteenth centuries, these centuries saw as well the rise of new intellectual, political, and economic forms that marked the emergence of modernity.

Medieval thought began with the existence of God and the truth of his revelation as interpreted by the church, which set the standards and defined the purposes for human endeavor. The medieval mind rejected the fundamental principle of Greek philosophy: the autonomy of reason. Without the guidance of revealed truth, reason was seen as feeble. Philosophical inquiry was permissible only if the mind arrived at clerically approved conclusions.

Scholastics engaged in genuine philosophical speculation, but they did not allow philosophy to challenge the basic premises of their faith. Unlike either ancient or modern thinkers, medieval schoolmen ultimately believed that reason alone could not provide a unified view of nature or society. A rational soul had to be guided by a divine light. For all medieval philosophers, the natural order depended on a supernatural order for its origin and purpose. To understand the natural world properly, it was necessary to know its relationship to the higher world. The discoveries of reason had to accord with Scripture as interpreted
by the church. In medieval thought, says the historian-philosopher Ernst Cassirer, 

*neither science nor morality, neither law nor state, can be erected on its own foundations. Supernatural assistance is always needed to bring them to true perfection. . . . Reason is and remains the servant of revelation; within the sphere of natural intellectual and psychological forces, reason leads toward, and prepares the ground for, revelation.*

In the modern view, both nature and the human intellect are self-sufficient. Nature is a mathematical system that operates without miracles or any other form of divine intervention. To comprehend nature and society, the mind needs no divine assistance; it accepts no authority above reason. The modern mentality finds it unacceptable to reject the conclusions of science on the basis of clerical authority and revelation or to ground politics, law, or economics on religious dogma. It refuses to settle public issues by appeals to religious belief, which is now seen as a strictly private concern.

The medieval philosopher understood both nature and society to be hierarchical. God was the source of moral values, and the church was responsible for teaching and upholding these ethical norms. Kings acquired their right to rule from God. The entire social structure constituted a hierarchy: the clergy—the highest order—guided
society according to Christian standards; lords defended Christian society from its enemies; and serfs, lowest in the social order, toiled for the good of all. In the hierarchy of knowledge, a lower form of knowledge derived from the senses, and the highest type of knowledge, theology, dealt with God’s revelation. To the medieval mind, this hierarchical ordering of nature, society, and knowledge had divine sanction.

Rejecting the medieval division of the universe into higher and lower realms and superior and inferior substances, the modern view postulates the uniformity of nature and of nature’s laws: the cosmos knows no privilege of rank; heavenly bodies follow the same laws of nature as earthly objects. Space is geometric and homogeneous, not hierarchical, heterogeneous, and qualitative. The universe is no longer conceived of as finite and closed but is seen as infinite, and its operations are explained mathematically. The modern thinker studies mathematical law and chemical composition, not grades of perfection. Spiritual meaning is not sought in an examination of the material world. Roger Bacon, for example, described seven coverings of the eye and then concluded that God had fashioned the eye in this manner in order to express the seven gifts of the Spirit. This way of thinking is alien to the modern outlook. So, too, is the medieval belief that natural disasters, such as plagues and famines, are God’s punishments for people’s sins.

The modern West has also rejected the personal and customary character of feudal law. As the modern state developed, law assumed an impersonal and objective character. For example, if a lord demanded more than the customary forty days of military service, a vassal might refuse to comply because he would see the lord’s request as an unpardonable violation of custom and agreement, as well as an infringement on his liberties. In the modern state, with a constitution and a representative assembly, if a new law increasing the length of military service is passed, it merely replaces the old law. People do not refuse to obey it because the government has broken faith or violated custom.

In the modern world, the individual’s relationship to the universe has been radically transformed. Medieval people lived in a geocentric universe that was finite in space and time. The universe was small, enclosed by a sphere of stars, beyond which were the heavens. The universe, it was believed, was some four thousand years old, and, in the not-too-distant future, Christ would return and human history would end. People in the Middle Ages knew why they were on earth and what was expected of them; they never doubted that heaven would be their reward for living a Christian life. Preparation for heaven was the ultimate aim of life. J. H. Randall, Jr., a historian of ideas, eloquently sums up the medieval view of a purposeful universe, in which the human being’s position was clearly defined:

The world was governed throughout by the omnipotent will and omniscient mind of God, whose sole interests were centered in man, his trial, his fall, his suffering and his glory. Worm of the dust as he was, man was yet the central object in the whole universe. . . . And when his destiny was completed, the heavens would be rolled up as a scroll and he would dwell with the Lord forever. Only those who rejected God’s freely offered grace and with hardened hearts refused repentance would be cut off from this eternal life.

This comforting medieval vision is alien to the modern outlook. Today, in a universe more than thirteen billion years old, in which the earth is a tiny speck floating in an endless cosmic ocean,
Primary Source

Peter Abelard, The Synthesis of Reason and Faith

Dialectics, a method of logical analysis, applied to the Bible and the writings of early Christian thinkers, was brilliantly taught by Peter Abelard in the cathedral school at Paris. In his book Sic et Non (Yes and No), Abelard listed some 150 questions on which the early church authorities had taken differing positions over the centuries. He suggested that these issues could be resolved by the careful application of the dialectical method to the language of the texts.

Although he never intended to challenge the Christian faith, Abelard raised, with his critical scrutiny, fears that the dialectical approach would undermine faith and foster heresy, and he was forced to quit his teaching post. Nevertheless, the new scholastic rationalistic approach swept the schools of Europe. In the following reading, Abelard describes the critical use of rational methods in textual analysis.

We must be careful not to be led astray by attributing views to the [Church] Fathers which they did not hold. This may happen if a wrong author's name is given to a book or if a text is corrupt. For many works are falsely attributed to one of the Fathers to give them authority, and some passages even in the Bible are corrupt through the errors of copyists.... We must be equally careful to make sure that an opinion quoted from a Father was not withdrawn or corrected by him in the light of later and better knowledge.... Again the passage in question may not give the Father's own opinion, but that of some other writer whom he is quoting....

We must also make a thorough inquiry when different decisions are given on the same matter under canon [church] law. We must discover, whether it is meant to grant an indulgence or exhort to some perfection. In this way we may clear up the apparent contradiction.... If the opinion is a definitive judgment, we must determine whether it is of general application or directed to a particular case.... The when and why of the order must also be considered because what is allowed at one time is often forbidden at another, and what is often laid down as the strict letter of the law may be sometimes moderated by a dispensation....

Furthermore we customarily talk of things as they appear to our bodily senses and not as they are in actual fact. So judging by what we see we say it is a starry sky or it is not, and that the sun is hot or has no heat at all, when these things though variable in appearance are ever constant. Can we be surprised, then, that some matters have been stated by the Fathers as opinions rather than the truth? Then again many controversies would be quickly settled if we could be on our guard against a particular word used in different senses by different authors....

By collecting contrasting divergent opinions I hope to provoke young readers to push themselves to the limit in the search for truth, so that their wits may be sharpened by their investigation. It is by doubting that we come to investigate, and by investigating that we recognise the truth.

where life evolved over tens of millions of years, many westerners no longer believe that human beings are special children of God; that heaven is their ultimate goal; that under their feet is hell, where grotesque demons torment sinners; and that God is an active agent in human history. To many intellectuals, the universe seems unresponsive to people’s religious supplications, and life’s purpose is sought within the limits of earthly existence. Science and secularism have driven Christianity and faith from their central position to the periphery of human concerns.

In the nineteenth and twentieth centuries, Christian thinkers lamented the waning of faith. Distressed by all-consuming secularism, crude materialism, and vicious class and national antagonisms, these thinkers attributed the ills of the modern West to a diminishing commitment to Christianity and called for spiritual renewal. Some of them, looking back nostalgically to the Middle Ages when life had an overriding religious purpose and few doubted the truth of Christian teachings, contended that the modern West would benefit from a reaffirmation of those Christian concerns and values that had energized medieval society.

The modern outlook developed gradually in the period from the Renaissance to the eighteenth-century Age of Enlightenment. Mathematics rendered the universe comprehensible. Economic and political thought broke free of the religious frame of reference. Science became the great hope of the future. The thinkers of the Enlightenment wanted to liberate humanity from superstition, ignorance, and traditions that could not pass the test of reason. They saw themselves as emancipating culture from theological dogma and clerical authority. Rejecting the Christian idea of a person’s inherent sinfulness, they held that the individual was basically good and that evil resulted from faulty institutions, poor education, and bad leadership. Thus, the concept of a rational and free society in which individuals could realize their potential slowly emerged.

SUGGESTED READING


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NOTES


distinguished herself as a mystic, poet, and naturalist.


Chapter 10

Intellectual Transformation: The Scientific Revolution and the Age of Enlightenment

- The Medieval View of the Universe
- A New View of Nature
- The Newtonian Synthesis
- Prophets of Modern Science
- The Meaning of the Scientific Revolution
- The Age of Enlightenment: Affirmation of Reason and Freedom
- Christianity Assailed: The Search for a Natural Religion
- Political Thought
- Social and Economic Thought
- Conflicts and Politics
- The Enlightenment and the Modern Mentality

Focus Questions

1. How did the Scientific Revolution transform the medieval view of the universe?
2. How did the Scientific Revolution contribute to the shaping of the modern mentality?
3. What were the essential concerns of the *philosophes* of the Enlightenment?
4. How did the Enlightenment contribute to the shaping of the modern mentality?

See our website for additional materials: www.cengage.com/history/perry/westcivbrief7e
The movement toward modernity initiated by the Renaissance was greatly advanced by the Scientific Revolution of the seventeenth century. The Scientific Revolution destroyed the medieval view of the universe and established the scientific method—rigorous and systematic observation and experimentation—as the essential means of unlocking nature’s secrets. Increasingly, Western thinkers maintained that nature was a mechanical system, governed by laws that could be expressed mathematically. The new discoveries electrified the imagination. Science displaced theology as the queen of knowledge, and reason, which had been subordinate to religion in the Middle Ages, asserted its autonomy. The great confidence in reason inspired by the Scientific Revolution helped give rise to the Enlightenment, which explicitly rejected the ideas and institutions of the medieval past and articulated the essential norms of modernity.

