

BATI FELSEFESİ TARİHİ

DERS NOTLARI

suggested that Western thinkers are invariably either Platonic or Aristotelean. That is, each of us is inclined either toward the abstract, speculative, intellectual apprehension of reality, as Plato was, or toward the concrete, practical, sensory appreciation of reality, as Aristotle was. The differences between the two approaches may be too fundamental for argumentation or debate, but the coordination or synthesis of the two together is extremely difficult, so choice may be required.

Certainly the philosophy of the Middle Ages, to which we will devote the remainder of this semester, exhibits some form of this division. As Christian thinkers tried to find ways of accommodating their religious doctrines to the tradition of Greek philosophy, some version of Plato and some version of Aristotle were significant factors in their development.

Hellenistic Philosophy

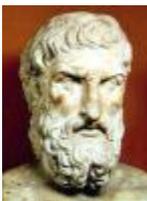
The Hellenistic World

The great golden age of Athenian philosophy, encompassing Socrates, Plato, and Aristotle only lasted for about a hundred years. In the centuries that followed, changes in the political and cultural climate of the ancient world tended to discourage many varieties of philosophical thinking. The Macedonians under Philip and Alexander founded a Greek empire, which was later conquered by the Romans. Although the general culture of this "Hellenistic" period remained Greek in spirit, political power was vested in a highly centralized state, established and maintained primarily through extensive applications of military force. The (sometime) Athenian tradition of participatory government disappeared as individual citizens were excluded from significantly shaping the social structure of their lives.

Hellenistic philosophers, therefore, devoted less attention than had Plato and Aristotle to the speculative construction of an ideal state that would facilitate the achievement of a happy life. Instead, the ethical thinkers of this later period focussed upon the life of the individual, independently of the society as a whole, describing in detail the kinds of character and action that might enable a person to live well despite the prevailing political realities. In general, we might say, such philosophers tried to show how we should live when circumstances beyond our control seem to render pointless everything we try to accomplish. The Hellenistic schools of philosophy, then, exhibit less confidence and propose solutions less radical than their Athenian predecessors had in the golden era.

Epicurus and the Epicureans

The ancient atomists (Leucippus and Democritus) had already worked out a systematic description of the natural world comprising many particular material particles, whose mechanical interactions account for everything that happens. In the Hellenistic period, attention turned to the consequences of such a view for the conduct of human life.



Epicurus

Epicurus and his followers pointed out (in the *Principle Doctrines*, for example) that since the indestructible atoms that constitute the material world move, swerve, and collide entirely by chance, everything that happens in the universe lies outside the reach of direct human control. (Notice how this position projects Hellenistic political impotence onto the natural world.) Human life is, therefore, essentially passive: all we can do is to experience what goes on, without supposing ourselves capable of changing it. Even so, Epicurus held that this sort of life may be a good one, if the experiences are mostly pleasant ones.

Thus, in the *Letter to Menoeceus*, Epicurus held that the proper goal of human life is to achieve mental ease {Gk. ἀταραξία [ataraxia]} and freedom from pain. All of our sensual desires are natural and their satisfaction is to be desired, since satiation is always a pleasure but frustrated desire is a mild pain. Material goods are worthwhile only to the extent that possessing them contributes to the achievement of peace. What is more, Epicurus held that we have no reason to complain of the fact that human life must come to an end. Since death results in the annihilation of the personality, he argued, it cannot be experienced and is thus nothing to be feared. Thus, Epicureanism was long ago summarized as the view recommending that we "relax, eat, drink, be merry." (*Luke 12:19-20*)

The parody is accurate as far as it goes: Epicurus did suppose that a successful life is one of personal fulfillment and the attainment of happiness within this life. But the philosophical Epicureans were less confident than many of their later imitators about the prospects for achieving very much pleasure in ordinary life. They emphasized instead the mental peace that comes from accepting whatever happens without complaint or struggle. Notice again that this is a reasonable response to a natural world and social environment that do not provide for effective individual action.

The Roman philosopher Lucretius defended a similar set of theses, including both atomism in general and an Epicurean devotion to tranquillity in his philosophical poem *De Rerum Naturae* (*On the Nature of Things*).

