

**Early modern cosmology (Introduction)**

"Renaissance" literally means "rebirth." It refers especially to the rebirth of learning that began in Italy in the fourteenth century, spread to the north, including England, by the sixteenth century, and ended in the north in the mid-seventeenth century (earlier in Italy). During this period, there was an enormous renewal of interest in and study of classical antiquity.

Yet the Renaissance was more than a "rebirth." It was also an age of new discoveries, both geographical (exploration of the New World) and intellectual. Both kinds of discovery resulted in changes of tremendous import for Western civilization. In science, for example, Copernicus (1473-1543) attempted to prove that the sun rather than the earth was at the center of the planetary system, thus radically altering the cosmic world view that had dominated antiquity and the Middle Ages. In religion, Martin Luther (1483-1546) challenged and ultimately caused the division of one of the major institutions that had united Europe throughout the Middle Ages--the Church. In fact, Renaissance thinkers often thought of themselves as ushering in the modern age, as distinct from the ancient and medieval eras.

Study of the Renaissance might well center on five interrelated issues. First, although Renaissance thinkers often tried to associate themselves with classical antiquity and to dissociate themselves from the Middle Ages, important continuities with their recent past, such as belief in the Great Chain of Being, were still much in evidence. Second, during this period, certain significant political changes were taking place. Third, some of the noblest ideals of the period were best expressed by the movement known as Humanism. Fourth, and connected to Humanist ideals, was the literary doctrine of "imitation," important for its ideas about how literary works should be created. Finally, what later probably became an even more far-reaching influence, both on literary creation and on modern life in general, was the religious movement known as the Reformation.

Renaissance thinkers strongly associated themselves with the values of classical antiquity, particularly as expressed in the newly rediscovered classics of literature, history, and moral philosophy. Conversely, they tended to dissociate themselves from works written in the Middle Ages, a historical period they looked upon rather negatively. According to them, the Middle Ages were set in the "middle" of two much more valuable historical periods, antiquity and their own. Nevertheless, as modern scholars have noted, extremely important continuities with the previous age still existed.

**The Great Chain of Being**

Among the most important of the continuities with the Classical period was the concept of the Great Chain of Being. Its major premise was that every existing thing in the universe had its "place" in a divinely planned hierarchical order, which was pictured as a chain vertically extended. ("Hierarchical" refers to an order based on a series of higher and lower, strictly ranked gradations.) An object's "place" depended on the relative proportion of "spirit" and "matter" it contained--the less "spirit" and the more "matter," the lower down it stood. At the bottom, for example, stood various types of inanimate objects, such as metals, stones, and the four elements (earth, water, air, fire). Higher up were various members of the vegetative class, like trees and flowers. Then came animals; then humans; and then angels. At the very top was God. Then within each of these large groups, there were other hierarchies. For example, among metals, gold was the noblest and stood highest; lead had less "spirit" and more matter and so stood lower. (Alchemy was based on the belief that lead could be changed to gold through an infusion of "spirit.") The various species of plants, animals, humans, and angels were similarly ranked from low to high within their respective segments. Finally, it was believed that between the segments

themselves, there was continuity (shellfish were lowest among animals and shaded into the vegetative class, for example, because without locomotion, they most resembled plants).

Besides universal orderliness, there was universal interdependence. This was implicit in the doctrine of "correspondences," which held that different segments of the chain reflected other segments. For example, Renaissance thinkers viewed a human being as a microcosm (literally, a "little world") that reflected the structure of the world as a whole, the macrocosm; just as the world was composed of four "elements" (earth, water, air, fire), so too was the human body composed of four substances called "humours," with characteristics corresponding to the four elements. (Illness occurred when there was an imbalance or "disorder" among the humours, that is, when they did not exist in proper proportion to each other.) "Correspondences" existed everywhere, on many levels. Thus the hierarchical organization of the mental faculties was also thought of as reflecting the hierarchical order within the family, the state, and the forces of nature. When things were properly ordered, reason ruled the emotions, just as a king ruled his subjects, the parent ruled the child, and the sun governed the planets. But when disorder was present in one realm, it was correspondingly reflected in other realms. For example, in Shakespeare's *King Lear*, the simultaneous disorder in family relationships and in the state (child ruling parent, subject ruling king) is reflected in the disorder of Lear's mind (the loss of reason) as well as in the disorder of nature (the raging storm). Lear even equates his loss of reason to "a tempest in my mind."