THE MEDIEVAL VIEW OF THE UNIVERSE*

Medieval thinkers had constructed a coherent picture of the universe that blended the theories of two ancient Greeks, Aristotle and Ptolemy of Alexandria, with Christian teachings. To the medieval mind, the cosmos was a giant ladder, a qualitative order, ascending toward heaven. God was at the summit of this hierarchical universe, and the earth, base and vile, was at the bottom, just above hell. It was also the center of the universe. In the medieval view, the earth’s central location meant that the universe centered on human beings, that by God’s design, human beings—the only creatures on whom God had bestowed reason and the promise of salvation—were lords of the earth. Around the stationary earth revolved seven transparent spheres, each of which carried one of the “planets”—the moon, Mercury, Venus, the sun, Mars, Jupiter, and Saturn. (Since the earth did not move, it was not considered a planet.) The eighth sphere, in which the stars were embedded, also revolved about the earth. Beyond the stars was a heavenly sphere, the prime mover, that imparted motion to the planets and the stars, so that in one day the entire celestial system turned around the stationary earth. Enclosing the entire system was another heavenly sphere, the Empyrean, where God sat on his throne, attended by angels.

Medieval thinkers inherited Aristotle’s view of a qualitative universe. Earthly objects were composed of earth, water, air, and fire, whereas celestial objects, belonging to a higher world, were composed of ether or quintessence—an element too pure and perfect to be found on earth, which consisted of base matter. In contrast to earthly objects, heavenly bodies were incorruptible; that is, they experienced no change. Since the quintessential heavens differed totally from earth, the paths of planets could not follow the same laws that governed the motion of earthly objects. This two-world orientation blended well with the Christian outlook.

Like Aristotle, Ptolemy held that planets moved around the earth in perfect circular orbits and at uniform speeds. However, in reality the path of planets is not a circle but an ellipse, and planets do not move at uniform speed but accelerate as they approach the sun. Therefore, problems arose that required Ptolemy to incorporate into his system certain ingenious devices that earlier Greek astronomers had employed. For example, to save the appearance of circular orbits, Ptolemy made use of epicycles, small circles attached to the rims of larger circles. A planet revolved uniformly around the small circle, the epicycle, which in turn revolved about the earth in a larger circle. If one ascribed a sufficient number of epicycles to a planet, the planet could seem to move in a perfectly circular orbit.

The Aristotelian-Ptolemaic model of the cosmos did appear to accord with common sense and raw perception: the earth does indeed seem and feel to be at rest. And the validity of this view seemed to be confirmed by evidence, for the model enabled thinkers to predict with considerable accuracy the movement and location of celestial bodies and the passage of time. This geocentric model and the division of the universe into higher and lower worlds also accorded with passages in Scripture. Scholastic philosophers harmonized Aristotelian and Ptolemaic science with Christian theology, producing an intellectually and emotionally satisfying picture of the universe in which everything was arranged according to a divine plan.

*See also the chapter entitled “The Flowering and Dissolution of Medieval Civilization.”
A NEW VIEW OF NATURE

In several ways, the Renaissance contributed to the Scientific Revolution. The revival of interest in antiquity during the Renaissance led to the rediscovery of some ancient scientific texts, including the works of Archimedes (287–212 B.C.), which fostered new ideas in mechanics, and to improved translations of the medical works of Galen, a contemporary of Ptolemy, which stimulated the study of anatomy. Renaissance art, too, was a factor in the rise of modern science, for it linked an exact representation of the human body to mathematical proportions and demanded accurate observation of natural phenomena. By defining visual space and the relationship between the object and the observer in mathematical terms and by delineating the natural world with unprecedented scientific precision, Renaissance art helped to promote a new view of nature, which later found expression in the astronomy of Copernicus and Kepler and the physics of Galileo.

The Renaissance revival of ancient Pythagorean and Platonic ideas, which stressed mathematics as the key to comprehending reality, also contributed to the Scientific Revolution. Extending the mathematical harmony found in music to the universe at large, Pythagoras (c. 580–507 B.C.) and his followers believed that all things have form, which can be expressed numerically, and that reality consists fundamentally of numerical relations, which the mind can grasp. Plato maintained that beyond the world of everyday objects made known to us through the senses lies a higher reality, the world of Forms, which contains an inherent mathematical order apprehended only by thought. The great thinkers of the Scientific Revolution were influenced by these ancient ideas of nature as a harmonious mathematical system knowable to the mind.

Nicolaus Copernicus: The Dethronement of the Earth

Modern astronomy begins with Nicolaus Copernicus (1473–1543), a Polish astronomer, mathematician, and church canon. He proclaimed that earth is a planet that orbits a centrally located sun together with the other planets. This heliocentric theory served as the kernel of a new world picture that eventually supplanted the medieval view of the universe. Copernicus did not base his heliocentric theory on new observations and new data. What led him to remove the earth from the center of the universe was the complexity and cumbersomeness of the Ptolemaic system, which offended his sense of mathematical order.
Galileo Galilei (1564–1642) is the principal reason that the seventeenth century has been called “the century of genius.” A Pisan by birth, Galileo was a talented musician and artist and a cultivated humanist; he knew and loved the Latin classics and Italian poetry. He was also an astronomer and physicist who helped shatter the medieval conception of the cosmos and shape the modern scientific outlook. Galileo was indebted to the Platonic tradition, which tried to grasp the mathematical harmony of the universe, and to Archimedes, the Hellenistic mathematician-engineer who had sought a geometric understanding of space and motion.

Revolutions and all other works that ascribed motion to the earth on the Index of Prohibited Books.

COPERNICAN SYSTEM. In his On the Revolutions of the Heavenly Spheres, Copernicus proposed a heliocentric model in which the planets orbit around the sun. (The Granger Collection)

To Copernicus, the numerous epicycles (the number had been increased since Ptolemy, making the model even more cumbersome) violated the Platonic vision of the mathematical symmetry of the universe.

Concerned that his theories would spark a controversy, Copernicus refused to publish his work, but, persuaded by his friends, he finally relented. His masterpiece, On the Revolutions of the Heavenly Spheres, appeared in 1543. As Copernicus had feared, his views did stir up controversy, but the new astronomy did not become a passionate issue until the early seventeenth century, more than fifty years after the publication of On the Revolutions. The Copernican theory frightened clerical authorities, who controlled the universities as well as the pulpits, for it seemed to conflict with Scripture. For example, Psalm 93 says: “Yea, the world is established, that it cannot be moved.” And Psalm 103 says that God “fixed the earth upon its foundation not to be moved forever.” In 1616, the church placed On the
Galileo rejected the medieval division of the universe into higher and lower realms and proclaimed the modern idea of nature’s uniformity. Learning that a telescope had been invented in Holland, Galileo built one for himself and used it to investigate the heavens—the first person to do so. From his observations of the moon, Galileo concluded

*that the surface of the moon is not smooth, uniform, and precisely spherical as a great number of philosophers believe it (and the other heavenly bodies) to be, but is uneven, rough, and full of cavities and prominences, being not unlike the face of the earth, relived by chains of mountains and deep valleys.*

This discovery of the moon’s craters and mountains and of spots on the supposedly unblemished sun led Galileo to break with the Aristotelian notion that celestial bodies were pure, perfect, and unchangeable. For Galileo, there was no difference in quality between celestial and terrestrial bodies. Nature was not a hierarchical order, in which physical entities were ranked according to their inherent quality; rather, it was a homogeneous system, the same throughout.

With his telescope, Galileo discovered the four moons that orbit Jupiter, an observation that overcame a principal objection to the Copernican system. Galileo showed that a celestial body could indeed move around a center other than the earth, that the earth was not the common center for all celestial bodies, and that a celestial body (the earth’s moon or Jupiter’s moons) could orbit a planet at the same time that the planet revolved around another body (the sun).

Galileo pioneered in experimental physics and advanced the modern idea that knowledge of motion should be derived from direct observation and from mathematics. In dealing with problems of motion, he insisted on applying mathematics to the study of moving bodies and did in fact study acceleration by performing experiments, which required careful mathematical measurement. For Aristotelian scholastics, a rock fell because it was striving to reach its proper place in the universe, thereby fulfilling its nature; it was acting in accordance with the purpose God had assigned it. Galileo completely rejected the view that motion is due to a quality inherent in an object. Rather, he said, motion is the relationship of bodies to time and distance. By holding that bodies fall according to uniform and quantifiable laws, Galileo posited an entirely different conceptual system. This system requires that we study angles and distances and search for mathematical ratios but avoid inquiring into an object’s quality and purpose—the role God assigned it in a hierarchical universe. Moreover, Galileo’s physics implied that celestial objects, which hitherto had belonged to a separate and higher realm, were subject to the same laws that governed terrestrial motion—another sign of nature’s uniformity. The traditional belief in a sharp distinction between heavenly and earthly realms was weakened by both Galileo’s telescopic observations of the moon and by his mechanistic physics.

For Galileo, the universe was a “grand book which . . . is written in the language of mathematics.
and its characters are triangles, circles, and other geometric figures without which it is humanly impossible to understand a single word of it.² In the tradition of Plato, Galileo sought to grasp the mathematical principles governing reality—reality was physical nature itself, not Plato’s higher realm, of which nature was only a poor copy—and ascribed to mathematics absolute authority. Like Copernicus and Kepler (see below), he believed that mathematics expresses the harmony and beauty of God’s creation.

**Attack on Authority**

Insisting that physical truth is arrived at through observation, experimentation, and reason, Galileo strongly denounced reliance on authority. Scholastic thinkers, who dominated the universities, regarded Aristotle as the supreme authority on questions concerning nature, and university education was based on his works. These doctrinaire Aristotelians angered Galileo, who protested that they sought truth not by opening their eyes to nature and new knowledge but by slavishly relying on ancient texts. In *Dialogue Concerning the Two Chief World Systems—Ptolemaic and Copernican* (1632), Galileo upheld the Copernican view and attacked the unquestioning acceptance of Aristotle’s teachings.

Galileo also criticized Roman Catholic authorities for attempting to suppress the Copernican theory. He argued that passages from the Bible had no authority in questions involving nature.

