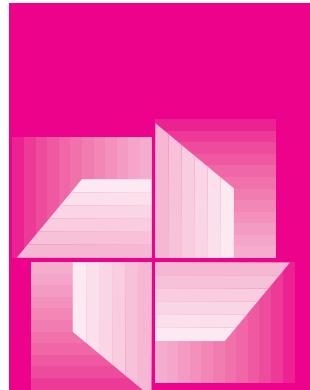


5

Philosophers of the Hellenistic and Christian Eras



Though philosophers disagree on the nature of things, and the mode of investigating truth, and of the good to which all our actions ought to tend, yet on these three great general questions, all their intellectual energy is spent.

—St. Augustine

Before he died in 323 B.C.E. at age thirty-two, Aristotle's student Alexander the Great, son of the Macedonian king Philip II, had conquered the entire civilized Western world, pulverizing all opposition and naming a score of cities after himself to ensure that everyone got the message. The Macedonian domination of the Greek-speaking world, known as the **Hellenistic age** (*Hellene* means "Greek"), was a period of major achievements in mathematics and science.

Having started with Alexander around 335 B.C.E., Macedonian hegemony was carried forth by the families of three of Alexander's generals and lasted about a century and a half, until Philip V of Macedon and Antiochus III of Syria were each defeated (around 190 B.C.E.) by a new ascending power: Rome. From that time on for approximately the next seven hundred years, the Western world *was* the Roman Empire, built on plunder and the power of the sword.

For two centuries, beginning in 27 B.C.E. with the reign of Julius Caesar's grand-nephew Octavian, who was known as "Augustus, the first Roman emperor and savior of the world," the Roman Empire enjoyed peace, security, and political stability. But eventually, after the reign of Marcus Aurelius (161–180 C.E.), conditions deteriorated into chaos. Nevertheless, the ultimate fall of the empire was postponed by Diocletian, who divided the empire into eastern (Byzantine) and western (Roman) halves, and by Constantine I, who granted universal religious tolerance, thus in effect recognizing Christianity. Finally, however, internal anarchy opened

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A Roman aqueduct today. Perhaps great, great, great grandparents of contemporary Italians swam here.

the Roman frontiers to the barbarians. Although the Eastern empire survived until the fifteenth century, in 476 the last emperor of the West was deposed by the Goths. The Dark Ages followed.

If the Romans were anything, they were practical. They built aqueducts and underground sewers and had glass windows. Wealthy Romans lived in lavish town houses equipped with central heating and running water. Roman highways were built on a road base four feet thick and were paved with concrete and squared stone. Roman roads and bridges are still used today, and some may outlive the interstates.

But although they were masters of the applied arts and of practical disciplines such as military science and law (Roman law provided the basis for modern civil law), the Romans had little use for art for art's sake or for literature or science. From the Roman perspective, no form of entertainment was quite so satisfying as watching men fight other men to the death, although seeing humans fight animals came in a close second. Witnessing public torture was a popular entertainment, much like the movies are today.

METAPHYSICS IN THE ROMAN EMPIRE

In philosophy the contributions of the Romans were minimal and almost entirely unoriginal. During Hellenistic and Roman periods there were four main traditions or “schools” of philosophy; three of these arose around the time of Alexander

and were in fact products of Greek culture, not Roman. Two of these—Stoicism and Epicureanism—were concerned mainly with the question of how individuals should best conduct their affairs. If there had been supermarkets at the time, Stoic and Epicurean advice would have been available in paperbacks for sale at the checkout counters. These schools of philosophy are discussed in Chapter 10. The third school—**Skepticism**—(to which we will turn shortly) was concerned with the possibility of knowledge. The remaining school, unlike these other three, did arise during Roman times, but this school was for all intents and purposes a revision of Plato’s philosophy. It is known as **Neoplatonism**, and it had considerable influence on the metaphysics of Christianity.

Plotinus

The great philosopher of Neoplatonism was **Plotinus** [pluh-TIE-nus] (c. 205–270 C.E.). During Plotinus’s lifetime, the Roman Empire was in a most dismal state, suffering plague, marauding barbarian hordes, and an army incompetent to do anything but assassinate its own leaders. Civilization was tottering dangerously near the abyss. Plotinus, however, was inclined to ignore these earthly trifles, for he had discovered that by turning his attention inward, he could achieve union with god.

Now think back for a moment to Plato. According to Plato’s metaphysics, there are two worlds. On one hand, there is the cave, that is, the world of changing appearances: the world of sensation, ignorance, error, illusion, and darkness. On the other hand, there is the light, that is, the world of Forms: the world of intellect, knowledge, truth, reality, and brightness whose ultimate source of existence and essence is the Form *the Good*. Plotinus further specified this ultimate source or reality as god or the One. For Plotinus, god is above and beyond everything else—utterly transcendent.

But Plotinus’s god, like Plato’s Good, and unlike the Christian God, is not a personal god. God, according to Plotinus, is indefinable and indescribable, because to define or describe god would be to place limitations on what has no limits. About god it can be said only that god is. And god can be apprehended only through a coming together of the soul and god in a mystical experience. This mystical “touching” of god, this moment in which we have the “vision,” is the highest moment of life.

The Rise of Christianity

As mentioned in the accompanying Profile, Plotinus’s thought was very influential on the last of the great ancient philosophers, Augustine, who also happens to be one of the two or three most important Christian theologians of all time. Eventually, the predominance of Christianity in Europe came to define the framework within which most Western philosophizing took place. Not long after Plotinus, the great philosophers of the western part of the Roman Empire, or what became of the western part, were almost without exception Christians.

PROFILE: Plotinus (c. 205–270 C.E.)

Plotinus's interest in philosophy began when he was twenty-eight in Alexandria (the most famous Alexandria, the one in Egypt). His first teacher was Ammonius, the "Sack Carrier," who was so called because he earned his living as a gardener.

About 244, Plotinus traveled to Rome and founded what came to be a renowned school of Neoplatonic philosophy. Even the emperor Gallienus and his wife, Salonina, patronized the school. Plotinus tried to get his students to ask questions for themselves; consequently the discussions were lively and sometimes almost violent. On one occasion, Plotinus had to stop a particularly ugly confrontation between a senator and a rich man; he urged both parties to calm themselves and think rather only of the One (about which see the text).

Plotinus himself was a quiet, modest, and self-less human being. He was thought to possess an uncanny ability to penetrate into the human char-



acter and its motives, and so he was sought out for all manner of practical advice.

He would not, however, acknowledge his birthday. This is because, at least according to Porphyry, who wrote a biography of Plotinus, Plotinus was ashamed that his immortal soul was contained in a mortal body,

and the event of his soul entering his body was therefore something to be regretted. He also would not allow his face to be painted or his body to be sculpted. In fact, his long disregard of his body eventually caused him to lose his voice, and his hands and feet festered with abscesses and pus. Because Plotinus greeted his students with an embrace, the net result was a falling off in enrollment.

Plotinus's philosophy had a great influence on St. Augustine and other doctors and fathers of the Church. Christian theology is unthinkable without the mystical depth that comes from Plotinus.

The original Christians, including Jesus and his followers, were Jews. Christianity gradually evolved from a Jewish sect to a separate religion. Now, the Romans were generally pretty tolerant of the religious ideas and practices of the various peoples under their subjugation, but the Jews, including members of the Christian splinter sect, were not willing to pay even token homage to the Roman emperor-deities. The Christians, moreover, were unusually active in trying to make converts. Thus, to Roman thinking, the Christians were not only atheists who ridiculed the Roman deities but also, unlike more orthodox Jews, fanatical rabble-rousers who attempted to impose on others what to the Romans counted as gross superstition. As a result, for a couple of centuries or so the Christians were persecuted from time to time by assorted Roman emperors, sometimes rather vigorously.