Though Renaissance writers seemed to be quite on the side of "order," the theme of "disorder" is much in evidence, suggesting that the age may have been experiencing some growing discomfort with traditional hierarchies. According to the chain of being concept, all existing things have their precise place and function in the universe, and to depart from one's proper place was to betray one's nature. Human beings, for example, were pictured as placed between the beasts and the angels. To act against human nature by not allowing reason to rule the emotions--was to descend to the level of the beasts. In the other direction, to attempt to go above one's proper place, as Eve did when she was tempted by Satan, was to court disaster. Yet Renaissance writers at times showed ambivalence towards such a rigidly organized universe. For example, the Italian philosopher Pico della Mirandola, in a work entitled *On the Dignity of Man*, exalted human beings as capable of rising to the level of the angels through philosophical contemplation. Also, some Renaissance writers were fascinated by the thought of going beyond boundaries set by the chain of being. A major example was the title character of Christopher Marlowe's play *Doctor Faustus*. Simultaneously displaying the grand spirit of human aspiration and the more questionable hunger for superhuman powers, Faustus seems in the play to be both exalted and punished. Marlowe's drama, in fact, has often been seen as the embodiment of Renaissance ambiguity in this regard, suggesting both its fear of and its fascination with pushing beyond human limitations.

### **Particular features of the 'Chain of Being'**

Hierarchical degree:

God

Angels

Humans

Animals

Vegetables

Minerals

Four Humors:

Yellow Bile (or Cholera): causes anger and irritability

Black Bile (or Melancholy): causes melancholy, sadness

**Blood:** causes excitement, energy, happiness, sexual arousal

**Phlegm:** causes lethargy, boredom

Astrological Ranks:

Sun

Moon

Planets

Stars

Note: The Elizabethans referred to all celestial objects, including the sun, moon, planets, and comets, as "stars." Thus, "the watery star" refers to the moon, the star that controls the tides. The Earth is in Ptolemaic models, the center of the universe, but it is not ranked on the Chain of Being as a star. Instead, the Sun is the primate of the celestial objects because it is the brightest object in the sky.

Four Elements:

**Fire** (attributes of hot and dry). Its alchemical spirit is the Salamander.

**Air** (attributes of warm and moist). Its alchemical spirit is the Sylph.

**Water** (attributes of cold and moist). Its alchemical spirit is the Naiad / Nixie.

**Earth** (attributes of cold and dry) Its alchemical spirit is the Gnome.

Subgroups of the Chain of Being:

**God:** At once at the top of the Chain of Being, but also external to creation, God was believed to stand outside the physical limitations of time. He possessed the spiritual attributes of reason, love, and imagination, like all spiritual beings, but he alone possessed the divine attributes of omnipotence, omniscience, and omnipresence. God serves as the model of authority for the strongest, most virtuous, most excellent type of being within a specific category (the "primate," see below).

**Angelic Beings:** Beings of pure spirit, angels had no physical bodies of their own. In order to affect the physical world, angels were thought to build temporary bodies for themselves out of particles of air. Medieval and Renaissance theologians believed angels to possess reason, love, imagination, and--like God--to stand outside the physical limitations of time. They possessed sensory awareness unbound by physical organs, and they possessed language. They lacked, however, the divine attributes of omnipotence, omniscience, and omnipresence of God, and they simultaneously lacked the physical passions experienced by humans and animals. Depending upon the author, the class of angels was further subdivided into three, seven, nine, or ten ranks, variously known as triads, orders or choirs. Each rank had greater power and responsibility than the entities below them. The Pseudo-Dionysius divides the angels into three "choirs" or "triads" with three orders in the *Caelestis Hierarchia*. St. Gregory the Great and Saint Thomas Aquinas favored the nine-tiered system. Aquinas writes in the *Summa Theologica*: "There are nine orders of angels, to wit, angels, archangels, virtues, powers, principalities, dominations, ophanim [*alias* thrones], cherubim, and seraphim." The primate, or superior type of angel, was the seraph, or in the plural form, seraphim.