Epictetus and the Stoics

A rival school of philosophy in Athens was that of the Stoics. As originally developed by Zeno of Citium and Chrysippus, stoicism offered a comprehensive collection of human knowledge encompassing formal logic, physical study of the natural world, and a thoroughly naturalistic explanation of human nature and conduct. Since each human being is a microcosm of the universe as a whole, they supposed, it is possible to employ the same methods of study to both life and nature equally.



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In the Hellenistic period, Epictetus tersely noted the central features of a life thusly lived according to nature in his *Encheiridion (Manual)*. Once again, the key is to understand how little of what happens is within our control, and stoicism earns its reputation as a stern way of life with recommendations that we accept whatever fate brings us without complaint, concern, or feeling of any kind. Since family, friends, and material goods are all perishable, Epictetus held, we ought never to become attached to them. Instead, we treat everything and everyone we encounter in life as a temporary blessing (or curse), knowing that they will all pass away from us naturally.

This seems cold and harsh advice indeed, but it works! If, indeed, we form no attachments and care about nothing, then loss will never disturb the tranquillity and peace of our lives. This way of life can be happy even for a slave like Epictetus. But later Roman Stoics like Seneca and Marcus Aurelius made clear in their lives and writings that it has merits even for those who are better-off.

Philosophical Ethics

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The Ancient Sceptics

Another school of Hellenistic philosophy illustrates yet again the prevailing lack of confidence that life in this era inspired. The skeptics supposed that the possibility of human knowledge is severely limited in scope and application.

Skepticism began with Pyrrho of Elis, who taught that apart from the sketchy information provided by the senses, we have no genuine knowledge of the nature of things. Unable to achieve certainty about the general structure of the world, human beings should often practice suspension of judgment, which is the only rational response to situations in which they are ignorant. This course naturally results in a nearly total lack of activity, which Pyrrho took to be equivalent to peace of mind. Although he wrote nothing, Pyrrho exerted a powerful influence on succeeding generations through his disciple, Timon of Phlius and members of the later Academy.

Centuries later, Sextus Empiricus wrote a history of skeptical philosophy, the *Outlines of Pyrrhonism*, and used the Pyrrhonian approach to criticize the pretensions of other schools of thought. He made it clear that the skeptical challenge to traditional theories of knowledge arises from an unusually strict definition of knowledge itself. If we can only be said properly to know what is absolutely certain or beyond doubt, then very little indeed will be known. Although it was widely ignored in his own time, the work of Sextus was instrumental in the modern revival of interest in skeptical philosophy.

Religion and Philosophy

Despite (or because of) the gloomy prospects held forward by these schools of philosophy, the later Hellenistic period also produced significant movement toward the consolidation of the older Greek philosophical tradition with the middle-eastern religions of Judaism and Christianity.

Philo Judaeus, for example, tried to develop a comprehensive view embracing both Plato and Judaism. This was no easy task, since the traditional religion of scripture was concrete and historically-rooted, while Plato's philosophy was extremely abstract and general. But since he supposed that the same deity had inspired human awareness of truth in both contexts, Philo maintained that synthesis must be possible. He interpreted the religious texts allegorically, finding in their structure clues and hints of the deeper philosophical truth. (Allegory is a dangerously

powerful tool; it often permits or even encourages the 'discovery' of nearly any doctrine you like even within the most straightforwardly prosaic texts. Perhaps "Green Eggs and Ham" is a deeply subversive expression of communist political ideology, while "Bert and Ernie" encourage a homosexual lifestyle, and) For Philo, the goodness of the one transcendent god is expressed through the divine word {Gk. λογος [logos]}, which is the organizing principle that accounts for everything in the cosmos.

The Christian church fathers were not far behind. The earliest among them either regarded philosophy as a source of heretical theology (Irenaeus) or offered general anti-intellectual tirades against the power of human reason (Tertullian). But Justin Martyr carefully noted the natural affinities between the emerging Christian theology and the traditions of thought deriving from Plato, and Origen explicitly endeavored to combine the two in a single system. This path of development continued for centuries, reaching its peak in Gregory of Nyssa and Ambrose, who was the teacher of Augustine.

Plotinus

The version of Platonic philosophy that came to be incorporated into the theology of the middle ages, however, had rather little to do with the thought of Plato himself. It was, instead, derived from the quasi-mystical writings of Plotinus. In an aphoristic book called the *Enneads*, Plotinus used Plato's fascination with the abstract forms of things as the starting-point for a comprehensive metaphysical view of the cosmos.