A sincere Christian, Galileo never intended to use the new science to undermine faith. What he desired was to separate science from faith so that reason and experience alone would be the deciding factors on questions involving nature. He could not believe that “God who has endowed us with senses, reason and intellect,”³ did not wish us to use these faculties in order to acquire knowledge. He was certain that science was compatible with Scripture rightly understood, that is, allowing for the metaphorical language of Scripture and its disinterest in conveying scientific knowledge. For Galileo, the aim of Scripture was to teach people the truths necessary for salvation, not to instruct them in the operations of nature, which is the task of science.

Galileo’s support of Copernicus aroused the ire of both scholastic philosophers and the clergy, who feared that the brash scientist threatened a world picture that had the support of venerable ancient authorities, Holy Writ, and scholastic tradition. Already traumatized by the Protestant threat, Catholic officials cringed at ideas that might undermine traditional belief and authority.

In 1616, the Congregation of the Index, the church’s censorship organ, condemned the teaching of Copernicanism. In 1633, the aging and infirm Galileo was summoned to Rome. Tried and condemned by the Inquisition, he was ordered to abjure the Copernican theory. Not wishing to bring harm to himself and certain that the truth would eventually prevail, Galileo bowed to the Inquisition. He was sentenced to life imprisonment—mostly house arrest at his own villa near Florence—the *Dialogue* was banned, and he was forbidden to write on Copernicanism. Not until 1820 did the church lift the ban on Copernicanism.

**Johannes Kepler: Laws of Planetary Motion**

Johannes Kepler (1571–1630), a German mathematician and astronomer, combined the Pythagorean-Platonic quest to comprehend the mathematical harmony within nature with a deep commitment to Lutheran Christianity. He contended that God gave human beings the ability to understand the laws of harmony and proportion.

As a true Pythagorean, Kepler yearned to discover the geometric harmony of the planets—what he called the “music of the spheres.” Such knowledge, he believed, would provide supreme insight into God’s mind. No doubt this mystical quality sparked the creative potential of his imagination, but to be harnessed for science, it had to be disciplined by the rational faculties.

Kepler discovered the three basic laws of planetary motion, which shattered the Ptolemaic cosmology. In doing so, he utilized the data collected by Tycho Brahe, a Danish astronomer, who for twenty years had systematically observed the planets and stars and recorded their positions with far greater accuracy than had ever been done. Kepler sought to fit Tycho’s observations into Copernicus’s heliocentric model.
Kepler’s first law demonstrated that planets move in elliptical orbits—not circular ones, as Aristotle and Ptolemy (and Copernicus) had believed—and that the sun is one focus of the ellipse. This discovery that a planet’s path was one simple oval eliminated all the epicycles that had been used to preserve the appearance of circular motion. Kepler’s second law showed that planets do not move at uniform speed, as had been believed, but accelerate as they near the sun, and he provided the rule for deciphering a planet’s speed at each point in its orbit. His third law drew a mathematical relationship between the time it takes a planet to complete its orbit of the sun and its average distance from the sun. On the basis of these laws, one could calculate accurately a planet’s position and velocity at a particular time—another indication that the planets were linked together in a unified mathematical system.

Derived from carefully observed facts, Kepler’s laws of planetary motion buttressed Copernicanism, for they made sense only in a heliocentric universe. But why did the planets move in elliptical orbits? Why did they not fly off into space or crash into the sun? To these questions Kepler had no satisfactory answers. It was Isaac Newton (1642–1727), the great British mathematician-scientist, who arrived at a celestial mechanics that linked the astronomy of Copernicus and Kepler with the physics of Galileo and accounted for the behavior of planets.

**The Newtonian Synthesis**

The publication in 1687 of Isaac Newton’s *Mathematical Principles of Natural Philosophy* marks the climax of the Scientific Revolution. Newton postulated three laws of motion that joined all celestial and terrestrial objects into a vast mechanical system, whose parts worked in perfect harmony and whose connections could be expressed in mathematical terms, and he invented the calculus, which facilitated the expression of physical laws in mathematical equations. Since Copernican astronomy was essential to his all-encompassing theory of the universe, Newton provided mathematical proof for the heliocentric system, and opposition to it dissipated.

Newton’s first law is the principle of inertia: that a body at rest remains at rest unless acted on by a force and that a body in rectilinear motion continues to move in a straight line at the same velocity unless a force acts on it. A moving body does not require a force to keep it in motion, as ancient and medieval thinkers had believed. Once started, bodies continue to move; motion is as natural a condition as rest. Newton’s second law states that a given force produces a measurable change in a body’s velocity; a body’s change of velocity is proportional to the force acting on it. Newton’s third law holds that for every action or force there is an equal and opposite reaction or force. The sun pulls the earth with the same force that the earth exercises on the sun. An apple falling to the ground is being pulled by the earth, but the apple is also pulling the earth toward it. (However, since the mass of the apple is so small in comparison with that of the earth, the force that the apple exercises on the earth causes no visible change in the earth’s motion.)

Newton asserted that the same laws of motion and gravitation that operate in the celestial world also govern the movement of earthly bodies. Ordinary mechanical laws explain both why apples fall to the ground and why planets orbit the sun. Both the planet and the apple are subject to the same force, and the very same mathematical formula describes the sun’s action on a planet and the earth’s pull on an apple. Newtonian physics ended the medieval division of the cosmos into higher and lower worlds, with different laws operating in each realm. The universe is an integrated, harmonious mechanical system held together by the force of gravity. By demonstrating that the universe contains an inherent mathematical order, Newton realized the Pythagorean and Platonic visions. To his contemporaries, it seemed that Newton had unraveled all of nature’s mysteries: the universe was fully explicable. It was as if Newton had penetrated God’s mind.

Deeply committed to Anglican Christianity, Newton retained a central place for God in his world system. God for him was the grand architect whose wisdom and skill accounted for nature’s magnificent clockwork design. Newton also believed that God periodically intervened in his creation to restore energy to the cosmic system and that there was no conflict between divine miracles and a mechanical universe. However, in future generations, thinkers called deists (see upcoming
section “Christianity Assailed: The Search for a Natural Religion”) came to regard miracles as incompatible with a universe governed by impersonal mechanical principles.

With his discovery of the composition of light, Newton also laid the foundation of the science of optics. He was a cautious experimentalist who valued experimental procedures, including drawing appropriate conclusions from accumulated data. Both Newton’s mechanical universe and his championing of the experimental method were basic premises of the Age of Enlightenment.

**Prophets of Modern Science**

The accomplishments of the Scientific Revolution extended beyond the creation of a new model of the universe. They also included the formulation of a new method of inquiry into nature and the recognition that science could serve humanity. Two thinkers instrumental in articulating the implications of the Scientific Revolution were Francis Bacon and René Descartes. Both repudiated the authority of Aristotle and other ancients in scientific matters and urged the adoption of new methods for seeking and evaluating truth.

**Francis Bacon: The Inductive Method**

Sir Francis Bacon (1561–1626), an English statesman and philosopher, vigorously supported the advancement of science and the scientific method. Although he himself had no laboratory and made no discoveries, his advocacy of the scientific method has earned him renown as a prophet of modern science. Bacon attributed the limited progress of science over the ages to the interference of scholastic philosophers, who sought to bend theories of nature to the requirements of Scripture. Bacon also denounced scholastic thinkers for their slavish attachment to Aristotelian doctrines, which prevented independent thinking and the acquisition of new information about nature. To acquire new knowledge and improve the quality of human life, said Bacon, we should not depend on ancient texts: old authorities must be discarded, and knowledge must be pursued and organized in a new way.

The method that Bacon advocated as the way to truth and useful knowledge was the inductive approach: careful observation of nature and the systematic accumulation of data, drawing general laws from the knowledge of particulars, and testing these laws through constant experimentation. People committed to such a method would never subscribe to inherited fables and myths about nature or invent new ones. Rather, they would investigate nature directly and base their conclusions on observable facts. In his discovery of the circulation of blood, Bacon’s contemporary, British physician William Harvey (1578–1657), successfully employed the inductive method championed by Bacon. Grasping the essential approach of modern natural science, Bacon attacked practitioners of astrology, magic, and alchemy for their errors, secretiveness, and enigmatic writings and urged instead the pursuit of cooperative and methodical scientific research that could be publicly criticized.

Bacon was among the first to appreciate the value of the new science for human life. Knowledge, he said, should help us utilize nature for human advantage; it should improve the quality of human life by advancing commerce, industry, and agriculture. Holding that knowledge is power, Bacon urged the state to found scientific institutions and praised progress in technology and the mechanical arts. In Bacon’s transvaluation of values, the artisan, mechanic, and engineer advanced knowledge more and contributed more to human betterment than did philosopher-theologians who constructed castles in the air.

**René Descartes: The Deductive Method**

The scientific method encompasses two approaches to knowledge that usually complement each other: the empirical (inductive) and the rational (deductive). In the inductive approach, which is employed in such descriptive sciences as biology, anatomy, and geology, general principles are derived from the analysis of data collected through observation and experiment. The essential features of the inductive method, as we have seen, were championed by Bacon, who regarded sense data as the foundation of knowledge. In the
deductive approach, which is employed in mathematics and theoretical physics, truths are derived in successive steps from first principles, indubitable axioms. In the seventeenth century, the deductive method was formulated by René Descartes (1596–1650), a French mathematician and philosopher, who is also regarded as the founder of modern philosophy.

In the *Discourse on Method* (1637), Descartes expressed his disenchantment with the learning of his day. Since much of what he had believed on the basis of authority had been shown to be untrue, Descartes resolved to seek no knowledge other than that which he might find within himself or within nature. Rejecting as absolutely false anything about which he could have the least doubt, Descartes searched for an incontrovertible truth that could serve as the first principle of knowledge, the basis of an all-encompassing philosophical system.

Descartes found one truth to be certain and unshakable: that it was he who was doing the doubting and thinking. In his dictum “I think therefore I am,” Descartes had his starting point of knowledge. Descartes is viewed as the founder of modern philosophy because he called for the individual to question and if necessary to overthrow all traditional beliefs, and he proclaimed the mind’s inviolable autonomy and importance, its ability and right to know truth. His assertions about the power of thought made people aware of their capacity to comprehend the world through their own mental powers.