**Humanity:** For medieval and Renaissance thinkers, humans occupied a unique position on the Chain of Being, straddling the world of spiritual beings and the world of physical creation. Humans were thought to possess divine powers such as reason, love, and imagination. Like angels, humans were spiritual beings, but unlike angels, human souls were "knotted" to a physical body. As such, they were subject to passions and physical sensations--pain, hunger, thirst, sexual desire--just like other animals lower on the Chain of the Being. They also possessed the powers of reproduction unlike the minerals and rocks lowest on the Chain of Being. Humans had a particularly difficult position, balancing the divine and the animalistic parts of their nature. For instance, an angel is only capable of intellectual sin such as pride (as evidenced by Lucifer's

fall from heaven in Christian belief). Humans, however, were capable of both intellectual sin and physical sins such as lust and gluttony if they let their animal appetites overrule their divine reason. Humans also possessed sensory attributes: sight, touch, taste, hearing, and smell. Unlike angels, however, their sensory attributes were limited by physical organs. (They could only know things they could discern through the five senses.) The human primate was the King.

**Animals:** Animals, like humans higher on the Chain, were animated (capable of independent motion). They possessed physical appetites and sensory attributes, the number depending upon their position within the Chain of Being. They had limited intelligence and awareness of their surroundings. Unlike humans, they were thought to lack spiritual and mental attributes such as immortal souls and the ability to use logic and language. The primate of all animals (the "King of Beasts") was variously thought to be either the lion or the elephant. However, each subgroup of animals also had its own primate, an avatar superior in qualities of its type.

Mammalian Primate: Lion or Elephant

**Domesticated Predators** (dogs, cats)

**Predatory Mammals** (wolves)

**Domesticated Herbivores** (horses, cattle, donkeys)

**Wild Herbivores** (deer, rabbits, etc.)

Avian Primate: Eagle

**Birds of Prey** (hawks, owls, etc.)

**Carrion Birds** (vultures, crows)

**"Worm-eating" Birds** (robin, etc.)

**"Seed-eating" Birds** (sparrow, etc.)

Note that avian creatures, linked to the element of air, were considered superior to aquatic creatures linked to the element of water. Air naturally tended to rise and soar above the surface of water, and analogously, aerial creatures were placed higher in the Chain.

Piscine Primate: Whale or Dolphin (We know a whale is not a fish; back then people did not)

Fish of various sizes and attributes

The chart would continue to descend through various reptiles, amphibians, and insects. The higher up the chart one went, the more noble, mobile, strong, and intelligent the creature in Renaissance belief. At the very bottom of the animal section, we find sessile creatures like the oysters, clams, and barnacles. Like the plants below them, these creatures lacked mobility, and were thought to lack various sensory organs such as sight and hearing. However, they were still considered superior to plants because they had tactile and gustatory senses (touch and taste).

**Plants:** Plants, like other living creatures, possessed the ability to grow in size and reproduce. However, they lacked mental attributes and possessed no sensory organs. Instead, their gifts included the ability to eat soil, air, and "heat." (Photosynthesis was a poorly understood phenomenon in medieval and Renaissance times.) Plants did have greater tolerances for heat and cold, and immunity to the pain that afflicts most animals. The primate of plants was the oak tree. In general, trees ranked higher than shrubs, shrubs ranked higher than bushes, bushes ranked higher than cereal crops, and cereal crops ranked higher than herbs, ferns, and weeds. At the very bottom of the botanical hierarchy, the fungus and moss, lacking leaf and blossom, were so limited in form that Renaissance thinkers thought them scarcely above the level of minerals. However, each plant was also thought to be gifted with various edible or medicinal virtues unique to its own type.

**Minerals:** Creations of the earth, the lowest of elements, all minerals lacked the plant's basic ability to grow and reproduce. They also lacked mental attributes and sensory organs found in

beings higher on the Chain. Their unique gifts, however, were typically their unusual solidity and strength. Many minerals, in fact, were thought to possess magical powers, particularly gems.

Lapidarical Primate: Diamond, then various gems, rubies, sapphires, topaz, chrysolite, etc.

Metallic Primate: Gold, then various metals, silver, iron, bronze, copper, tin

Geological Primate: Marble, then various stones, granite, sandstone, limestone, etc. At the very bottom of the mineral section, we find soil, dust, and sand, and other minute particles.

Literary Ramifications: Artists in the period have ready at their fingertips a catalog of instant symbols and connotations, all conveniently ranked in status. If Shakespeare compares a woman to a vine and her husband to an oak, he doesn't do so merely to talk about her beauty or his strength. Instead, he emphasizes her subordination to him in the Chain of Being. Likewise, if two characters fight for the throne, one compared to a lion, the other compared to a boar, the comparison implies something about which one has a legitimate claim. Likewise, imagery from the sun, the moon, or other parts of nature often involve an implied set of connotations concerning that object or animal's place in nature.