According to Plotinus, the form of the Good is the transcendent source of everything in the universe: from its central core other forms emanate outward, like the ripples in a pond, losing measures of reality along the way. Thus, although the early emanations retain much of the abstract beauty of their source, those out on the fringes of the cosmos have very little good left in them. Nevertheless, Plotinus supposed that careful examination of anything in the world could be used to lead us toward the central reality, if we use the information it provides as the basis for our reasoning about its origins in something more significant. In principle, progressive applications of this technique will eventually bring us to contemplation of the Good itself and knowledge of the nature of the universe.

But since the Good is both the cause of the universe and the source of its moral quality for Plotinus, philosophical study is a redemptive activity. Achievement of mystical union with the cause of the universe promises to provide us not only with knowledge but also with the true elements of virtue as well. It was this neoplatonic philosophy that the Christians found so well-suited to their own theological purposes. Once the Good is identified with the god of scripture, the details work themselves out fairly naturally. Thus, we'll find notions of this sort to be a popular feature of medieval philosophy.

Medieval Philosophy

Having devoted extensive attention to the development of philosophy among the ancient Greeks, we'll now cover more than a millenium of Western thought more briefly. The very name "medieval" (literally, "the in-between time") philosophy suggests the tendency of modern thinkers to skip rather directly from Aristotle to the Renaissance. What seemed to justify that attitude was the tendency of philosophers during this period to seek orthodoxy as well as truth.

Nearly all of the medieval thinkers—Jewish, Christian, and Muslim—were pre-occupied with some version of the attempt to synthesis philosophy with religion. Early on, the neoplatonism philosophy of Plotinus seemed to provide the most convenient intellectual support for religious doctrine. But later in the medieval era, thanks especially to the work of the Arabic-language

thinkers, Aristotle's metaphysics gained a wider acceptance. In every case, the goal was to provide a respectable philosophical foundation for theological positions. In the process, much of that foundation was effectively absorbed into the theology itself, so that much of what we now regard as Christian doctrine has its origins in Greek philosophy more than in the Biblical tradition.

Augustine: Christian Platonism



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The first truly great medieval philosopher was **Augustine of Hippo**, a North African rhetorician and devotee of Manichaeism who converted to Christianity under the influence of Ambrose and devoted his career to the exposition of a philosophical system that employed neoplatonic elements in support of Christian orthodoxy. The keynote of Augustine's method is "*Credo ut intellegiam*" ("I believe in order that I may understand"), the notion that human reason in general and philosophy in particular are useful only to those who already have faith.

Thus, for example, Augustine simply rejected the epistemological criticisms mounted by the Academic skeptics. Even if it were true that I am mistaken about nearly everything that I suppose to be true, he argued, one inescapable truth will remain: "*Si fallor, sum*" ("If I am mistaken, I exist"). [This doctrine is an interesting anticipation of **Descartes's** later attempt to establish knowledge on the phrase "*Cogito ergo sum*".] Upon this foundation, Augustine believed it possible to employ human faculties of sense and reason effectively in the pursuit of substantive knowledge of the world.

Human Life

Although **Augustine** was significantly influenced by the moral philosophy of Cicero, he generally argued that the Stoics were excessively optimistic in their assessment of human nature. One of Augustine's central contributions to the development of Christian theology was his heavy emphasis on the reality of human evil. Each one of us, he believed, is sinful by nature, and the account of his own life provided in the early portions of the *Confessions* makes it clear that he did not suppose himself to be an exception.

If, as Augustine certainly believed, the world and everything in it is the creation of a perfectly good god, then how can the human beings who constitute so prominent a part of that creation be inherently evil? Like **Plato** and **Plotinus**, but unlike the Manichaeans, Augustine now argued that evil is not anything real, but rather is merely the absence of good. Creation of human beings who

have the freedom to decide how to act on their own, he maintained, is so vital a part of the divine plan for the cosmos that it outweighs the obvious consequence that we nearly always choose badly.

But if human beings begin with original sin and are therefore inherently evil, what is the point of morality? Augustine held that the classical attempts to achieve virtue by discipline, training, and reason are all bound to fail. Thus, the redemptive action of god's grace alone offers hope. Again using his own life as an example, Augustine maintained that we can do nothing but wait for god to work with us in the production of a worthwhile life. (Our happiness never enters into the picture.)