Nevertheless, of the numerous cults that existed during the first couple of centuries of the Common Era (c.e.), Christianity eventually became the most popular. Its followers became so numerous and, thanks to the administrative efforts of Paul of Tarsus (later St. Paul), so well organized that by the early part of the fourth century, the emperor Constantine announced its official toleration.

Specifics of Christian doctrine need not concern us, and its central beliefs are well known: Jesus is the son of God, and Jesus' life, crucifixion, and resurrection are proof of God's love for humans and forgiveness of human sin; in addition, those who have faith in Christ will be saved and have life everlasting. The God of Chris-

PROFILE: St. Augustine (354–430 C.E.)

Augustine grew up in northern Africa. His father was a successful man of the world, and Augustine was expected to follow a similar path. Accordingly, he studied rhetoric in Carthage. While there, however, he fell in with a group of students known as the “rebels,” who found amusement in such pastimes as attacking innocent passersby at night. Augustine, to his credit, did not participate in these episodes, though he did steal fruit from a neighbor’s tree for the sheer perversity of doing so.

As a young man, Augustine also indulged in many love affairs. He took a concubine, and the union produced a son. He came to have doubts about his lifestyle, however, and eventually these doubts began to take the upper hand. With the encouragement of his family, he became engaged to a young woman of a prominent family. But



Augustine grew impatient and took a new lover.

In the meanwhile, Augustine’s studies had taken him to Rome and to Milan, where he became a professor of rhetoric. His mother, Monica, had already become a Christian. Through her encouragement and through Augustine’s exposure to St. Ambrose, the celebrated preacher, Augustine was baptized into Christianity at the age of thirty-three. He returned to northern Africa and soon thereafter was called on to serve as Bishop of Hippo.

As bishop, Augustine used his rhetorical abilities to the full in fiercely attacking what he perceived to be the many heresies of the time. His thinking was dominated by two themes, the sinfulness of human beings and the inscrutability of God. At the age of seventy-two, he withdrew from the world and died in self-chosen solitude.

tianity is thought (by Christians) to be the creator of all; and he is also thought to be distinct from his creation.

St. Augustine

St. Augustine [AUG-us-teen] (354–430 C.E.), who came from the town of Tagaste, near what is today the Algerian city of Annaba, transferred Platonic and Neoplatonic themes to Christianity. Transported down through the ages to us today, these themes affect the thought of both Christian and non-Christian.

“Whenever Augustine,” Thomas Aquinas later wrote, “who was saturated with the teachings of the Platonists, found in their writings anything consistent with the faith, he adopted it; and whatever he found contrary to the faith, he amended.” Through Augustine, Christianity became so permanently interwoven with elements of Platonic thought that today, as the English prelate William Inge said, it is impossible to remove Platonism from Christianity “without tearing Christianity to pieces.”

St. Augustine regarded Plotinus and Plato as having *prepared* him for Christianity by exposing him to important Christian principles before he encountered them in Scripture. (But neither Plato nor Plotinus was Christian.) Augustine had a very strong inclination toward skepticism and was tempted to believe that

Augustine on God and Time

The *ex nihilo* theory (God created the world out of nothing) invites a troublesome question for Christian theology: Why did God choose to create the world at the time he did and not at some other? Thanks to Plato and Plotinus, Augustine was able to provide a potentially reasonable answer to this question.

According to Augustine, the question rests on a false assumption, that God (and his actions) exist *within* time. On the contrary, Augustine maintained, God does not exist in time; instead, time began with the creation by God of the world. God is *beyond* time. In this way the timeless attribute of Plato's Good and Plotinus's One was transferred by Augustine to the Christian God.

But what exactly, Augustine wondered, is time? Here Augustine broke new philosophical ground by coming forth with a very tempting answer to this question.

"What, then, is time?" he asked. "If no one asks of me, I know; if I wish to explain to him who asks, I know not." On one hand only the present exists, for the past is no more, and the future is not yet. But

on the other hand certain things did happen in the past, and other things will happen in the future, and thus past and future are quite real. How can the past and the future be both real and nonexistent?

Augustine's answer to this almost hopelessly baffling question is that past and future exist only in the human mind. "The present of things past is memory; the present of things present is sight; and the present of things future is expectation."

Augustine's analysis of time is that it is a subjective phenomenon. It exists "only in the mind." (Thus, before God created us, there was no time.) As will be discussed in Chapter 7, the idea that time is subjective was later developed by the eighteenth-century philosopher Immanuel Kant into the theory that time, space, causation, and other basic "categories" of being are all subjective impositions of the mind on the world. The same idea was then carried to its ultimate conclusion by the Absolute Idealists, who said that the world *is* mind.

Augustine's views on time can be found in the eleventh book of his *Confessions*.

"nothing can be known." Plato and Plotinus enabled Augustine to overcome this inclination.

Today we take for granted the concept of a separate, immaterial reality known as the transcendent God. Even those who do not believe in God are familiar with this concept of God's immateriality and are not inclined to dismiss it as blatant nonsense (though some, of course, do). But careful reflection reveals that there is not much within experience that gives rise to this concept, for we seem to experience only concrete, physical things. Through the influence of Plato and Plotinus, St. Augustine perceived that belief in a distinct immaterial reality was not the blindly superstitious thing that it might seem. And through Augustine's thought, the Christian belief in a nonmaterial God received a philosophical justification, a justification without which (it is arguable) this religion would not have sustained the belief of thoughtful people through the ages. (Other explanations of the durability of the Christian belief in God are, of course, possible.)

Augustine accepted the Platonic view that "there are two realms, an intelligible realm where truth itself dwells, and this sensible world which we perceive by sight and touch." Like Plato before him, St. Augustine thought that the capacity of the human mind to grasp eternal truths implies the existence of something infinite and eternal apart from the world of sensible objects, an essence that in some sense

represents the source or ground of all reality and of all truth. This ultimate ground and highest being Augustine identified with God rather than with Platonic Forms.

Augustine, however, accepted the Old Testament idea that God created the world out of nothing. This idea of **creation ex nihilo**, creation out of nothing, is really quite a startling concept when you think about it, and Greek thinkers had had trouble with it. Their view had been that getting something from nothing is impossible. (The box “Augustine on God and Time” describes Augustine’s thinking about creation.)

Augustine also accepted the Gospel story of the life, death, and resurrection of Jesus Christ and believed that God took on human form in the person of Jesus. Thus, Augustinian theology gives God a human aspect that would have been unthinkable for Neoplatonists, who thought that the immaterial realm could not be tainted with the imperfection of mere gross matter.

It is sometimes said that St. Augustine is the founder of Christian *theology*. Certainly his influence on Christian thought was second to none, with the exception of St. Paul, who formulated a great deal of Christian doctrine. One very important aspect of St. Augustine’s thought was his concept of evil, in which the influence of Plato and Plotinus is again evident. (We will say something about this Chapter 10.)

Augustine and Skepticism

Total skeptics maintain that nothing can be known or, alternatively, profess to suspend judgment in all matters. **Modified skeptics** do not doubt that at least some things are known, but they deny or suspend judgment on the possibility of knowledge about particular things, such as God, or within some subject matter, such as history or ethics. In the Hellenistic and Roman periods after Plato, two schools of skepticism developed, and they were something like rivals: the **Academics** (who flourished during the third and second centuries B.C. in what had earlier been Plato’s Academy) and the **Pyrrhonists** (the disciples of Pyrrho [PEER-row] of Elis, c. 360–270 B.C.E.). The Academics and Pyrrhonists were both total skeptics; the main difference between them seems to be one of phrasing. The Academics held that “all things are inapprehensible”—that is, nothing can be known. The Pyrrhonists said, in effect, “I suspend judgment in the matter, and I suspend judgment on all other issues I have examined too.” In short, Pyrrhonists maintained that they did not know whether knowledge is possible.