Moral Ramifications: It becomes a moral imperative for each creature to know its place in the Chain of Being and fulfill its own function without striving to rise above its station or debasing itself by behavior proper to the lower links in the chain. A human who is as gluttonous as a pig, or as lecherous as goat, has allowed the lower, bestial instincts in his nature to supersede his divine capability of reason. He is guilty of fleshly or carnal sin, and denies the rational, spiritual aspect of his nature.

Likewise, a human who attempts to rise above his social rank does so through arrogance, pride, or envy of his betters. Here, the error is an intellectual or spiritual sin.

Political Ramifications: The belief in the Chain of Being meant that monarchy was ordained by God and inherent in the very structure of the universe. Rebellion was a sin not only against the state, but against heaven itself, for the king was God's appointed deputy on earth, with semi-divine powers. King James I himself wrote, "The state of monarchy is the supremest thing upon earth: for kings are not only God's Lieutenants upon earth, and sit upon God's throne, but even by God himself they are called Gods." Such an ideology necessitates a social conservatism so extreme that it is difficult to imagine today.

Conversely, the King has a moral responsibility to God and his people. In return for his absolute power, he is expected to rule his subjects with love, wisdom, and justice. To do otherwise is to abandon those natural qualities that make a noble fit to rule in the first place. Misusing regal authority is a perversion of divine order.

### **Political Implications of the Chain of Being**

The fear of "disorder" was not merely philosophical--it had significant political ramifications. The proscription against trying to rise beyond one's place was of course useful to political rulers, for it helped to reinforce their authority. The implication was that civil rebellion caused the chain to be broken, and according to the doctrine of correspondences, this would have dire consequences in other realms. It was a sin against God, at least wherever rulers claimed to rule by "Divine Right." (And in England, the King was also the head of the Anglican Church.) In Shakespeare, it was suggested that the sin was of cosmic proportions: civil disorders were often accompanied by meteoric disturbances in the heavens. (Before Halley's theory about periodic orbits, comets, as well as meteors, were thought to be disorderly heavenly bodies.) The need for strong political rule was in fact very significant, for the Renaissance had brought an end for the most part to feudalism, the medieval form of political organization. The major political accomplishment of the Renaissance, perhaps, was the establishment of effective central government, not only in the north but in the south as well. Northern Europe saw the rise of national monarchies headed by kings, especially in England and France. Italy saw the rise of the

territorial city-state often headed by wealthy oligarchic families. Not only did the chain of being concept provide a rationale for the authority of such rulers; it also suggested that there was ideal behavior that was appropriate to their place in the order of things. It is no wonder then that much Renaissance literature is concerned with the ideals of kingship, with the character and behavior of rulers, as in Machiavelli's *Prince* or Shakespeare's *Henry V*.

Other ideals and values that were represented in the literature were even more significant. It was the intellectual movement known as Humanism that may have expressed most fully the values of the Renaissance and made a lasting contribution to our own culture.

#### Humanism

A common oversimplification of Humanism suggests that it gave renewed emphasis to life in this world instead of to the otherworldly, spiritual life associated with the Middle Ages. Oversimplified as it is, there is nevertheless truth to the idea that Renaissance Humanists placed great emphasis upon the dignity of man and upon the expanded possibilities of human life in this world. For the most part, it regarded human beings as social creatures who could create meaningful lives only in association with other social beings.

In the terms used in the Renaissance itself, Humanism represented a shift from the "contemplative life" to the "active life." In the Middle Ages, great value had often been attached to the life of contemplation and religious devotion, away from the world (though this ideal applied to only a small number of people). In the Renaissance, the highest cultural values were usually associated with active involvement in public life, in moral, political, and military action, and in service to the state. Of course, the traditional religious values coexisted with the new secular values; in fact, some of the most important Humanists, like Erasmus, were Churchmen. Also, individual achievement, breadth of knowledge, and personal aspiration (as personified by Doctor Faustus) were valued. The concept of the "Renaissance Man" refers to an individual who, in addition to participating actively in the affairs of public life, possesses knowledge of and skill in many subject areas. (Such figures included Leonardo Da Vinci and John Milton, as well as Francis Bacon, who had declared, "I have taken all knowledge to be my province.") Nevertheless, individual aspiration was not the major concern of Renaissance Humanists, who focused rather on teaching people how to participate in and rule a society (though only the nobility and some members of the middle class were included in this ideal). Overall, in consciously attempting to revive the thought and culture of classical antiquity, perhaps the most important value the Humanists extracted from their studies of classical literature, history, and moral philosophy was the social nature of humanity.