Descartes saw the method used in mathematics as the most reliable avenue to certain knowledge. By applying mathematical reasoning to philosophical problems, we can achieve the same certainty and clarity evidenced in geometry. Mathematics is the key to understanding both the truths of nature and the moral order underlying human existence. The mathematical, or deductive, approach favored by Descartes consists of finding a self-evident principle, an irrefutable premise, such as a geometric axiom, and then deducing other truths from it through a chain of logical reasoning. The Cartesian deductive method, with its mathematical emphasis, perfectly complements Bacon’s inductive approach, which stresses observation and experimentation. The scientific achievements of modern times have stemmed from the skillful synchronization of induction and deduction.

**The Meaning of the Scientific Revolution**

The radical transformation of our conception of the physical universe produced by the Scientific Revolution ultimately transformed our understanding of the individual, society, and the purpose of life. The Scientific Revolution, therefore, was a decisive factor in the shaping of the modern world. It destroyed the medieval world-view, in which the earth occupied the central position, heaven lay just beyond the fixed stars, and every object had its place in a hierarchical and
The conception of reason advanced by Galileo and other thinkers of the period differed fundamentally from that of medieval scholastics. Scholastic thinkers viewed reason as a useful aid for contemplating divine truth; as such, reason always had to serve theology. Influenced by the new scientific spirit, thinkers now saw the investigation of nature as reason’s principal concern. What is more, they viewed this activity as autonomous and not subject to theological authority.

The Scientific Revolution fostered a rational and critical spirit among the intellectual elite. Descartes’s methodical doubt, rejection of authority, and insistence on the clarity, precision, and accuracy of an idea and Francis Bacon’s insistence on verification pervaded the outlook of the eighteenth-century Enlightenment thinkers; they denounced magic, spells, demons, witchcraft, alchemy, and astrology as vulgar superstitions. Phenomena attributed to occult forces, they argued, could be explained by reference to natural forces. A wide breach opened up between the intellectual elite and the masses, who remained steeped in popular superstitions and committed to traditional Christian dogma.

The creators of modern science had seen no essential conflict between traditional Christianity and the new view of the physical universe and made no war on the churches. Indeed, they believed that they were unveiling the laws of nature instituted by God at the Creation—that at last the human mind could comprehend God’s magnificent handiwork. But the new cosmology and new scientific outlook ultimately weakened traditional Christianity, for it dispensed with miracles and the need for God’s presence.

The new critical spirit led the thinkers of the Enlightenment to doubt the literal truth of the Bible and to dismiss miracles as incompatible with what science teaches about the regularity of nature. So brilliantly had God crafted the universe, they said, so exquisite a mechanism was nature, that its operations did not require God’s intervention. In the generations after the Scientific Revolution, theology, long considered the highest form of contemplation, was denounced as a barrier to understanding or even dismissed as irrelevant, and the clergy rapidly lost their position as the arbiters of knowledge. To many intellectuals, theology seemed sterile and profitless in comparison with the new science. Whereas science promised the certitude of mathematics, theologians seemed to quibble endlessly over unfathomable and,
even worse, inconsequential issues. That much blood had been spilled over these questions discredited theology still more. In scientific academies, in salons, and in coffee houses, educated men and some women met to discuss the new ideas, and journals published the new knowledge for eager readers. European culture was undergoing a great transformation, marked by the triumph of a scientific and secular spirit among the intellectual elite.

The Scientific Revolution repudiated reliance on Aristotle, Ptolemy, and other ancient authorities in matters concerning nature and substituted in their place knowledge derived from observation, experimentation, and mathematical thinking. Citing an ancient authority was no longer sufficient to prove a point or win an argument. The new standard of knowledge derived from experience with the world, not from ancient texts or inherited views. This new outlook had far-reaching implications for the Age of Enlightenment. If the authority of ancient thinkers regarding the universe could be challenged, could not inherited political beliefs be challenged as well—for example, the divine right of kings to rule? Impressed with the achievements of science, many intellectuals started to urge the application of the scientific method to all fields of knowledge.

The new outlook generated by the Scientific Revolution served as the foundation of the Enlightenment. The Scientific Revolution gave thinkers great confidence in the power of the mind, which had discovered nature’s laws, reinforcing the confidence in human abilities expressed by Renaissance humanists. In time, it was believed, the scientific method would unlock all nature’s secrets, and humanity, gaining ever greater knowledge and control of nature, would progress rapidly.

THE AGE OF ENLIGHTENMENT:
AFFIRMATION OF REASON
AND FREEDOM

The Enlightenment of the eighteenth century was the culmination of the movement toward modernity initiated by the Renaissance. The thinkers of the Enlightenment, called *philosophes*, aspired to create a more rational and humane society. To attain this goal, they attacked medieval otherworldliness, rejected theology as an avenue to truth, denounced the Christian idea of people’s inherent depravity, and sought to understand nature and society through reason alone, unaided by revelation or priestly authority. Adopting Descartes’s method of systematic doubt, they questioned all inherited opinions and traditions. “We think that the greatest service to be done to men,” said Denis Diderot, “is to teach them to use their reason, only to hold for truth what they have verified and proved.”

The philosophes believed that they were inaugurating an enlightened age. Through the power of reason, humanity was at last liberating itself from the fetters of ignorance, superstition, and despotism with which tyrants and priests had bound it in past ages. Paris was the center of the Enlightenment, but there were philosophes and adherents of their views in virtually every leading city in western Europe and North America.

In many ways, the Enlightenment grew directly out of the Scientific Revolution. The philosophes sought to expand knowledge of nature and to apply the scientific method to the human world in order to uncover society’s defects and to achieve appropriate reforms. Newton had discovered universal laws that explained the physical phenomena. Are there not general rules that also apply to human behavior and social institutions? asked the philosophes. Could a “science of man” be created that would correspond to and complement Newton’s science of nature—that would provide clear and certain answers to the problems of the social world in the same way that Newtonian science had solved the mysteries of the physical world?

By relying on the same methodology that Newton had employed to establish certain knowledge of the physical universe, the philosophes hoped to arrive at the irrefutable laws that operated in the realm of human society. They aspired to shape religion, government, law, morality, and economics in accordance with these natural laws. They believed that all things should be reevaluated to see if they accorded with nature and promoted human well-being.

In championing the methodology of science, the philosophes affirmed respect for the mind’s capacities and for human autonomy. Individuals are self-governing, they insisted. The mind is self-sufficient; rejecting appeals to clerical or princely authority, it relies on its own ability to think, and it trusts the evidence of its own experience. Rejecting the authority of tradition, the philosophes wanted people to have
the courage to break with beliefs and institutions that did not meet the test of reason and common sense and to seek new guideposts derived from experience and reason unhindered by passion, superstition, dogma, and authority. The numerous examples of injustice, inhumanity, and superstition in society outraged the philosophes. Behind their devotion to reason and worldly knowledge lay an impassioned moral indignation against institutions and beliefs that degraded human beings.

CHRISTIANITY ASSAILED: THE SEARCH FOR A NATURAL RELIGION

The philosophes waged an unremitting assault on traditional Christianity, denouncing it for harboring superstition, promulgating unreason, and fostering fanaticism and persecution. Relying on the facts of experience, as Bacon had taught, the philosophes dismissed miracles, angels, and devils as violations of nature’s laws and figments of the imagination, which could not be substantiated by the norms of evidence. Applying the Cartesian spirit of careful reasoning to the Bible, they pointed out flagrant discrepancies between various biblical passages and rejected as preposterous the theologians’ attempts to resolve these contradictions. David Hume (1711–1776), the Scottish skeptic, wrote in *The Natural History of Religion* (1757):

Examine the religious principles, which have, in fact, prevailed in the world. You will scarcely be persuaded, that they are anything but sick men’s dreams: Or perhaps will regard them more as the playsome, whimsies of monckies in human shape, than the serious, positive, dogmatical asseverations of a being, who dignifies himself with the name rational. . . . No theological absurdities so glaring that they have not, sometimes, been embraced by men of the greatest and most cultivated understanding.

With science as an ally, the philosophes challenged Christianity’s claim that it possessed infallible truths, and they ridiculed theologians for wrangling over pointless issues and for compelling obedience to doctrines that defied reason.

Moreover, the philosophes assailed Christianity for viewing human nature as evil and human beings as helpless without God’s assistance, for focusing on heaven at the expense of human happiness on earth, and for impeding the acquisition of useful knowledge by proclaiming the higher authority of dogma and revelation. Frightened and confused by religion, people have been held in subjection by clergy and tyrants, the philosophes argued. To establish an enlightened society, clerical power must be broken, Christian dogmas repudiated, and the fanaticism that produced tortures, burnings, and massacres

THE INQUISITION. In one of the first histories of all the world’s religions (published in 1723), the engraver Bernard Picart depicted the Inquisition as cold and ruthlessly interrogating (top panel), then as barbarous in its use of torture; at the bottom center is the practice of water-boarding. (*Bibliothèque des Arts Decoratifs, Paris, France/Archives Charment/The Bridgeman Art Library*)
purged from the European soul. The philosophes broke with the Christian past, even if they retained the essential elements of Christian morality.

François Marie Arouet (1694–1778), known to the world as Voltaire, was the recognized leader of the French Enlightenment. Few of the philosophes had a better mind, and none had a sharper wit. Living in exile in Britain in the late 1720s, Voltaire acquired a great admiration for English liberty, commerce, science, and religious toleration. Voltaire's angriest words were directed against established Christianity, to which he attributed many of the ills of French society. He regarded Christianity as “the Christ-worshiping superstition,” which someday would be destroyed “by the weapons of reason.” Many Christian dogmas are incomprehensible, said Voltaire, yet Christians have slaughtered one another to enforce obedience to these doctrines. Voltaire was appalled by all the crimes committed in the name of Christianity.6

While some philosophes were atheists, most were deists, including Voltaire and Thomas Paine (1737–1809), the English-American radical. Deists sought to fashion a natural religion that accorded with reason and science, and they tried to adapt the Christian tradition to the requirements of the new science. They denied that the Bible was God’s revelation, rejected clerical authority, and dismissed Christian mysteries, prophecies, and miracles—the virgin birth, Jesus walking on water, the Resurrection, and others—as violations of a lawful natural order. They did consider it reasonable that this magnificently structured universe, operating with clockwork precision, was designed and created at a point in time by an all-wise Creator. But in their view, once God had set the universe in motion, he refrained from interfering with its operations. Thus, deists were at odds with Newton, who allowed for divine intervention in the world.