The most famous skeptic of all time was the last great Pyrrhonist skeptic, **Sextus Empiricus** [SEX-tus em-PEER-uh-kus], who lived in the second to third centuries C.E. Although Sextus’ writings are extensive and constitute the definitive firsthand report on Greek skepticism, little is known about Sextus himself. We do not know where he was born or died or even where he lived. We do know, however, that he was a physician.

In Sextus’ writings may be found virtually every skeptical argument that has ever been devised. Sextus set forth the **Ten Tropes**, a collection of ten arguments by the ancient skeptics against the possibility of knowledge. The idea behind the Ten Tropes was this. Knowledge is possible only if we have good grounds for

PROFILE: Pyrrho (c. 360–270 B.C.E.)

Not a great deal is known about Pyrrho, after whom the Pyrrhonist tradition is named, for he left no writings. Diogenes Laertiūs, a third-century Greek biographer (whose tales about the ancient philosophers, despite their gossipy and sometimes unreliable nature, are an invaluable source of history), reported that Pyrrho was totally indifferent to and unaware of things going on around him. A well-known story told by Diogenes Laertiūs is that once, when Pyrrho's dear old teacher was stuck in a ditch, Pyrrho passed him by without a word. (Or perhaps this story indicates that Pyrrho was quite aware of things around him.) According to other reports, however, Pyrrho was a moderate, sensible, and quite level-headed person.

It is at any rate true that Pyrrho held that nothing can be known about the hidden essence or true nature of things. He held this because he thought every theory can be opposed by an equally sound contradictory theory. Hence, we must neither accept nor reject any of these theories but, rather, must suspend judgment on all issues. The suspension of judgment, *epochē*, was said by Pyrrho to lead to *ataraxia*, tranquility or unperturbedness. Pyrrho's fame was apparently primarily a result of his exemplary *agoge* (way of living), though there are differences of opinion about what that way of life actually was.

Sextus' Asterisk

In a seventeenth-century play by the great French comic playwright Molière called *The Forced Marriage*, a skeptic is beaten in one scene. While he is being beaten, the skeptic is reminded that skeptics cannot be sure that they are being beaten or feel pain. Molière, evidently, did not view skepticism as a serious philosophy.

In defense of Sextus, we might mention that Sextus placed a small asterisk beside his skepticism.

He said that he did not “deny those things which, in accordance with the passivity of our sense impressions, lead us involuntarily to give our assent to them.” That I am in pain is an *involuntary* judgment on my part and therefore does not count, Sextus would say.

We leave it to you to determine if this tactic enables Sextus to escape Molière’s criticism.

believing that what is, is exactly as we think it is or perceive it to be. But we do not have good grounds for believing that what is, is exactly as we think it is or perceive it to be. For one thing, we never are aware of any object as it is independent of us but only as it stands in relationship to us. Therefore, we cannot know how any object really is in itself.

For example, think of a wooden stick. The qualities we think it has are those we perceive by sense — but not so fast! Does the stick have *only* those qualities that it appears to us to have? Or does it have *additional* qualities that are unknown to us? Or does it have *fewer* qualities than appear to us? The senses themselves cannot tell us which of these options is correct, and Sextus argues that because the senses cannot tell us, the mind cannot either. (The seventeenth-century French comic playwright Molière famously made fun of this theory, as you can see in the box “Sextus’ Asterisk.”)



Now, back to St. Augustine. During the Christianization of the Roman Empire skepticism waned, but St. Augustine was familiar with Academic Skepticism through the description by the Roman historian Cicero. Augustine concluded that total skepticism is refuted in at least three ways.

First, skepticism is refuted by the **principle of noncontradiction**, which states that a proposition and its contradiction cannot *both* be true—*one or the other* must be true. The propositions “The stick is straight” and “It is false that the stick is straight” cannot both be true. Thus, we at least know that the stick cannot be both straight and not straight. However, not all contemporary philosophers are convinced by this argument of St. Augustine’s, and it does not exactly confront the line of reasoning employed by Sextus Empiricus.

Second, Augustine held that the act of doubting discloses one’s *existence* as something that is absolutely certain: from the fact *I am doubting*, it follows automatically that *I am*. (The famous French philosopher René Descartes elaborated on a similar refutation of skepticism, which will be described in Chapter 6.) Some contemporary philosophers, however, are unconvinced by this maneuver as it too does not quite address the specific line of reasoning employed by Sextus.

Finally, Augustine also held that sense perception itself gives a rudimentary kind of knowledge. Deception in sense perception occurs, he said, only when we “give assent to more than the fact of appearance.” For example, the stick appears bent at the point it enters the water. If we assent only to the appearance of the oar and say merely that it *looks* bent, we make no mistake. It is only if we judge that the oar actually *is* bent that we fall into error.

Augustine saw these three insights as a refutation of skepticism and regarded this refutation as highly important, but he did not try to derive anything else of great importance from them. The most important truths for Augustine are received by revelation and held on faith, and this doctrine was assumed throughout the Christian Middle Ages.

Hypatia

Another important figure of this period was **Hypatia** [hy-PAY-sha] (c. 370–415). Recent scholarship discloses that Hypatia's influence on Western thought was significant, especially through her teaching and her work on astronomy in what was at the time a center of culture and learning, Alexandria.

Hypatia and her father, Theon, a famous mathematician and astronomer, taught the astronomy of Ptolemy. Claudius Ptolemy was a second-century scholar whose work was the definitive treatment of astronomy (and would remain so for well over a thousand years, until the sixteenth century, when the Ptolemaic system was overthrown by Nicholas Copernicus). Hypatia was the last major commentator on Ptolemy's work.

Hypatia was hardly a skeptic. She and her father prepared an updated edition of Ptolemy that included thousands of astronomical observations that had been recorded in the centuries after Ptolemy's death. Ptolemy's theory, which postulated the earth as the center of the universe and the sun going around the earth, gave pretty accurate predictions of celestial events, but not one hundred percent accurate predictions, and the further away in time an observer was from Ptolemy, the less accurate were the predictions. Hypatia improved the theories, extending computations to many additional place values (using an abacus!). This greater accuracy improved the predictability of astronomical calculations. She tinkered with Ptolemy's theory, using more sophisticated algebra and geometry than he had, to make astronomical facts a better fit with his theory and with theories of mathematics and geometry that he had relied on to develop his theory of astronomy. She tried to improve the rigor of theorems by finding and filling gaps to achieve greater completeness. Sometimes she improved the soundness of proofs by devising direct proofs where only indirect proofs existed before.

Especially important, Hypatia found errors in the part of Ptolemy's theory that showed how the sun revolved around the earth. (This was important from both the Christian and the pagan standpoint—Hypatia was a pagan—because from either standpoint philosophically the earth must be the center of the universe.) Equally important philosophically, she tried to demonstrate the *completeness* of Ptolemy's astronomy and Diophantus's theory of algebra (Diophantus was an important Greek mathematician). A theory is “complete” when it explains everything within its scope. There are difficulties in proving completeness, but mostly they have not been understood until this century. In Hypatia's time nobody knew how to show that a theory is complete. Hypatia's approach was to introduce as many refutations and counterexamples to a theory as she could think up.

For Hypatia, mathematics and astronomy were ways of checking metaphysical and epistemological features of Plato's, Aristotle's, and Plotinus's philosophies against the physical universe. For example, Aristotle held that the circle is the most perfect shape. If the circle is the most perfect shape, then its ideal Form, in Plato's sense of Form, must be that which is reflected by God's perfect creation, the universe. Plato's and Aristotle's thought could be checked against astronomical theories and findings about the shape of the universe.