#### "Imitation" or Mimesis

Another concept derived from the classical past (though it was present in the Middle Ages too), was the literary doctrine of "imitation." Of the two senses in which the term had traditionally been used, the theoretical emphasis of Renaissance literary critics was less on the "imitation" that meant "mirroring life" and more on the "imitation" that meant "following predecessors." In contrast to our own emphasis on "originality," the goal was not to create something entirely new. To a great extent, contemporary critics believed that the great literary works expressing definitive moral values had already been written in classical antiquity. Theoretically, then, it was the task of the writer to translate for present readers the moral vision of the past, and they were to do this by "imitating" great works, adapting them to a Christian perspective and milieu. (Writers of the Middle Ages also practiced "imitation" in this sense, but did not have as many classical models to work from.) Of course Renaissance literary critics made it clear that such "imitation" was to be neither mechanical nor complete: writers were to capture the spirit of the originals, mastering the best models, learning from them, then using them for their own purposes. Nevertheless, despite the fact that there were a great many comments by critics about "imitation" in this sense, it was not the predominant practice of many of the greatest

writers. For them, the faithful depiction of human behavior--what Shakespeare called holding the mirror up to nature--was paramount, and therefore "imitation" in the mimetic sense was more often the common practice.

The doctrine of "imitation" of ancient authors did have one very important effect: since it recommended not only the imitation of specific classical writers, but also the imitation of classical genres, there was a revival of significant literary forms. Among the most popular that were derived from antiquity were epic and satire. Even more important were the dramatic genres of comedy and tragedy. In fact, Europe at this time experienced a golden age of theater, led by great dramatists such as Shakespeare.

## **The Protestant Reformation**

Finally, as it developed during the Renaissance, the Protestant Reformation was a movement that had profound implications, not only for the modern world in general, but specifically for literary history. Just as Renaissance Humanists rejected medieval learning, the Reformation seemed to reject the medieval form of Christianity. (It should be noted, however, that both Catholics and Protestants were Humanists, though often with different emphases.) In the early sixteenth century, the German monk Martin Luther reacted against Church corruption, the sort depicted, for example, by Chaucer in the *Canterbury Tales*.

Many Catholics like Erasmus wanted to reform the Church from within. However, Luther's disagreements with Church policy ultimately led him to challenge some of the most fundamental doctrines of the Church, which in turn led him and his followers to break away from the Catholic Church in protest; hence they were known as Protestants. The Reformation had significant political ramifications, for it split Europe into Protestant and Catholic countries which often went to war with each other during this period. Protestantism broke up the institution that had for so long unified all Europe under the Pope (though there were also national struggles with the Papacy that had little to do with Protestantism).