For deists, the essence of religion was morality—a commitment to justice and humanity—and not adherence to rituals, doctrines, or clerical authority. In The Age of Reason (1794–1795), Paine declared: “I believe in the equality of man; and I believe that religious duties consist in doing justice, loving mercy, and endeavoring to make our fellow-creatures happy.”7 Deists deemed it entirely reasonable that after death those who had fulfilled God’s moral law would be rewarded, while those who had not would be punished.

**Political Thought**

Besides established religion, the philosophes identified another source of the evil that beset humanity: despotism. If human beings were to achieve happiness, they had to extirpate revealed religion and check the power of their rulers. “Every age has its dominant idea,” wrote Diderot; “that of our age seems to be Liberty.”8 Eighteenth-century political thought is characterized by a thoroughgoing secularism; an indictment of despotism, the divine right of kings, and the special privileges of the aristocracy and the clergy; a respect for English constitutionalism because it enshrined the rule of law; and an affirmation of John Locke’s theory that government had an obligation to protect the natural rights of its citizens. Central to the political outlook of the philosophes was the conviction that political solutions could be found for the ills that afflicted society.

In general, the philosophes favored constitutional government that protected citizens from the abuse of power. With the notable exception of Rousseau, the philosophes’ concern for liberty did not lead them to embrace democracy, for they put little trust in the masses. Several philosophers, notably Voltaire, placed their confidence in reforming despots, like Frederick II of Prussia, who were sympathetic to enlightened ideas. However, the philosophes were less concerned with the form of government—monarchy or republic—than with preventing the authorities from abusing their power.

**Seventeenth-Century Antecedents:**

**Hobbes and Locke**

The political thought of the Enlightenment was greatly affected by the writings of two seventeenth-century English philosophers: Thomas Hobbes (1588–1679) and John Locke (1632–1704). Hobbes witnessed the agonies of the English civil war, including the execution of Charles I in 1649. These developments fortified his conviction that absolutism was the most desirable and logical form of government. Only the unlimited power of a sovereign, Hobbes wrote in his major work Leviathan (1651), could contain the human passions that disrupt the social order and threaten civilized life; only absolute rule could provide an environment secure enough for people to pursue their individual interests.
Influenced by the new scientific thought that saw mathematical knowledge as the avenue to truth, Hobbes aimed at constructing political philosophy on a scientific foundation and rejected the authority of tradition and religion as inconsistent with a science of politics. Thus, although Hobbes supported absolutism, he dismissed the idea advanced by other theorists of absolutism that the monarch’s power derived from God. He also rejected the view of medieval theorists that the state, which belonged to a lower temporal order, was subordinate to the commands of a higher spiritual realm and its corollary that the state should not be obeyed when it violates God’s law. Like Machiavelli, Hobbes made no attempt to fashion the earthly city in accordance with Christian teachings. As an astute observer of contemporary affairs, Hobbes, of course, recognized religion’s importance in European political life. However, his view of human nature and human life rested on no religious presuppositions. Religious thinkers frequently denounced Hobbes as a heretic, if not an atheist. *Leviathan* is a rational and secular political statement; its significance lies in its modern approach, rather than in Hobbes’s justification of absolutism.

Hobbes had a pessimistic view of human nature. Believing that people are innately selfish and grasping, he maintained that competition and dissension, rather than cooperation, characterize human relations. Without a stringent authority to make and enforce law, life would be miserable, a war of every man against every man, he said. Therefore, he prescribed a state with unlimited power, since only in this way could people be protected from one another and civilized life preserved. Although the philosophers generally rejected Hobbes’s gloomy view of human nature, they embraced his secular approach to politics, particularly his denunciation of the theory of the divine right of kings. Hobbes’s concern with protecting the social order from human antisocial tendencies is still a central consideration of modern political life.

In contrast to Hobbes, John Locke saw people as essentially good and humane and developed a conception of the state that was fundamentally different from Hobbes’s. In the *Two Treatises of Government* (1690), Locke maintained that human beings are born with natural rights to life, liberty, and property, and they establish the state to protect these rights. Consequently, neither executive nor legislature—neither king nor assembly—has the authority to deprive individuals of their natural rights. Whereas Hobbes justified absolute monarchy, Locke explicitly endorsed constitutional government, in which the power to govern derives from the consent of the governed and the state’s authority is limited by agreement. Rulers hold their authority under the law; when they act outside the law, they forfeit their right to govern. Thus, if government fails to fulfill the end for which it was established—the preservation of the individual’s right to life, liberty, and property—the people have a right to dissolve that government.

Both Hobbes and Locke agreed that the state exists in order to ensure the tranquillity, security, and well-being of its citizens. However, they proposed radically different ways of attaining this end. Unlike Hobbes, Locke believed that social well-being encompassed personal freedom. Rejecting Hobbes’s view that absolute power can remedy the defects of the state of nature, Locke stated the case for limited government, the rule of law, the protection of fundamental human rights, and the right of resistance to arbitrary power. Underlying Locke’s conception of the state is the conviction that people have the capacity for reason and freedom, and that political life can be guided by rational principles: “We are born Free as we are born Rational.”

The value that Locke gave to reason and freedom and his theories of natural rights, the rule of law, and the right to resist despotical authority had a profound effect on the Enlightenment and the liberal revolutions of the late eighteenth and early nineteenth centuries. Thus, in the Declaration of Independence, Thomas Jefferson restated Locke’s principles to justify the American Revolution. Locke’s tenets that property is a natural right and that state interference with personal property leads to the destruction of liberty also became core principles of modern liberalism.

Montesquieu

The contribution of Charles Louis de Secondat, baron de la Brède et de Montesquieu (1689–1755), to political theory rests essentially on his *Spirit of the Laws* (1748), a work of immense erudition covering many topics. Montesquieu held that the study of political and social behavior is not an exercise in abstract thought but must be undertaken in relation to geographic, economic, and historic conditions. To this end, Montesquieu accumulated and classified a wide diversity of facts, from which he tried to draw general rules governing society. He concluded that
different climatic and geographic conditions and different national customs, habits, religions, and institutions give each nation a particular character; each society requires constitutional forms and laws that pay heed to the character of its people. Montesquieu’s effort to explain social and political behavior empirically—to found a science of society based on the model of natural science—makes him a forerunner of modern sociology.

Montesquieu regarded despotism as a pernicious form of government, corrupt by its very nature. Ruling as he wishes and unchecked by law, the despot knows nothing of moderation and institutionalizes cruelty and violence. The slavelike subjects, wrote Montesquieu, know only servitude, fear, and misery. Driven by predatory instincts, the despototic ruler involves his state in wars of conquest, caring not at all about the suffering this causes his people. In a despotic society, economic activity stagnates, for merchants, fearful that their goods will be confiscated by the state, lose their initiative. Reformers used Montesquieu’s characterization of despotism to show the limitations of absolute monarchy.

To safeguard liberty from despotism, Montesquieu advocated the principle of separation of powers. In every government, said Montesquieu, there are three sorts of powers: legislative, executive, and judiciary. When one person or one body exercises all three powers—if the same body both prosecutes and judges, for example—liberty cannot be preserved. Where sovereignty is monopolized by one person or body, power is abused and political liberty is denied. In a good government, one power balances and checks another power, an argument that impressed the framers of the U.S. Constitution.

Several of Montesquieu’s ideals were absorbed into the liberal tradition—constitutional government and the rule of law, separation of powers, freedom of thought, religious toleration, and protection of individual liberty. The conservative tradition drew on Montesquieu’s respect for traditional ways of life and his opposition to sudden reforms that ignored a people’s history and culture.

Voltaire

Unlike Hobbes and Locke, Voltaire was not a systematic political theorist, but a propagandist and polemicist, who hurled pointed barbs at all the abuses of the French society. Nevertheless, Voltaire’s writings do contain ideas that form a coherent political theory that in many ways expresses the outlook of the Enlightenment.

Voltaire disdained arbitrary power, since it is based on human whim rather than on established law. He described a prince who imprisons or executes his subjects unjustly and without due process as “nothing but a highway robber who is called ‘Your Majesty.’” For Voltaire, freedom consisted in being governed by an established and standard code of law that applies equally to all. Without the rule of law, wrote Voltaire, there is no liberty of person, no freedom of thought or of religion, no protection of personal property, no...
impartial judiciary, and no protection from arbitrary arrest. Underlying Voltaire’s commitment to the rule of law was his conviction that power should be used rationally and beneficially.

Voltaire’s respect for the rule of law was strengthenened by his stay in England between 1726 and 1729, which led to the publication of *The English Letters* in 1733. In this work, Voltaire presents an idealized and, at times, inaccurate picture of English politics and society. More important, however, is the fact that his experience with English liberty gave him hope that a just and tolerant society was not a utopian dream, thereby strengthening his resolve to attack the abuses of French society.

As noted earlier, Voltaire was no democrat. He had little confidence in the capacities of the common people, whom he saw as prone to superstition and fanaticism. Nor did he advocate revolution. What he did favor was reforming society through the advancement of reason and the promotion of science and technology. Voltaire himself fought to introduce several reforms into France, including freedom of the press, religious toleration, a fair system of criminal justice, proportional taxation, and curtailment of the privileges of the clergy and nobility.

**Rousseau**

“Man is born free and everywhere he is in chains.”10 With these stirring words, the Geneva-born French thinker Jean Jacques Rousseau (1712–1778) began *The Social Contract* (1762). Rousseau considered the state as it was then constituted to be unjust and corrupt. It was dominated by the rich and the powerful, who used it to further their interests, whereas the weak knew only oppression and misery. In Rousseau’s view, the modern state deprived human beings of their natural freedom and fostered a selfish individualism, which undermined feelings of mutuality and concern for the common good.

Rousseau wanted the state to be a genuine democracy, a moral association that bound people together in freedom, equality, and civic devotion. For Rousseau, individuals fulfilled their moral potential not in isolation, but as committed members of the community; human character was ennobled when people cooperated with one another and cared for one another. Rousseau admired the ancient Greek city-state, the polis, for it was an organic community in which citizens set aside private interests in order to attain the common good. In *The Social Contract*, he sought to re-create the community spirit and the political freedom that characterized the Greek city-state.