God's Existence

That there is indeed a god, Augustine proved in fine Platonic fashion: Begin with the fact that we are capable of achieving mathematical knowledge, and remember that, as Plato demonstrated, this awareness transcends the sensory realm of appearances entirely. Our knowledge of eternal mathematical truths thus establishes the immateriality and immortality of our own rational souls. (So far, the argument is straight out of Plato's *Phaedo*.)

Augustine further argued that the eternal existence of numbers and of the mathematical relations that obtain among them requires some additional metaphysical support. There must be some even greater being that is the eternal source of the reality of these things, and that, of course, must be god. Thus, Augustine endorses a Plotinian concept of god as the central core from which all of reality emanates.

But notice that if the truths of mathematics depend for their reality upon the creative activity of the deity, it follows that god could change them merely by willing them to be different. This is an extreme version of a belief known as voluntarism, according to which $2 + 3 = 5$ remains true only so long as god wills it to be so. We can still balance our checkbooks with confidence because, of course, god invariably wills eternally. But in principle, Augustine held that even necessary truths are actually contingent upon the exercise of the divine will.

Human Freedom

This emphasis on the infinite power of god's will raises a significant question about our own capacity to will and to act freely. If, as Augustine supposed, god has infinite power and knowledge of every sort, then god can cause me to act in particular ways simply by willing that I do so, and in every case god knows in advance in what way I will act, long before I even contemplate doing so. From this, it would seem naturally to follow that I have no will of my own, cannot act of my own volition, and therefore should not be held morally responsible for what I do. Surely marionettes are not to be held accountable for the deeds they perform with so many strings attached.

Augustine's answer to this predicament lies in his analysis of time. A god who is eternal must stand wholly outside the realm of time as we know it, and since god is infinitely more real than we are, it follows that time itself does not exist at the level of the infinitely real. The passage of time, the directionality of knowledge, and all temporal relations are therefore nothing more than features of our limited minds. And it is within these limitations, Augustine supposed, that we feel free, act on our volitions, and are responsible for what we do. God's foreknowledge, grounded outside the temporal order, has no bearing on the temporal nature of our moral responsibility. Once again, a true understanding of the divine plan behind creation resolves every apparent conflict.

Hobbes's Leviathan

Thomas Hobbes



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Even more than Bacon, Thomas Hobbes illustrated the transition from medieval to modern thinking in Britain. His *Leviathan* effectively developed a vocabulary for philosophy in the English language by using Anglicized versions of the technical terms employed by Greek and Latin authors. Careful use of words to signify common ideas in the mind, Hobbes maintained, avoids the difficulties to which human reasoning is most obviously prone and makes it possible to articulate a clear conception of reality. (*Leviathan* I 4)

For Hobbes, that conception is bound to be a mechanistic one: the movements of physical objects will turn out to be sufficient to explain everything in the universe. The chief purpose of scientific investigation, then, is to develop a geometrical account of the motion of bodies, which will reveal the genuine basis of their causal interactions and the regularity of the natural world. Thus, Hobbes defended a strictly materialist view of the world.

Human Nature

Human beings are physical objects, according to Hobbes, sophisticated machines all of whose functions and activities can be described and explained in purely mechanistic terms. Even thought itself, therefore, must be understood as an instance of the physical operation of the human body. Sensation, for example, involves a series of mechanical processes operating within the human nervous system, by means of which the sensible features of material things produce ideas in the brains of the human beings who perceive them. (*Leviathan* I 1)

Human action is similarly to be explained on Hobbes's view. Specific desires and appetites arise in the human body and are experienced as discomforts or pains which must be overcome. Thus, each of us is motivated to act in such ways as we believe likely to relieve our discomfort, to preserve and promote our own well-being. (*Leviathan* I 6) Everything we choose to do is strictly determined by this natural inclination to relieve the physical pressures that impinge upon our bodies. Human volition is nothing but the determination of the will by the strongest present desire.