Philosophically, Hypatia was sympathetic to Plotinus's metaphysics and to stoicism (see Chapter 10). She, and all good Plotinians, believed that the solution to

PROFILE: Hypatia of Alexandria (c. 370 – 415)

Hypatia taught in Alexandria, Egypt, at what was called the Museum. Back then, philosophy was still a pretty wide field, and philosophers like Plotinus and Hypatia were not about to impose distinctions (as we now do) among such subjects as religion, mathematics, astronomy, and the slice of philosophy known as metaphysics.

Hypatia became famous when she was very young. By 390, students were coming to her from throughout northern Africa. (Europe was still an uncivilized place, but Alexandria was late antiquity's equivalent of Silicon Valley.) Every decent scientist and philosopher passed through Alexandria.

Hypatia was a pagan, but she had a lot of students who were Christians and maybe even a few Jewish students. Considering that by 410 relationships among different religious groups were so bad that there were frequent riots, Hypatia must have made sense to lots of people with very different orientations. One came from Cyrene (in Libya) to become her student and went on to convert to Christianity, becoming first a priest and then a bishop.

Over the past thousand or so years, when anybody has bothered to write about Hypatia, the chronicler has invariably told the story of how she dealt with sexual harassment by one of her male students. She supposedly threw the fifth-century equivalent of a used sanitary napkin at him—and never heard from him again. (Apparently, the Mu-



seum did not have procedures for dealing with sexual harassment.)

Until this century, it was thought that Hypatia wrote only three books and that all of them were lost. Can you imagine your copy of this book being found fifteen centuries from now, and its being discovered to contain the last surviving fragment of Descartes's *Meditations*? That is what happened to all of Hypatia's works! From what we know now, it looks as if Hypatia prepared about half a dozen scholarly writings of various lengths. Some of those writings have only recently been identified by scholars as being by her. Her works were copied, edited, translated, retranslated, incorporated into other people's writings, bought, sold, and traded by scholars from Rome to Baghdad to Britain for more than a thousand years. Versions of her different works exist in Greek, Latin, Hebrew, and Arabic—but not in English. Writings by Hypatia include an edition of Diophantus's *Arithmetica*, a work based on Archimedes' *Sphere and Cylinder*; an anonymous work on one-sided figures; a commentary on Archimedes' *Dimension of the Circle*; a commentary on Apollonius Pergaeus's *Conics* that formed the basis for later commentaries, including one by the astronomer Edmund Halley (of Halley's Comet fame); and a commentary on part of Ptolemy's *Syntaxis Mathematica*.

In 415, Hypatia was savagely murdered, allegedly by a gang of monks. Her corpse was then hacked into pieces and burned.

the mystery of the One, the ultimate source of reality, would explain everything. It would explain the nature of God, the nature of the universe, and our place in it.

For Hypatia philosophy was more than an abstract intellectual exercise: it implied personal ethical and religious knowledge, a way of living. Hypatia introduced beginning students to Plato's metaphysics and to Plotinus's interpretations of Plato to make a difference in their daily lives. Mathematics and astronomy were considered essential ingredients in preparation for a study of metaphysics. Consequently, she prepared careful, symmetrical expositions of elements of mathematical and astronomical proofs for her students.

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We are not sure which later astronomers noticed Hypatia's commentary on Ptolemy, because apparently only two copies of it have survived. Both were obtained during the Renaissance by the Lorenzo di Medici library. Thus, her work could have been seen over a thousand years later by the young graduate student Nicholas Copernicus, who was traveling around Italy trying to read all the Ptolemy he could find. But we don't know whether Copernicus actually saw Hypatia's work or whether it influenced him to rethink the geocentric model of the universe.

THE MIDDLE AGES AND AQUINAS

Augustine died in 430, some forty-six years before the date usually assigned as the end of the (Western) Roman Empire. The final centuries of the empire had witnessed the spread of Christianity through all classes of society and eventually an alliance between the Church and the state. They also had seen a growing belief in demons, magic, astrology, and other dark superstitions. After the abdication of the last Roman emperor in 476, the light of reason was all but extinguished in Europe. These Dark Ages lasted to about 1000. Compared with the shining cultures of the East at the same time, Europe barely qualified as a civilization.

Precipitating the fall of the empire were barbarian invasions, and after the fall the invading hordes arrived in waves. In the first wave, a group of Germanic kingdoms replaced the empire. In the next century (i.e., the sixth), Justinian, the Byzantine emperor, partially reconquered the Western empire; but shortly after his death Italy was invaded by the ferocious Lombards, and Syria, Egypt, and Spain were conquered by the Muslims. The Carolingian Franks under Charlemagne restored stability for a brief time, bringing into existence (on Christmas Day, 800) what later was called the Holy Roman Empire, although subsequent invasions by the Vikings and Muslims again spread chaos and destruction. During this period Slavic conquests of the Balkans separated Greek and Latin cultures, and the Greek and Latin churches also gradually drew apart.

Original philosophy was virtually nonexistent during the Dark Ages, though the two most capable and learned thinkers of this grim and lightless period, Boethius in the sixth century (who was executed for treason) and John Scotus in the ninth (whose work was posthumously condemned), were both philosophers of remarkable ability. The thought of both men, though basically Neoplatonic, was original and profound.

By about 1000, the age of invasions was substantially over. The assorted northern invaders had been Christianized, a series of comparatively stable states was spread over Europe, and a relationship of rough interdependence and equality existed between the pope and the various secular authorities.

During the high Middle Ages, as the next few centuries are called, the pope became the most powerful leader in Europe. The Church was the unifying institution of European civilization, and monarchs were averse to defying it. After all, the Church stood at the gateway to heaven.

In the growing security and prosperity that followed the Dark Ages, urban centers grew and intellectual life, centered in the great universities that arose under the



During the high Middle Ages, several universities were founded, including, famously, the University of Paris. This is a photograph of the Sorbonne, one of the most famous colleges making up the original university. It was founded in 1247 by a French theologian, Robert de Sorbon.

auspices of the Church, was stimulated through commercial and military contact with Greek, Arabian, Jewish, and (more indirectly) Indian cultures.

Still, independent or unorthodox thinking was not without its hazards, especially if it laid any foundation for what Church authorities perceived to be a heretical viewpoint. During the medieval Inquisition, those accused of heresy were brought to trial. The trials, however, were secret, and there was no such thing as the right to counsel. One's accusers were not named, and torture was used in service of the truth. An interesting practice was that of torturing not only the accused but also those speaking on behalf of the accused. As might be imagined, one was apt to find few witnesses on one's behalf. It was not unusual for heretics to recant their sins.

Nevertheless, despite all this, the high Middle Ages was a period of growing personal liberty, spreading literacy, and increasing intellectual vigor. One philosophical problem important to thinkers of the time—as it had been to Aristotle (see Chapter 4)—was the problem of **universals**, which is described in the box “Universals.”

Contact with the Arabian world during the high Middle Ages led to a rekindling of interest among European church leaders in the philosophy of Aristotle. Through the centuries the Muslim world had enjoyed greater access to ancient Greek philosophy than had the Christian, and many Christian thinkers first

Universals

The three main philosophical problems from around 1000 to 1200 were these: (1) rationally proving the existence of God, (2) understanding the relationship between reason and faith, and (3) solving the “problem of universals.” Herewith, more about (3).

Some words name a single thing, for example, “Aristotle,” “Bill Gates,” and “Billy the Kid.” Other words are general or “universal” and apply to more than one thing, for example, “tree,” “philosopher,” “horse,” or “beautiful.” The so-called problem of universals concerns how these universal words could have meaning.

Pretty clearly, names for single things, such as “Billy the Kid,” get their meaning by designating things that exist in the world outside the mind. But what about universal words? Do the words “tree,” “philosopher,” and “beautiful” denote things that exist in the world outside the mind? Those who believe they do subscribe to the theory of **realism**. Those who believe universal words correspond only to concepts in the mind agree with the theory of **conceptualism**. And those who think you can account for universal words without invoking universals as real things out there in the world or as

concepts in the mind subscribe to the theory of **nominalism**.