What Rousseau proposed was that each person surrender unconditionally all his rights to the community as a whole and submit to its authority. To prevent the assertion of private interests over the common good, Rousseau wanted the state to be governed in accordance with the general will—an underlying principle that expressed what was best for the community. He did not conceive of the general will as a majority or even a unanimous vote, both of which could be wrong. Rather, it was a plainly visible truth, easily discerned by common sense and by reason and by listening to our hearts. In Rousseau’s view, just and enlightened citizens imbued with public spirit would have the good sense and moral awareness to legislate in accordance with the general will.
Like ancient Athens, the state that Rousseau envisioned was a direct democracy, in which the citizens themselves, not their representatives, constituted the lawmaking body. Consequently, the governed and the government were one and the same. Rousseau condemned arbitrary and despotic monarchy, the divine-right theory of kingship, and the traditional view that people should be governed by their betters, lords and clergy, who were entitled to special privileges. He granted sovereignty to the people as a whole and affirmed the principle of equality.

Rousseau remains a leading theorist of democratic thought. His critics assert that his political thought, whose goal is a body of citizens who think alike, buttresses a dangerous collectivism and even totalitarianism. These critics argue that Rousseau did not place constitutional limitations on sovereignty or erect safeguards to protect individual and minority rights from a potentially tyrannical majority. They note, too, that Rousseau rejected entirely the Lockean principle that citizens possess rights independently of the state, as well as the right to act against the state.

Social and Economic Thought

The philosophes rejected the Christian belief that human beings are endowed with a sinful nature, a consequence of Adam and Eve’s disobedience of God. They knew from experience, of course, that human beings behave wickedly and seem hopelessly attached to nonrational modes of thinking. While they retained a certain pessimism about human nature, however, the philosophes generally believed in individuals’ essential goodness and in their capacity for moral improvement. “Nature has not made us evil,” wrote Diderot, “it is bad education, bad models, bad legislation that corrupt us.” And Voltaire declared that a person is “born neither good nor wicked; education, example, the government into which he is thrown—in short, occasion of every kind—determines him to virtue or vice.” The philosophes’ conception of human nature rested heavily on John Locke’s epistemology, or theory of knowledge. To the philosophes, it seemed that Locke had discovered the fundamental principles governing the human mind, an achievement comparable to Newton’s discovery of the laws governing physical bodies.

Epistemology, Psychology, and Education

In his Essay Concerning Human Understanding (1690), a work of immense significance in the history of philosophy, Locke argued that human beings are not born with innate ideas (the idea of God, principles of good and evil, and rules of logic, for example) divinely implanted in their minds, as Descartes had maintained. Rather, said Locke, the human mind is a blank slate upon which are imprinted sensations derived from contact with the phenomenal world. Knowledge is derived from experience.

Locke’s theory of knowledge had profound implications. If there are no innate ideas, said the philosophers, then human beings, contrary to Christian doctrine, are not born with original sin, are not depraved by nature. All that individuals are derives from their particular experiences. If people are provided with a proper environment and education, they will behave morally; they will become intelligent and productive citizens. By the proper use of their reason, people could bring their beliefs, their conduct, and their institutions into harmony with natural law. This was how the reform-minded philosophes interpreted Locke. They preferred to believe that evil stemmed from faulty institutions and poor education, both of which could be remedied, rather than from a defective human nature.

The most important work of Enlightenment educational thought was Rousseau’s Émile (1762), in which he suggested educational reforms that would instill in children self-confidence, self-reliance, and emotional security—necessary qualities if they were to become productive adults and responsible citizens. If the young are taught to think for themselves, said Rousseau, they will learn to cherish personal freedom. A strong faith in the essential goodness of human nature underlay Rousseau’s educational philosophy. He also assumed that youngsters have an equal capacity to learn and that differences in intelligence are due largely to environmental factors.

Rousseau understood that children should not be treated like little adults, for children have their own ways of thinking and feeling. He railed against those who robbed children of the joys and innocence of childhood by chaining them to desks, ordering them about, and filling their heads with rote learning. Instead, he urged that children experience direct contact with the environment to develop their
bodies and senses and their curiosity, ingenuity, resourcefulness, and imagination. It is the whole child that concerns Rousseau.

Freedom of Conscience and Thought

The philosophes regarded religious persecution—whose long and bloodstained history included the burning of heretics in the Middle Ages, the slaughter of Jews and Muslims during the First Crusade, and the massacres of the wars of the Reformation—as humanity’s most depraved offense against reason. While the worst excesses of religious fanaticism had dissipated by the eighteenth century, examples of religious persecution still abounded, particularly in Catholic lands. In his pleas for tolerance, Voltaire spoke for all the philosophes:

I shall never cease . . . to preach tolerance from the housetops . . . until persecution is no more. The progress of reason is slow, the roots of prejudice lie deep. Doubtless, I shall never see the fruits of my efforts, but they are seeds which may one day germinate.13

Censorship was a serious and ever-present problem for the philosophes. After the publication of Voltaire’s English Letters, his printer was arrested and the book confiscated and publicly burned as irreligious. On another occasion, when Voltaire was harassed by the authorities, he commented that “it is easier for me to write books than to get them published.”14 Denounced by ecclesiastical and ministerial authorities as a threat to religion and constituted authority, On the Mind (1758), by Claude-Adrien Helvetius (1715–1771), was burned by the public executioner. Denis Diderot (1713–1784), the principal editor of the thirty-eight-volume Encyclopedia, whose 150 or more contributors included the leading Enlightenment thinkers, had to contend with French authorities, who at times suspended publication. After the first two volumes appeared, the authorities condemned the work for containing “maxims that would tend to destroy royal authority, foment a spirit of independence and revolt . . . and lay the foundations for the corruption of morals and religion.”15 In 1759, Pope Clement XIII condemned the Encyclopedia for having “scandalous doctrines [and] inducing scorn for religion.”16 It required careful diplomacy and clever ruses to finish the project and still incorporate ideas considered dangerous by religious and governmental authorities. The Encyclopedia had been undertaken in Paris during the 1740s as a monumental effort to bring together all human knowledge and to propagate Enlightenment ideas. Its numerous articles on science and technology and its limited coverage of theological questions attest to the new interests of eighteenth-century intellectuals. With the project’s completion in 1772, Diderot and Enlightenment opinion triumphed over clerical, royal, and aristocratic censors.

An article in the Encyclopedia, “The Press,” conveys the philosophes’ yearning for freedom of thought and expression. For them, the term press designated more than newspapers and journals; it encompassed everything in print, particularly books.

People ask if freedom of the press is advantageous or prejudicial to a state. The answer is not difficult. It is of the greatest importance to conserve this practice in all states founded on liberty. I would even say that the disadvantages of this liberty are so inconsiderable compared to the advantages that this ought to be the common right of the universe, and it is certainly advisable to authorize its practices in all governments.17

Humanitarianism

A humanitarian spirit, which no doubt owed much to Christian compassion, pervaded the outlook of the philosophers. It expressed itself in attacks on torture, which was commonly used to obtain confessions in many European lands, on cruel punishments for criminals, on slavery, and on war. The philosophes’ humanitarianism rested on the conviction that human nature was essentially virtuous and that human beings were capable of benevolent feelings toward one another.

In On Crimes and Punishments (1764), Cesare Beccaria (1738–1794), an Italian economist and criminologist inspired in part by Montesquieu, condemned torture as inhuman, “a criterion fit for a
cannibal.” He saw it as an irrational way of determining guilt or innocence, for an innocent person unable to withstand the agonies of torture will confess to anything and a criminal with a high threshold for pain will be exonerated. Influenced by Beccaria’s work, reform-minded jurists, legislators, and ministers called for the elimination of torture from codes of criminal justice, and several European lands abolished torture in the eighteenth century.

Though not pacifists, the philosophes denounced war as barbaric and an affront to reason. They deemed it to be a scourge promoted by power-hungry monarchs and supported by fanatical clergy, wicked army leaders, and ignorant commoners. In his literary masterpiece, Candide (1759), Voltaire ridiculed the rituals of war.

Nothing could be smarter, more splendid, more brilliant, better drawn up than the two armies. Trumpets, fifes, hautboys [oboes], drums, cannons, formed a harmony such as has never been heard even in hell. The cannons first of all laid flat about six thousand men on each side; then the musketry removed from the best of worlds some nine or ten thousand blackguards who infested its surface. The bayonet also was the sufficient reason for the death of some thousands of men. The whole might amount to thirty thousand souls.

Voltaire was particularly outraged by the belief that the outcome of this “heroic butchery” was ordained by God. The article “Peace” in the Encyclopedia described war as

the fruit of man’s depravity; it is a convulsive and violent sickness of the body politic. . . . [It] depopulates the nation, causes the reign of disorder. . . . makes the freedom and property of citizens uncertain . . . disturbs and causes the neglect of commerce; land becomes uncultivated and abandoned. . . . If reason governed men and had the influence over the heads of nations that it deserves, we would never see them inconsiderately surrender themselves to the fury of war; they would not show that ferocity that characterizes wild beasts.

Montesquieu, Voltaire, Hume, Benjamin Franklin, Thomas Paine, and other philosophes condemned slavery and the slave trade. In Book 15 of The Spirit of the Laws, Montesquieu scornfully refuted all justifications for slavery. Ultimately, he said, slavery, which violates the fundamental principle of justice underlying the universe, derived from base human desires to dominate and exploit other human beings. Adam Smith (see next section), the Enlightenment’s leading economic theorist, demonstrated that slave labor was inefficient and wasteful. In 1780, Paine helped draft the act abolishing slavery in Pennsylvania. An article in the Encyclopedia, “The Slave Trade,” denounced slavery as a violation of the individual’s natural rights:

If commerce of this kind can be justified by a moral principle, there is no crime, however atrocious it may be, that cannot be made legitimate. . . . Men and their liberty are not objects of commerce; they can be neither sold nor bought. . . . There is not, therefore, a single one of these unfortunate people regarded only as slaves who does not have the right to be declared free.

The philosophes, although they often enjoyed the company of intelligent and sophisticated women in the famous salons, continued to view women as intellectually and morally inferior to men. Although some philosophes, notably Condorcet (see upcoming section “The Idea of Progress”), who wrote Plea for the Citizenship of Women (1791), did argue for female emancipation, they were the exception. Most retained traditional views, concurring with David Hume, who held that “nature has subjected” women to men and that their “inferiority and infirmities are absolutely incurable.” Rousseau, who also believed that nature had granted men power over women, regarded traditional domesticity as a woman’s proper role.