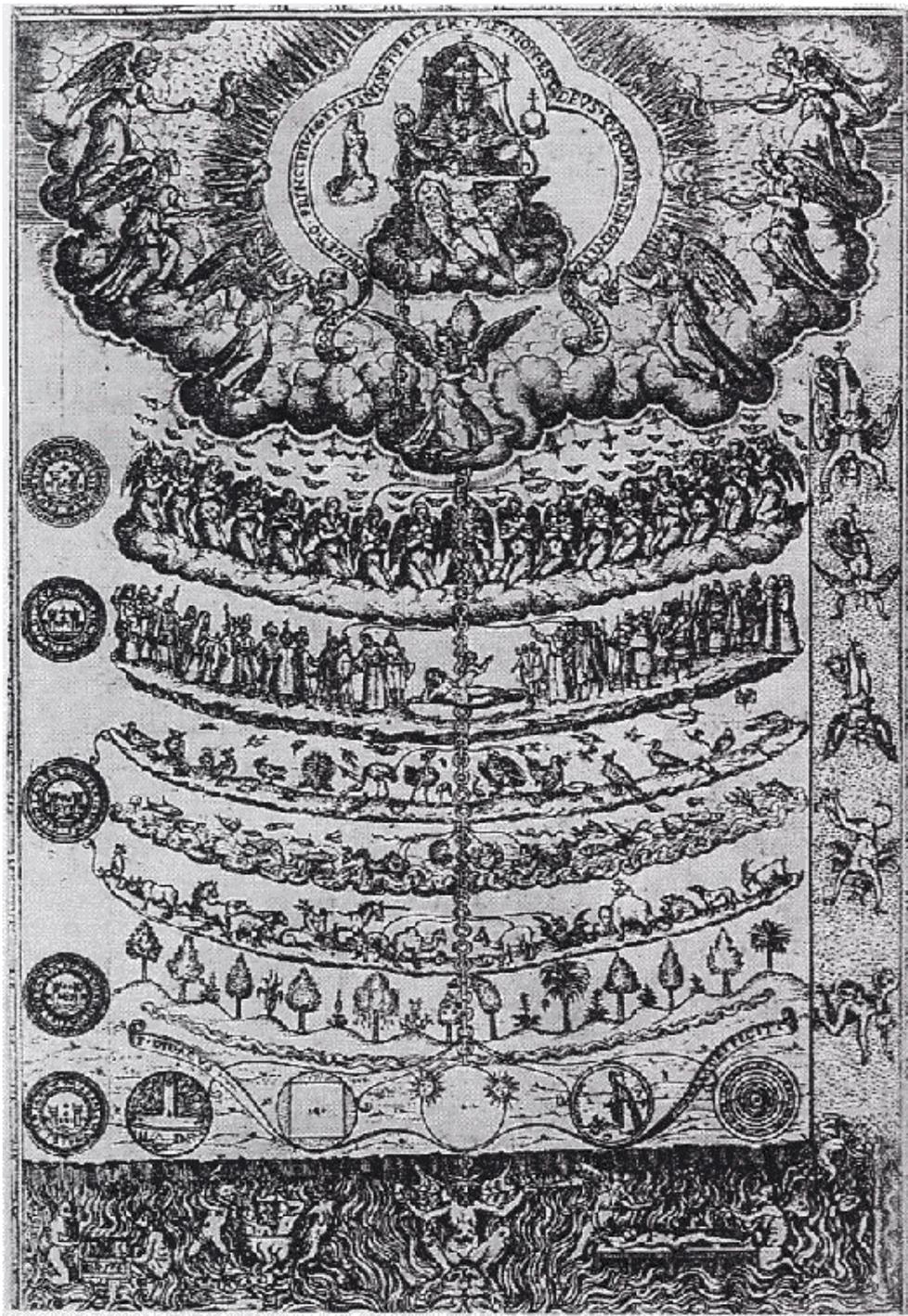
Among the most important tenets of Protestantism was the rejection of the Pope as spiritual leader. A closely related Protestant doctrine was the rejection of the authority of the Church and its priests to mediate between human beings and God. Protestants believed that the Church as an institution could not grant salvation; only through a direct personal relationship with God--achieved by reading the Bible--could the believer be granted such. Many scholars argue that this emphasis on a personal, individual connection with God spawned the modern emphasis on individualism in those cultures affected by Protestantism. On the other hand, some Protestants also believed that after the Fall of Adam in Eden, human nature was totally corrupted as far as human spiritual capabilities were concerned. (Early Protestantism's emphasis on human depravity distinguishes it sharply from Renaissance Humanism.) Humans therefore are incapable of contributing to their salvation, for instance through good deeds; it could only be achieved through faith in God's grace. Overall, there is a good deal of ambivalence regarding many of the Protestant positions, and in fact the disagreement among the many Christian sects may be precisely what distinguishes Renaissance from Medieval religion.

## **Literary Ramifications**

Among the literary ramifications of the Reformation, two stand out. First, the Protestant rejection of the authority of Church representatives resulted in placing that authority entirely on the Bible, at least in theory. Consequently, Protestants stressed the need for all believers to read the Bible for themselves. To help make that possible, they were active in translating the Bible into the vernacular languages so that all laymen could read it. This practice was opposed by the Catholic Church, which insisted on preserving the Bible in Latin. At the same time, Protestants also stressed the need to understand the Bible in its original languages (Hebrew and Greek) so

that it could be properly translated. In their interest in such learning, particularly of ancient languages, Protestants were similar to Humanists. This emphasis on the Bible had a significant impact on literature because the Bible became a renewed source of literary inspiration, both in literary form and subject matter; it also became a rich source of symbols.

The other way the Reformation impacted on literature was perhaps more subtle, and the effects did not appear till much later in literary history. Certainly the emphasis on inner feeling found later in the Romantic Movement received at least some of its inspiration and reinforcement from the religious thrust of the Protestant Reformation.



Didacus Valades, *Rhetorica Christiana* (1579)