Why is this issue important? For one thing, Christian belief held that the Father, the Son, and the Holy Spirit—three individual things—are the selfsame thing, God. The word “God,” therefore, applies to more than a single thing and in this respect is a universal word. Furthermore, when Adam and Eve ate the apple, thereby committing “original sin,” the sin tainted *humankind*, and that is why all people need baptism. “Humankind,” of course, is a universal word.

Thus, the status of universals is important from a Christian standpoint. If only individual things exist, as nominalists maintain, then the three individuals of the Trinity must be three separate individuals—that is, three gods rather than one. If only individual things exist, then only the *individuals* Adam and Eve sinned. Thus, humankind is not tainted by original sin because there is no universal humankind.

Plato was the first to raise the question of universals. Plato’s Forms are universal things existing outside the mind (if they really exist).

encountered Aristotle’s philosophy through Arabian commentaries on Aristotle and through Latin translations of Arab translations of Greek texts. Because Aristotle’s repudiation of Plato’s realm of Forms seemed at odds with Christian philosophy, which was Augustinian and Platonic in outlook, some Church thinkers (notably one named Bonaventura, 1221–1274) thought it necessary to reject Aristotle. Others (notably one called Albert the Great, 1193–1280) came to regard Aristotle as the greatest of all philosophers and concluded that there must be an underlying accord between Christian principles and Aristotle’s philosophy.

The most important of those who belonged to the second group was **St. Thomas Aquinas** [uh-QUYNE-nuss] (1225–1274), whose philosophy was deemed by Pope Leo XIII in 1879 to be the official Catholic philosophy. To this day Aquinas’ system is taught in Catholic schools as the correct philosophy, and so Aquinas’ thought continues to affect living people directly.

Aquinas had access to translations of Aristotle’s works that were directly from the Greek (not Latin translations of Arab translations), and his knowledge of Aristotle was considerable and profound. In a manner similar to that in which Augustine had mixed Platonic philosophy with Christianity, Aquinas blended Christianity with the philosophy of Aristotle, in effect grafting the principles and distinctions of the Greek philosopher to Christian revealed truth. The result was a

complete Christian philosophy, with a theory of knowledge, a metaphysics, ethical and political philosophies, and a philosophy of law. Expect to encounter Aquinas again in this book.

Another way in which Aquinas is important is this. In Aquinas' time a distinction was finally beginning to be made between *philosophy* and *theology*. No person was more concerned with tracing the boundaries of the two fields than was Aquinas. His main idea was that philosophy is based on precepts of reason and theology on truths of revelation held on faith.

Aquinas was convinced that there is a real external world ordered by law and that human beings truly can have knowledge of that world. He did not believe that reality was a product of the human mind, nor was he sympathetic to attacks on the value of the sciences. However, Aquinas held that even though we can have true knowledge of the natural world, such knowledge is insufficient. It does not take into account the other realm — namely, the realm of supernatural truth. Large portions of this realm are inaccessible by human reason, Aquinas held, including the most profound aspects of Christian belief: the Trinity, God's taking on human form, and Christ's resurrection. Such mysteries are beyond our ability to adequately comprehend through reason.

Although such mysteries were beyond human reason, Aquinas believed they were not contrary to human reason. He held that there can be only one truth, part of which is accessible to human reason and part of which requires faith. Human reason, for Aquinas, could know of the existence of God and also that there can be but one God. However, other aspects of God's being are less available to human reason. In the end, philosophy serves as a handmaiden for theology — and reason as an instrument of faith.

Some of the main points of Aquinas' metaphysics may be summarized as follows. *Change*, Aquinas thought, can be explained using the Aristotelian four-cause theory: the efficient cause is that which produces the change; the material cause is the stuff that changes; the formal cause is the form the stuff takes; and the final cause is what explains why there was a change.

All physical things are composed of matter and form, he said, following Aristotle. Matter, which remains constant throughout a change, is that which a thing is made out of, and form is that which determines what sort of thing it is. By virtue of being separate clumps of matter, these two rocks are different, and by virtue of having the same form, these two rocks are both rocks and thus are the same. Contrary to the Platonic-Augustinian tradition, Aquinas held that the form of a thing cannot exist apart from matter.

But Aquinas went beyond Aristotle to point out that, besides the composition of matter and form in things, there is also a composition of its essence (matter plus form) and its existence. *What* something is (its essence) is not the same as *that* it is (its existence); otherwise, it would always exist, which is contrary to fact. Further, if existing were identical with any one kind of thing, everything existing would be only that one kind — again, contrary to fact. Aquinas made a unique contribution to metaphysics by highlighting that existence is the most important actuality in anything, without which even form (essence) cannot be actual.

Moreover, Aquinas also emphasized that nothing could cause its own existence, because it would already need to exist (as cause) before it existed (as effect),



According to the philosophy of Aquinas, these rocks are separate and distinct clumps of *matter*, but they all have the same *form* and thus are all rocks. Likewise, all physical things are composed of *matter* and *form*. Further, *what* something is (its *essence*: matter plus form) is distinct from the fact *that* it is (its *existence*).

which is a contradiction. So anything that begins to exist is caused to exist by something already existing and, ultimately, by an Uncaused Cause of Existence, God. Thus, Aquinas went beyond Aristotle's concept of God as Pure Act (because God is changeless, without beginning or end) to an understanding of God as Pure Act of Existence.

Some aspects of God's nature can be known. We can know that God is the perfect being that exists in himself yet is the source of the known universe. It is only through the Scriptures, however, that humans can know how creation represents the realization of the Divine Ideas (Plato in substantially changed form).

Thomistic *cosmology* (theory of the universe as an ordered whole) is based on a geocentric view of the universe, and this is also true of Aquinas' psychology. The earth is the center of the universe, and the human being is the center of the earth's existence. Remember that Aristotle believed that matter is passive and that the form is the effective, active principle of a thing. For Aquinas, the "essential form" of the human body is the soul. The soul, of course, is nothing physical; it is a pure form without matter. As a pure form, the soul is indestructible and immortal. It is, indeed, the principle of activity and life of the person. In addition, the soul is immortal in its individual form: each person's soul, unique to her or him, is immortal. Each soul is a direct creation of God and does not come from human parents. It stands in a relationship of mutual interdependency relative to the body. A human being is a *unity* of body and soul. Aquinas taught that without the soul the body

Why Do Humans Stand Upright?

For four reasons, said Aquinas:

1. Animals use their sense organs for seeking food. Because the sense organs are located mostly in the face, their faces are turned to the ground. Humans, by contrast, also use the senses to pursue truth, and for this purpose it is better that they are able to look up and about.
2. The brain functions better when it is above the other parts of the body.
3. If we walked on all fours, our hands would not be available for other purposes.
4. If we walked on all fours, we would have to take hold of food with our mouths, which would re-

quire our lips and tongue to be thick and hard, hindering speech.

In short, we walk erect because certain purposes (communicating, seeking truth, using our hands and brain) are best served by doing so. This is a **teleological explanation**, the type of explanation that we mentioned in connection with Aristotle in Chapter 4. Explanations like this, which refer to a “final cause,” imply a designing intelligence that determines the purpose served by the characteristics of a species.

would be formless and that without a body the soul would have no access to knowledge derived from sensation.

Aquinas’ epistemology was built on Aristotle’s notion of three powers of the soul, namely, the vegetative (e.g., reproduction), animal (e.g., sensation), and human (e.g., the understanding). Aquinas also agreed with Aristotle’s idea that human knowing is relatively passive and receptive. Knowledge is reached when the picture in the understanding agrees with what is present in reality (*adaequatio rei et intellectus*). Such knowledge is empirical in that it has its source in experience and is based on sense perceptions rather than on participation in the Divine Ideas. However, sense experience always accesses individually existing things; what leads to knowledge is the discovery of the essence of things that represents their definition. The discovery of essences requires imagination and human intelligence.