I would a thousand times rather have a homely girl, simply brought up, than a learned lady and a wit who would make a literary circle of my house and install herself as its president. A female wit is a scourge to her husband, her children, her friends, her servants, to everybody. From the lofty height of her genius, she scorns every womanly duty, and she is always trying to make a man of herself.
Nevertheless, by clearly articulating the ideals of liberty and equality, the philosophes made a women's movement possible. The growing popularity of these ideals could not escape women, who measured their own position by them. Moreover, by their very nature, these ideals were expansive. Denying them to women would ultimately be seen as an indefensible contradiction.

Thus, Mary Wollstonecraft’s *Vindication of the Rights of Woman* (1792), written under the influence of the French Revolution, protested against the prevailing subordination and submissiveness of women and the limited opportunities afforded them to cultivate their minds. If women were also endowed with reason, why should men alone determine the standards and ground rules, she asked pungently. She reminded enlightened thinkers that the same arbitrary power that they objected to when wielded by monarchs and slave owners they condoned when exercised by husbands in domestic life. She considered it an act of tyranny for women “to be excluded from a participation of the natural rights of mankind.”

**Laissez-Faire Economics**

In *An Inquiry into the Nature and Causes of the Wealth of Nations* (1776), Adam Smith (1732–1790), professor of moral philosophy in
Scotland, attacked the theory of mercantilism, which held that a state’s wealth was determined by the amount of gold and silver it possessed. According to this theory, to build up its reserves of precious metals, the state should promote domestic industries, encourage exports, and discourage imports. Mercantilist theory called for government regulation of the economy so that the state could compete successfully with other nations for a share of the world’s scarce resources. Smith argued that the real basis of a country’s wealth was measured by the quantity and quality of its goods and services, not by its storehouse of precious metals. Government intervention, he said, retards economic progress; it reduces the real value of the annual produce of the nation’s land and labor. On the other hand, when people pursue their own interests—when they seek to better their condition—they foster economic expansion, which benefits the whole society.

Smith limited the state’s authority to maintaining law and order, administering justice, and defending the nation. The concept of laissez faire—that government should not interfere with the market—became a core principle of nineteenth-century liberal thought.

The Idea of Progress

“Despite all the efforts of tyranny, despite the violence and trickery of the priesthood, despite the vigilant efforts of all the enemies of mankind,” wrote Baron Paul Henri Holbach, “the human race will attain enlightenment.”

The philosophes were generally optimistic about humanity’s future progress. Two main assumptions contributed to this optimism. First, accepting Locke’s theory of knowledge, the philosophes attributed evil to a flawed but remediable environment, not to an inherently wicked human nature. Hopeful that a reformed environment would bring out the best in people, they looked forward to a day when reason would prevail over superstition, prejudice, intolerance, and tyranny. Second, the philosophes’ veneration of science led them to believe that the progressive advancement of knowledge would promote material and moral progress.

A work written near the end of the century epitomized the philosophes’ vision of the future: Sketch for a Historical Picture of the Progress of the Human Mind (1794) by Marie Jean Antoine Nicolas Caritat, marquis de Condorcet (1743–1794). A mathematician and historian of science and a contributor to the Encyclopedia, Condorcet campaigned for religious toleration and the abolition of slavery. During the French Revolution, he attracted the enmity of the dominant Jacobin party and in 1793 was forced to go into hiding. Secluded in Paris, he wrote Sketch. Arrested in 1794, Condorcet died during his first night in prison, either from exhaustion or from self-administered poison. In Sketch, Condorcet lauded recent advances in knowledge that enabled reason to “lift her chains (and) shake herself free” from superstition and tyranny. Passionately affirming the Enlightenment’s confidence in reason and science, Condorcet expounded a theory of continuous and indefinite human improvement. He pointed toward a future golden age, characterized by the triumph of reason and freedom.

Our hopes for the future condition of the human race can be subsumed under three important heads: the abolition of inequality between nations, the progress of equality within each nation, and the true perfection of mankind... The time will therefore come when the sun will shine only on free men who know no other master but their reason; when tyrants and slaves, priests and their stupid or hypocritical instruments will exist only in works of history and on the stage; and we shall think of them only to pity their victims and their dupes; to maintain ourselves in a state of vigilance by thinking on their excesses; and to learn how to recognize and so to destroy, by force of reason, the first seeds of tyranny and superstition, should they ever dare to reappear amongst us.

But the philosophes were not starry-eyed dreamers. They knew that progress was painful, slow, and reversible. Voltaire’s Candide was a protest against a naive optimism that ignored the granite might of human meanness, ignorance, and
irrationality. “Let us weep and wail over the lot of philosophy,” wrote Diderot. “We preach wisdom to the deaf and we are still far indeed from the age of reason.”

**CONFLICTS AND POLITICS**

The major conflicts of the eighteenth century were between Britain and France for control of territory in the New World and between Austria and Prussia for dominance in central Europe. Then, in the late 1700s, the American and French Revolutions broke out; they helped shape the liberal-democratic tradition.

**Warfare and Revolution**

In 1740, Prussia, ruled by the aggressive Frederick the Great, launched a successful war against Austria and was rewarded with Silesia, which increased the Prussian population by 50 percent. Maria Theresa, the Austrian queen, never forgave Frederick and in 1756 formed an alliance with France against Prussia. The ensuing Seven Years’ War (1756–1763), which involved every major European power, did not significantly change Europe, but it did reveal Prussia’s growing might.

At the same time, the French and the English fought over their claims in the New World. England’s victory in the conflict (known in American history as the French and Indian War) deprived France of virtually all of its North American possessions and set in motion a train of events that culminated in the American Revolution. The war drained the British treasury, and now Britain had the additional expense of paying for troops to guard the new North American territories that it had gained in the war. As strapped British taxpayers could not shoulder the whole burden, the members of Parliament thought it quite reasonable that the American colonists should help pay the bill; after all, Britain had protected the colonists from the French and was still protecting them in their conflicts with Indians. New colonial taxes and import duties imposed by Parliament produced vigorous protests from the Americans.

The quarrel turned to bloodshed in April and June 1775, and on July 4, 1776, delegates from the various colonies adopted the Declaration of Independence, written mainly by Thomas Jefferson. Applying Locke’s theory of natural rights, this document declared that government derives its power from the consent of the governed, that it is the duty of a government to protect the rights of its citizens, and that people have the right to “alter or abolish” a government that deprives them of their “unalienable rights.”

Why were the American colonists so ready to revolt? Each of the thirteen colonies had an elected assembly, which acted like a miniature parliament. In these assemblies, Americans gained political experience and quickly learned to be self-governing.

Familiarity with the thought of the Enlightenment and the republican writers of the English Revolution also contributed to the Americans’ awareness of liberty. The ideas of the philosophes traversed the Atlantic and influenced educated Americans, particularly Thomas Jefferson and Benjamin Franklin. Like the philosophes, American thinkers expressed a growing confidence in reason, valued freedom of religion and of thought, and championed the principle of natural rights.

Another source of hostility toward established authority among the American colonists was their religious traditions, particularly those of the Puritans, who believed that the Bible was infallible and its teachings a higher law than the law of the state. Like their counterparts in England, American Puritans challenged political and religious authorities who, in their view, contravened God’s law. Thus, Puritans acquired two habits that were crucial to the development of political liberty: dissent and resistance. When transferred to the realm of politics, these Puritan tendencies led Americans to resist authority that they considered unjust.

American victory came about in 1783 as a result of several factors. George Washington proved to be a superior leader, able to organize and retain the loyalty of his troops. France, seeking to avenge its defeat in the Seven Years’ War, helped the Americans with money and provisions and then, in 1778, entered the conflict. Britain had difficulty shipping supplies across three thousand miles of ocean, was fighting the French in the West Indies and elsewhere at the same time, and ultimately lacked commitment to the struggle.
Reformers in other lands quickly interpreted the American victory as a successful struggle of liberty against tyranny. During the Revolution, the various American states drew up constitutions based on the principle of popular sovereignty and included bills of rights that protected individual liberty. They also managed, somewhat reluctantly, to forge a nation. Rejecting both monarchy and hereditary aristocracy, the Constitution of the United States created a republic in which power derived from the people. A system of separation of powers and checks and balances set safeguards against the abuse of power, and the Bill of Rights provided for protection of individual rights. To be sure, the ideals of liberty and equality were not extended to all people—slaves knew nothing of the freedom that white Americans cherished, and women were denied the vote and equal opportunity. But to reform-minded Europeans, it seemed that Americans were fulfilling the promise of the Enlightenment; they were creating a freer and better society.

Enlightened Despotism

The philosophes used the term enlightened despotism to refer to an ideal shared by many of them: rule by a strong monarch who would implement rational reforms and remove obstacles to freedom. Some eighteenth-century monarchs and their ministers—Frederick the Great in Prussia, Catherine the Great in Russia, Charles III in Spain, Maria Theresa and, to a greater extent, her son Joseph II in Austria, and Louis XV in France—did institute educational, commercial, and religious reforms.

Behind the reforms of enlightened despotism lay the realization that the struggle for power in Europe called for efficient government administration and ample funds. Enlightened despots appointed capable officials to oversee the administration of their kingdoms, eliminate costly corruption, and collect taxes properly. Rulers strengthened the economy by encouraging the expansion of commerce through reduced taxes on goods and through agricultural reforms. In central and Eastern Europe, some rulers moved toward abolishing serfdom, or at least improving conditions for serfs. (In western Europe, serfdom had virtually died out.) Provisions were made to care for widows, orphans, and invalids. Censorship was eased, greater religious freedom was granted to minorities, criminal codes were made less harsh, and there were some attempts at prison reform. By these measures, enlightened despots hoped to inspire greater popular support for the state, an important factor in the European power struggle.

The Enlightenment and the Modern Mentality

The philosophes articulated core principles of the modern outlook. Asserting that human beings are capable of thinking independently of authority, they insisted on a thoroughgoing rational and secular interpretation of nature and society. They critically scrutinized authority and tradition and valued science and technology as a means for promoting human betterment. Above all, they sought to emancipate the mind from the bonds of ignorance and superstition and to rescue people from intolerance, cruelty, and oppression. Because of their efforts, torture (which states and Christian churches had endorsed and practiced) was eventually abolished in Western lands, and religious toleration and freedom of speech and of the press became the accepted norms. The arguments that the philosophes marshaled against slavery were utilized by those who fought against the slave trade and called for emancipation. Enlightenment economic thought, particularly Adam Smith’s Wealth of Nations, gave theoretical support to a market economy based on supply and demand—an outlook that fostered commercial and industrial expansion. The separation of church and state, a basic principle of modern political life, owes much to the philosophes, who frequently cited the dangers of politics inflamed by religious passions. The philosophes’ denunciation of despotism and championing of natural rights,
equality under the law, and constitutional government are the chief foundations of modern liberal government.

The ideals of the Enlightenment spread from Europe to America and helped shape the political thought of the Founding Fathers. The Declaration of Independence clearly articulated Locke’s basic principles: that government derives its authority from the governed; that human beings are born with natural rights, which government has a responsibility to protect; and that citizens have the right to resist a government that deprives them of these rights. The Constitution asserted that the people are sovereign: “We the People of the United States . . . do ordain and establish this Constitution for the United States of America.” And it contained several safeguards against despotic power, including Montesquieu’s principle of separation of powers, which was also written into several state constitutions. Both the bills of rights drawn up by the various states and the federal Bill of Rights gave recognition to the individual’s inherent rights and explicitly barred government from tampering with them—a principal concern of the philosophes.

The Federalist Papers, the major American contribution to eighteenth-century political thought, in many ways epitomized Enlightenment thinking. It incorporated specific ideas of Locke, Montesquieu, Hume, and the Encyclopedia; analyzed political forms in a rational, secular, and critical spirit; regarded the protection of personal freedom as a principal goal of the state; and expressed a willingness to break with past traditions when they conflicted with good sense. The new American republic, says Peter Gay, was “convincing evidence, to the philosophes . . . that men had some capacity for self-improvement and self-government, that progress might be a reality instead of a fantasy, and that reason and humanity might become governing rather than merely critical principles.”

The philosophes broke with the traditional Christian view of human nature and the purpose of life. In that view, men and women were born in sin; suffering and misery were divinely ordained, and relief could come only from God; social inequality was instituted by God; and for many, eternal damnation was a deserved final consequence. In contrast, the philosophes saw injustice and suffering as man-made problems that could be solved through reason; they expressed confidence in people’s ability to attain happiness by improving the conditions of their earthly existence and articulated a theory of human progress that did not require divine assistance. Rejecting the idea of a static and immutable order of society instituted by God, the philosophes had confidence that human beings could improve the conditions of their existence and they pointed to advances in science and technology as evidence of progress.

Thus, the idea of secular progress, another key element of modernity, also grew out of the Enlightenment. After two world wars and countless other conflicts, after Auschwitz and other examples of state-sponsored mass murder, and with the development of weapons of mass destruction, it is difficult to realize that at the beginning of the twentieth century most westerners were committed to a doctrine of perpetual progress that embodied the hopes of the philosophes.

To be sure, the promise of the Enlightenment has not been achieved. More education for more people and the spread of constitutional government have not eliminated fanaticism and superstition, violence and war, or evil and injustice. In the light of twentieth-century and twenty-first century events, it is difficult to subscribe to Condorcet’s belief in linear progress, that history is inexorably carrying humanity toward a golden age. As Peter Gay observes:

The world has not turned out the way the philosophes wished and half expected that it would. Old fanaticisms have been more intractable, irrational forces more inventive than the philosophes were ready to conjecture in their darkest moments. Problems of race, of class, of nationalism, of boredom and despair in the midst of plenty have emerged almost in defiance of the philosophes’ philosophy. We have known horrors, and may know horrors, that the men of the Enlightenment did not see in their nightmares.
The world-view of the philosophers has come under attack. Building on the critique of early nineteenth-century romantics, critics have accused the philosophers of overvaluing the intellect at the expense of human feelings. According to this view, the philosophers did not recognize the value of the feelings as a source of creativity and did not call for their full development. Rather, they viewed the emotions as impediments to clear thinking that had to be overcome.

Another failing of the philosophers, critics argue, is that they did seek to understand a past age on its own terms but judged it according to preconceived norms, disdaining and rejecting anything that contradicted their idea of truth and their view of the good society. Such an outlook, say the critics, led the philosophers to underestimate the extent to which the past governs the present. Holding with Hume that human nature remains the same in all nations and ages, the philosophers regarded differences between peoples and civilizations as superficial and inconsequential. Since reason was common to humanity, government, law, morality, education, and all other institutions and systems of thought could be based on universal principles and could apply to all peoples throughout the globe regardless of their cultures and history.

In reality, this meant that the outlook of a small party of thinkers would become normative for all peoples and cultures. Such an undervaluing of the complex relationship between past and present, of human diversity, and of the immense appeal of familiar beliefs, traditions, and institutions—even if they seem so blatantly in opposition to reason—promotes the presumptuous and dangerous belief that society and government can be easily and rapidly molded to fit abstract principles and that reformers need pay only scant attention to historically conditioned cultural forms.

The philosophers’ belief in universality, in timeless truths that apply to all peoples at all times, also contains an inherent danger. In politics, it could create true believers totally committed to an abstraction, such as the exploited class or the infallible party. To realize their ideal, these devotees will employ terror and mass murder with a clear conscience. As Isaiah Berlin notes, “Of course, nobody believed in universality more than the Marxists: Lenin, Trotsky, and the others who triumphed saw themselves as disciples of the Enlightenment thinkers, corrected and brought up to date by Marx.”31 Robespierre and the Reign of Terror during the French Revolution might be viewed as an early manifestation of this attempt to make society adhere to a conceptual grid.

Another criticism is that the philosophers’ exuberant view of science and reason prevented them from realizing that reason is a double-edged sword: it could demean as well as ennoble human personality. The philosophers believed that removing thought from the realm of myth and religion and eliminating irrational forms of social organization would foster human emancipation. They could not foresee that modern bureaucracy and technology, both creations of the rational mind, could fashion a social order that devalues and de-personalizes the individual. In its determination to make the social world accord with a theoretical model, rationalism strives for uniformity and efficiency; in the process, it threatens to regulate, organize, and manipulate the individual as it would any material object. Future periods would not only reveal the limitations of reason—its inability to cope with powerful irrational drives and instincts that incite acts of inhumanity—but also the dangers of reason—its capacity to subordinate and sacrifice the individual to theoretical systems, particularly political ideologies.

Nevertheless, despite limitations, the philosophers’ achievement should not be diminished. Their ideals became an intrinsic part of the liberal-democratic tradition and inspired nineteenth- and twentieth-century reformers. The spirit of the Enlightenment will always remain indispensable to all those who cherish the traditions of reason and freedom. Isaiah Berlin, the distinguished historian of ideas, eloquently summed up the Enlightenment’s importance: “the intellectual power, honesty, lucidity, courage, and disinterested love of the truth of the most gifted thinkers of the eighteenth-century remain to this day without parallel. Their age is one of the best and most hopeful episodes in the life of mankind.”32
Primary Source

René Descartes, *Discourse on Method*

In this important work in the history of modern philosophy, Descartes describes his search for truth.

I was brought up from childhood on letters, and because I had been led to believe that by this means one could acquire clear and positive knowledge of everything useful in life, I was extremely anxious to learn them. But, as soon as I had completed this whole course of study, at the end of which it is usual to be received into the ranks of the learned, I completely changed my opinion. For I was assailed by so many doubts and errors that the only profit I appeared to have drawn from trying to become educated, was progressively to have discovered my ignorance. And yet I was at one of the most famous schools in Europe, where I thought there must be learned men, if there were any such anywhere on earth. I had learnt there everything the others learned; and further, not contenting myself merely with the subjects taught, I had gone through all the books I could lay my hands on dealing with the occult and rare sciences... 

I shall say nothing about philosophy, except that, seeing that it has been cultivated by the very best minds which have ever existed over several centuries and that, nevertheless, not one of its problems is not subject to disagreement, and consequently is uncertain, I was not presumptuous enough to hope to succeed in it any better than others; and seeing how many different opinions are sustained by learned men about one item, without its being possible for more than one ever to be true, I took to be tantamount to false everything which was merely probable. ... 

This is why, as soon as I reached an age which allowed me to emerge from the tutelage of my teachers, I abandoned the study of letters altogether, and resolving to study no other science than that which I could find within myself or else in the great book of the world. ... 

It is true that, while I merely observed the behaviour of others I found little basis in it for certainty, and I noticed almost as much diversity as I had done earlier among the opinions of philosophers. ... Many things which, although they may seem to us very extravagant and ridiculous, are nevertheless commonly accepted and approved by other great peoples. ... 

[On the basis of these experiences with books and people, the first rule Descartes adapted] was never to accept anything as true that I did not know to be evidently so: that is to say, carefully to avoid precipitancy and prejudice, and to include in my judgements nothing more than what presented itself so clearly and so distinctly to my mind that I might have no occasion to place it in doubt. ... 

[As I wanted to concentrate solely on the search for truth, I thought I ought to ... reject as being absolutely false everything in which I could suppose the slightest reason for doubt, in order to see if there did not remain after that anything in my belief which was entirely indubitable. So, because our senses sometimes play us false, I decided to suppose that there was nothing at all which was such as they cause us to imagine it; and because there are men who make mistakes in reasoning, even with the simplest geometrical matters, and make paralogisms, judging that I was as liable to error as anyone else, I rejected as being false all the reasonings I had hitherto accepted as proofs. And finally, considering that all the same thoughts that we have when we are awake can also come to us when we are asleep, without any one of them then being true, I resolved to pretend that nothing which had ever entered my mind was any more true than the illusions...
of my dreams. But immediately afterwards I became aware that, while I decided thus to think that everything was false, it followed necessarily that I who thought thus must be something; and observing that this truth: *I think, therefore I am*, was so certain and so evident that all the most extravagant suppositions of the sceptics were not capable of shaking it, I judged that I could accept it without scruple as the first principle of the philosophy I was seeking.


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**Notes**

16. Ibid., p. xxvi.


27. Ibid., pp. 173–179.


**Suggested Reading**