A final consideration of Aquinas’ thinking concerns his proofs for the existence of God. We will examine them in detail in Chapter 13 but mention here that the proofs are variations on the idea that things must have an ultimate cause, creator, designer, source of being, or source of goodness: namely, God. Our knowledge of God’s *nature*, however, is in terms of what God is *not*. For example, because God is unmoved and unchangeable, God is eternal. Because he is not material and is without parts, he is utterly simple. And because he is not a composite, he is not a composite of essence and existence: his essence is his existence.

Aquinas believed that the task of the wise person is to find both order and reason in the natural world. It is in the systematic ordering of the complexities of reality that human greatness can be found. Aquinas created a philosophical/theological system during the zenith hour in the power of the Church and of the pope, and interest in it experienced a strong revival in the nineteenth and twentieth centuries. These ideas continue to play a vital role in the Church as an institution and in religion as a governing factor in daily life.



SELECTION 5.1

Confessions*

St. Augustine

[When you think about it, neither the past nor the future exists, and the present has no duration. What, then, is left of time? In this famous selection from his *Confessions*, Augustine presents his thoughts on these and related puzzles—and offers a solution to them.]

Book XI—Time and Eternity

What is time? Who can explain this easily and briefly? Who can comprehend this even in thought so as to articulate the answer in words? Yet what do we speak of, in our familiar everyday conversation, more than of time? We surely know what we mean when we speak of it. We also know what is meant when we hear someone else talking about it. What then is time? Provided that no one asks me, I know. If I want to explain it to an inquirer, I do not know. But I confidently affirm myself to know that if nothing passes away, there is no past time, and if nothing arrives, there is no future time, and if nothing existed there would be no present time. Take the two tenses, past and future. How can they “be” when the past is not now present and the future is not yet present? Yet if the present were always present, it would not pass into the past: it would not be time but eternity. If then, in order to be time at all, the present is so made that it passes into the past, how can we say that this present also “is”? The cause of its being is that it will cease to be. So indeed we cannot truly say that time exists except in the sense that it tends towards non-existence.

xv (18) Nevertheless we speak of “a long time” and “a short time,” and it is only of the past or the future that we say this. Of the past we speak of “a long time,” when, for example, it is more than a hundred years ago. “A long time” in the future may mean a hundred years ahead. By “a short time ago” we would mean, say, ten days back, and “a short time ahead” might mean “in ten days’ time.” But how can something be long or short which does not

exist? For the past now has no existence and the future is not yet. So we ought not to say of the past “it is long,” but “it was long,” and of the future “it will be long.” My Lord, my light, does not your truth mock humanity at this point? This time past which was long, was it long when it was past or when it was still present? It could be long only when it existed to be long. Once past, it no longer was. Therefore it could not be long if it had entirely ceased to exist.

Therefore let us not say “The time past was long.” For we cannot discover anything to be long when, after it has become past, it has ceased to be. But let us say “That time once present was long” because it was long at the time when it was present. For it had not yet passed away into non-existence. It existed so as to be able to be long. But after it had passed away, it simultaneously ceased to be long because it ceased to be.

(19) Human soul, let us see whether present time can be long. To you the power is granted to be aware of intervals of time, and to measure them. What answer will you give me? Are a hundred years in the present a long time? Consider first whether a hundred years can be present. For if the first year of the series is current, it is present, but ninety-nine are future, and so do not yet exist. If the second year is current, one is already past, the second is present, the remainder lie in the future. And so between the extremes, whatever year of this century we assume to be present, there will be some years before it which lie in the past, some in the future to come after it. It follows that a century could never be present.

Consider then whether if a single year is current, that can be present. If in this year the first month is current, the others lie in the future: if the second, then the first lies in the past and the rest do not yet exist. Therefore even a current year is not entirely present; and if it is not entirely present, it is not a year which is present. A year is twelve months, of which any month which is current is present; the others are either past or future. Moreover, not even a month which is current is present, but one day. If

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the first day, the others are future; if the last day, the others are past; any intermediary day falls between past and future.

(2) See—present time, which alone we find capable of being called long, is contracted to the space of hardly a single day. But let us examine that also: for not even one day is entirely present. All the hours of night and day add up to twenty-four. The first of them has the others in the future, the last has them in the past. Any hour between these has past hours before it, future hours after it. One hour is itself constituted of fugitive moments. Whatever part of it has flown away is past. What remains to it is future. If we can think of some bit of time which cannot be divided into even the smallest instantaneous moments, that alone is what we can call “present.” And this time flies so quickly from future into past that it is an interval with no duration. If it has duration, it is divisible into past and future. But the present occupies no space.

Where then is the time which we call long? Is it future? We do not really mean “It is long,” since it does not yet exist to be long, but we mean it will be long. When will it be long? If it will then still lie in the future, it will not be long, since it will not yet exist to be long. But if it will be long at the time when, out of the future which does not yet exist, it begins to have being and will become present fact, so that it has the potentiality to be long, the present cries out in words already used that it cannot be long.

xvi (21) Nevertheless, Lord, we are conscious of intervals of time, and compare them with each other, and call some longer, others shorter. We also measure how much longer or shorter one period is than another, and answer that the one is twice or three times as much as the other, or that the two periods are equal. Moreover, we are measuring times which are past when our perception is the basis of measurement. But who can measure the past which does not now exist or the future which does not yet exist, unless perhaps someone dares to assert that he can measure what has no existence? At the moment when time is passing, it can be perceived and measured. But when it has passed and is not present, it cannot be.

xvii (22) I am investigating, Father, not making assertions. My God, protect me and rule me (Ps. 22:1; 27:9). Who will tell me that there are not three times, past, present, and future, as we learnt when children and as we have taught children, but only the present, because the other two have no ex-

istence? Or do they exist in the sense that, when the present emerges from the future, time comes out of some secret store, and then recedes into some secret place when the past comes out of the present? Where did those who sang prophecies see these events if they do not yet exist? To see what has no existence is impossible. And those who narrate past history would surely not be telling a true story if they did not discern events by their soul’s insight. If the past were non-existent, it could not be discerned at all. Therefore both future and past events exist.

xviii (23) Allow me, Lord, to take my investigation further. My hope, let not my attention be distracted. If future and past events exist, I want to know where they are. If I have not the strength to discover the answer, at least I know that wherever they are, they are not there as future or past, but as present. For if there also they are future, they will not yet be there. If there also they are past, they are no longer there. Therefore, wherever they are, whatever they are, they do not exist except in the present. When a true narrative of the past is related, the memory produces not the actual events which have passed away but words conceived from images of them, which they fixed in the mind like imprints as they passed through the senses. Thus my boyhood, which is no longer, lies in past time which is no longer. But when I am recollecting and telling my story, I am looking on its image in present time, since it is still in my memory. Whether a similar cause is operative in predictions of the future, in the sense that images of realities which do not yet exist are presented as already in existence, I confess, my God, I do not know. At least I know this much: we frequently think out in advance our future actions, and that premeditation is in the present; but the action which we premeditate is not yet in being because it lies in the future. But when we have embarked on the action and what we were premeditating begins to be put into effect, then that action will have existence, since then it will be not future but present.

(24) Whatever may be the way in which the hidden presentiment of the future is known, nothing can be seen if it does not exist. Now that which already exists is not future but present. When therefore people speak of knowing the future, what is seen is not events which do not yet exist (that is, they really are future), but perhaps their causes or signs which already exist. In this way, to those who

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see them they are not future but present, and that is the basis on which the future can be conceived in the mind and made the subject of prediction.

Again, these concepts already exist, and those who predict the future see these concepts as if already present to their minds.

Among a great mass of examples, let me mention one instance. I look at the dawn. I forecast that the sun will rise. What I am looking at is present, what I am forecasting is future. It is not the sun which lies in the future (it already exists) but its rise, which has not yet arrived. Yet unless I were mentally imagining its rise, as now when I am speaking about it, I could not predict it. But the dawn glow which I see in the sky is not sunrise, which it precedes, nor is the imagining of sunrise in my mind the actuality. These are both discerned as present so that the coming sunrise may be foretold.

So future events do not yet exist, and if they are not yet present, they do not exist; and if they have no being, they cannot be seen at all. But they can be predicted from present events which are already present and can be seen. . . .

xx (26) What is by now evident and clear is that neither future nor past exists, and it is inexact language to speak of three times—past, present, and future. Perhaps it would be exact to say: there are three times, a present of things past, a present of things present, a present of things to come. In the soul there are these three aspects of time, and I do not see them anywhere else. The present considering the past is the memory, the present considering the present is immediate awareness, the present considering the future is expectation. If we are allowed to use such language, I see three times, and I admit they are three. Moreover, we may say, There are three times, past, present, and future. This customary way of speaking is incorrect, but it is common usage. Let us accept the usage. I do not object and offer no opposition or criticism, as long as what is said is being understood, namely that neither the future nor the past is now present. There are few usages of everyday speech which are exact, and most of our language is inexact. Yet what we mean is communicated.

xxi (27) A little earlier I observed that we measure past periods of time so that we can say that one period is twice as long as another or equal to it, and likewise of other periods of time which we are capable of measuring and reporting. Therefore, as I was saying, we measure periods of time as they

are passing, and if anyone says to me “How do you know?” I reply: I know it because we do measure time and cannot measure what has no being; and past and future have none. But how do we measure present time when it has no extension? It is measured when it passes, but not when it has passed, because then there will be nothing there to measure.

When time is measured, where does it come from, by what route does it pass, and where does it go? It must come out of the future, pass by the present, and go into the past; so it comes from what as yet does not exist, passes through that which lacks extension, and goes into that which is now non-existent. Yet what do we measure but time over some extension? When we speak of lengths of time as single, double, triple, and equal, or any other temporal relation of this kind, we must be speaking of periods of time possessing extension. In what extension then do we measure time as it is passing? Is it in the future out of which it comes to pass by? No, for we do not measure what does not yet exist. Is it in the present through which it passes? No, for we cannot measure that which has no extension. Is it in the past into which it is moving? No, for we cannot measure what now does not exist. . . .

xxiv (31) Do you command me to concur if someone says time is the movement of a physical entity? You do not. For I learn that no body can be moved except in time. You tell me so, but I do not learn that the actual movement of a body constitutes time. That is not what you tell me. For when a body is moved, it is by time that I measure the duration of the movement, from the moment it begins until it ends. Unless I have observed the point when it begins, and if its movement is continuous so that I cannot observe when it ceases, I am unable to measure except for the period from the beginning to the end of my observation. If my observing lasts for a considerable time, I can only report that a long time passed, but not precisely how much. When we say how much, we are making a comparison—as, for example, “This period was of the same length as that,” or “This period was twice as long as that,” or some such relationship.

If, however, we have been able to note the points in space from which and to which a moving body passes, or the parts of a body when it is spinning on its axis, then we can say how much time the movement of the body or its parts required to move from one point to another. It follows that a body’s move-

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ment is one thing, the period by which we measure is another. It is self-evident which of these is to be described as time. Moreover, a body may at one point be moving, at another point at rest. We measure by time and say “It was standing still for the same time that it was in movement,” or “It was still for two or three times as long as it was in movement,” or any other measurement we may make, either by precise observation or by a rough estimate (we customarily say “more or less”). Therefore time is not the movement of a body. . . .

xxvii (34) Stand firm, my mind, concentrate with resolution. “God is our help, he has made us and not we ourselves” (Ps. 61:9; 99:3). Concentrate on the point where truth is beginning to dawn. For example, a physical voice begins to sound. It sounds. It continues to sound, and then ceases. Silence has now come, and the voice is past. There is now no sound. Before it sounded it lay in the future. It could not be measured because it did not exist; and now it cannot be measured because it has ceased to be. At the time when it was sounding, it was possible because at that time it existed to be measured. Yet even then it had no permanence. It came and went. Did this make it more possible to measure? In process of passing away it was extended through a certain space of time by which it could be measured, since the present occupies no length of time. Therefore during that transient process it could be measured. But take, for example, another voice. It begins to sound and continues to do so unflaggingly without any interruption. Let us measure it while it is sounding; when it has ceased to sound, it will be past and will not exist to be measurable. Evidently we may at that stage measure it by saying how long it lasted. But if it is still sounding, it cannot be measured except from the starting moment when it began to sound to the finish when it ceased. What we measure is the actual interval from the beginning to the end. That is why a sound which has not yet ended cannot be measured: one cannot say how long or how short it is, nor that it is equal to some other length of time or that in relation to another it is single or double or any such proportion. But when it has come to an end, then it will already have ceased to be. By what method then can it be measured?

Nevertheless we do measure periods of time. And yet the times we measure are not those which do not yet exist, nor those which already have no existence, nor those which extend over no interval of

time, nor those which reach no conclusions. So the times we measure are not future nor past nor present nor those in process of passing away. Yet we measure periods of time.

(35) “God, Creator of all things”—*Deus Creator omnium*—the line consists of eight syllables, in which short and long syllables alternate. So the four which are short (the first, third, fifth, and seventh) are single in relation to the four long syllables (the second, fourth, sixth, and eighth). Each of the long syllables has twice the time of the short. As I recite the words, I also observe that this is so, for it is evident to sense-perception. To the degree that the sense-perception is unambiguous, I measure the long syllable by the short one, and perceive it to be twice the length. But when one syllable sounds after another, the short first, the long after it, how shall I keep my hold on the short, and how use it to apply a measure to the long, so as to verify that the long is twice as much? The long does not begin to sound unless the short has ceased to sound. I can hardly measure the long during the presence of its sound, as measuring becomes possible only after it has ended. When it is finished, it has gone into the past. What then is it which I measure? Where is the short syllable with which I am making my measurement? Where is the long which I am measuring? Both have sounded; they have flown away; they belong to the past. They now do not exist. And I offer my measurement and declare as confidently as a practised sense-perception will allow, that the short is single, the long double—I mean in the time they occupy. I can do this only because they are past and gone. Therefore it is not the syllables which I am measuring, but something in my memory which stays fixed there.

(36) So it is in you, my mind, that I measure periods of time. Do not distract me; that is, do not allow yourself to be distracted by the hubbub of the impressions being made upon you. In you, I affirm, I measure periods of time. The impression which passing events make upon you abides when they are gone. That present consciousness is what I am measuring, not the stream of past events which have caused it. When I measure periods of time, that is what I am actually measuring. Therefore, either this is what time is, or time is not what I am measuring.

What happens when we measure silences and say that a given period of silence lasted as long as a given sound? Do we direct our attention to measuring it as if a sound occurred, so that we are

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enabled to judge the intervals of the silences within the space of time concerned? For without any sound or utterance we mentally recite poems and lines and speeches, and we assess the lengths of their movements and the relative amounts of time they occupy, no differently from the way we would speak if we were actually making sounds. Suppose someone wished to utter a sound lasting a long time, and decided in advance how long that was going to be. He would have planned that space of time in silence. Entrusting that to his memory he would begin to utter the sound which continues until it has reached the intended end. It would be more accurate to say the utterance has sounded and will sound. For the part of it which is complete has sounded, but what remains will sound, and so the action is being accomplished as present attention transfers the future into the past. The future diminishes as the past grows, until the future has completely gone and everything is in the past.

xxviii (37) But how does this future, which does not yet exist, diminish or become consumed? Or how does the past, which now has no being, grow, unless there are three processes in the mind which in this is the active agent? For the mind expects and attends and remembers, so that what it expects passes through what has its attention to what it remembers. Who therefore can deny that the future does not yet exist? Yet already in the mind there is an expectation of the future. Who can deny that the past does not now exist? Yet there is still in the mind a memory of the past. None can deny that present time lacks any extension because it passes in a flash. Yet attention is continuous, and it is through this that what will be present progresses towards being absent. So the future, which does not exist, is not a long period of time. A long future is a long expectation of the future. And the past, which has no existence, is not a long period of time. A long past is a long memory of the past.

CHECKLIST

To help you review, here is a checklist of the key philosophers and terms and concepts of this chapter. The brief descriptive sentences summarize the philosophers' leading ideas. Keep in mind that some of these summary statements are oversimplifications of complex positions.

Philosophers

- **Plotinus** held that reality emanates from the One.
- **St. Augustine** provided Platonic philosophical justification for the Christian belief in a nonmaterial God, rejected skepticism, and diagnosed the cause of error in sense perception.
- **Pyrrho** held that every theory can be opposed by an equally valid contradictory theory; we must suspend judgment on all issues.
- **Sextus Empiricus** was the most famous total skeptic. He held the position "I do not know whether knowledge is possible."
- **Hypatia** instructed students in Plato, Aristotle, Plotinus, and Ptolemy and improved the mathematical rigor of Ptolemy's astronomical

theories, stressing the importance of philosophy and mathematics to life.

- **St. Thomas Aquinas** blended Christianity with the philosophy of Aristotle, delineating the boundary between philosophy and theology.

Key Terms and Concepts

Hellenistic age	<i>ataraxia</i>
Skepticism	<i>agoge</i>
Neoplatonism	principle of noncontradiction
creation <i>ex nihilo</i>	universals
total versus modified	realism
skeptic	conceptualism
Academics	nominalism
Pyrrhonists	teleological explanation
Ten Tropes	
<i>epoché</i>	

QUESTIONS FOR DISCUSSION AND REVIEW

1. Compare and contrast the views of the Academics and the Pyrrhonists.
2. "Nothing can be known." What is a powerful objection to this claim?

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3. “I do not know whether knowledge is possible.” Defend or attack this claim.
4. Defend some version of total skepticism.
5. What is creation *ex nihilo*? State a reason for thinking that creation *ex nihilo* is impossible.
6. Explain the difference between realism, conceptualism, and nominalism. Which theory is the most plausible, and why?
7. Billy the Kid cannot be in more than one place at a given time. Can Billy the Kid’s *height* (five feet four inches) be in more than one place? Explain.
8. Can we say only what God is not?
9. Give a teleological explanation of why polar bears have white fur.

SUGGESTED FURTHER READINGS

Julia Annas and Jonathan Barnes, *The Modes of Scepticism: Ancient Texts and Modern Interpretations* (Cambridge: Cambridge University Press, 1985). Reflects the revival of interest in ancient skepticism. Excellent.

Augustine, *Against the Academics*, vol. 3, Sister Mary Patricia Garvey, trans. (Milwaukee: Marquette University Press, 1957). Contains easy-to-understand arguments against skepticism.

Augustine, *Confessions*, The, Maria Boulding, trans. (New York: New City Press, 1998). Much in this is not purely philosophical, but most of it is interesting.

Augustine, *Confessions*, Henry Chadwick, trans. (New York: Oxford University Press, 1998). A new translation with an introduction by the translator.

Marcus Aurelius, *Meditations*, Gregory Hays, trans. (London: Weidenfeld and Nicolson, 2003). A new, readable translation of the writings of the Stoic Roman emperor.

Robert Black, ed., *Renaissance Thought: A Reader*. (New York: Routledge, 2001). Essays by modern writers on Renaissance humanism, philosophy, and political thought.

John Burnet, *Early Greek Philosophy*, 4th ed. (London: Macmillan, originally published in 1930). This is a standard work on early Greek philosophy.

William Carter, *The Way Things Are: Basic Readings in Metaphysical Philosophy* (New York: McGraw-Hill, 1998). Readings from the Anglo-American approach to key metaphysical problems.

- Henry Chadwick, *Augustine: A Very Short Introduction* (New York: Oxford University Press, 2001). Said by reviewers to be the best brief introduction to Augustine’s context and thought.
- M. T. Clark, ed., *An Aquinas Reader* (New York: Image Books, 1955). Aquinas wrote too much to read it all; a reader like this one may prove useful.
- Brian Davies, *The Thought of Thomas Aquinas* (New York: Oxford University Press, 1992). An introduction, but demanding.
- Lloyd P. Gerson, *Plotinus* (London: Routledge, 1994). A major treatise on the philosophy of Plotinus.
- E. Gilson, *History of Christian Philosophy in the Middle Ages* (New York: Random House, 1955). A work by one of the foremost medieval authorities. See also Gilson’s *The Christian Philosophy of Saint Augustine*, L. Lynch, trans. (New York: Random House, 1960), and *The Christian Philosophy of St. Thomas Aquinas*, L. Shook, trans. (New York: Random House, 1956).
- Philip P. Hallie, ed., *Scepticism, Man, and God: Selections from the Major Writings of Sextus Empiricus* (Middletown, Conn.: Wesleyan University Press, 1964). Clear, readable, authoritative.
- R. J. Hankinson, *The Sceptics* (New York: Routledge, 1995). An up-to-date consideration of the philosophical issues within the Greek skeptical tradition.
- Christopher Hookway, *Scepticism* (New York: Routledge, 1990). A review of the historical development of skepticism and its consequences for present-day thought and action.
- Brad Inwood and L. P. Gerson, trans., *Hellenistic Philosophy, Introductory Readings* (Indianapolis: Hackett, 1988). A well-chosen selection of readings from Stoicism, Epicureanism, and Skepticism.
- G. S. Kirk, J. E. Raven, and M. Schofield, *The Presocratic Philosophers: A Critical History with a Selection of Texts*, 2nd ed. (Cambridge: Cambridge University Press, 1983). This is a comprehensive treatment of the pre-Socratics.
- Charles Landesmann and Robin Meeks, *Philosophical Skepticism* (Malden, Mass.: Blackwell, 2003). A useful collection of writings on traditional skeptics and their opponents.
- Benson Mates, ed. and trans., *The Skeptic Way: Sextus Empiricus’s Outlines of Pyrrhonism* (New York: Oxford University Press, 1996). A recent translation, with commentary and an introduction.
- Dominic J. O’Meara, *Plotinus, An Introduction to the Enneads* (New York: Oxford University Press, 1993). Suitable for beginners.

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Mark Morford, *The Roman Philosophers* (New York: Routledge, 2002). A review of the Roman thinkers who are still very much influencing our time.

Jason L. Saunders, ed., *Greek and Roman Philosophy after Aristotle* (New York: The Free Press, 1994). A useful and accessible collection of texts of Hellenistic philosophers.

R. W. Sharples, *Stoics, Epicureans and Sceptics* (New York: Routledge, 2002). A basic account of the Stoic,

Epicurean, and skeptic philosophies from 323 B.C.E. to 200 C.E.

Mary Ellen Waithe, “Finding Bits and Pieces of Hypatia,” in Linda Lopez McAlister, ed., *Hypatia’s Daughters* (Indianapolis: Indiana University Press, 1995).

Julius R. Weinberg, *A Short History of Medieval Philosophy* (Princeton: Princeton University Press, 1991). A survey of the main philosophers from Augustine to William of Ockham.