Hobbes nevertheless supposed that human agents are free in the sense that their activities are not under constraint from anyone else. On this compatibilist view, we have no reason to complain about the strict determination of the will so long as we are not subject to interference from outside ourselves. (*Leviathan* II 21)

As Hobbes acknowledged, this account of human nature emphasizes our animal nature, leaving each of us to live independently of everyone else, acting only in his or her own self-interest, without regard for others. This produces what he called the "state of war," a way of life that is certain to prove "solitary, poor, nasty, brutish, and short." (*Leviathan* I 13) The only escape is by entering into contracts with each other—mutually beneficial agreements to surrender our individual interests in order to achieve the advantages of security that only a social existence can provide. (*Leviathan* I 14)

Human Society

Unable to rely indefinitely on their individual powers in the effort to secure livelihood and contentment, Hobbes supposed, human beings join together in the formation of a commonwealth. Thus, the commonwealth as a whole embodies a network of associated contracts and provides for the highest form of social organization. On Hobbes's view, the formation of the commonwealth creates a new, artificial person (the Leviathan) to whom all responsibility for social order and public welfare is entrusted. (*Leviathan* II 17)

Of course, someone must make decisions on behalf of this new whole, and that person will be the sovereign. The commonwealth-creating covenant is not in essence a relationship between subjects and their sovereign at all. Rather, what counts is the relationship among subjects, all of whom agree to divest themselves of their native powers in order to secure the benefits of orderly government by obeying the dictates of the sovereign authority. (*Leviathan* II 18) That's why the minority who might prefer a different sovereign authority have no complaint, on Hobbes's view: even though they have no respect for this particular sovereign, they are still bound by their contract with fellow-subjects to be governed by a single authority. The sovereign is nothing more than the institutional embodiment of orderly government.

Since the decisions of the sovereign are entirely arbitrary, it hardly matters where they come from, so long as they are understood and obeyed universally. Thus, Hobbes's account explicitly leaves open the possibility that the sovereign will itself be a corporate person—a legislature or an assembly of all citizens—as well as a single human being. Regarding these three forms, however, Hobbes himself maintained that the commonwealth operates most effectively when a hereditary monarch assumes the sovereign role. (*Leviathan* II 19) Investing power in a single natural person who can choose advisors and rule consistently without fear of internal conflicts is the best fulfillment of our social needs. Thus, the radical metaphysical positions defended by Hobbes lead to a notably conservative political result, an endorsement of the paternalistic view.

Hobbes argued that the commonwealth secures the liberty of its citizens. Genuine human freedom, he maintained, is just the ability to carry out one's will without interference from others. This doesn't entail an absence of law; indeed, our agreement to be subject to a common authority helps each of us to secure liberty with respect to others. (*Leviathan* II 21) Submission to the sovereign is absolutely decisive, except where it is silent or where it claims control over individual rights to life itself, which cannot be transferred to anyone else. But the structure provided by orderly government, according to Hobbes, enhances rather than restricts individual liberty.

Whether or not the sovereign is a single hereditary monarch, of course, its administration of social order may require the cooperation and assistance of others. Within the commonwealth as a whole, there may arise smaller "bodies politic" with authority over portions of the lives of those who enter into them. The sovereign will appoint agents whose responsibility is to act on its behalf

in matters of less than highest importance. Most important, the will of the sovereign for its subjects will be expressed in the form of civil laws that have either been decreed or tacitly accepted. (*Leviathan* II 26) Criminal violations of these laws by any subject will be appropriately punished by the sovereign authority.

Despite his firm insistence on the vital role of the sovereign as the embodiment of the commonwealth, Hobbes acknowledged that there are particular circumstances under which it may fail to accomplish its purpose. (*Leviathan* II 29) If the sovereign has too little power, is made subject to its own laws, or allows its power to be divided, problems will arise. Similarly, if individual subjects make private judgments of right and wrong based on conscience, succumb to religious enthusiasm, or acquire excessive private property, the state will suffer. Even a well-designed commonwealth may, over time, cease to function and will be dissolved.

Descartes: A New Approach



Descartes

The first great philosopher of the modern era was René Descartes, whose new approach won him recognition as the progenitor of modern philosophy. Descartes's pursuit of mathematical and scientific truth soon led to a profound rejection of the scholastic tradition in which he had been educated. Much of his work was concerned with the provision of a secure foundation for the advancement of human knowledge through the natural sciences. Fearing the condemnation of the church, however, Descartes was rightly cautious about publicly expressing the full measure of his radical views. The philosophical writings for which he is remembered are therefore extremely circumspect in their treatment of controversial issues.

After years of work in private, Descartes finally published a preliminary statement of his views in the *Discourse on the Method of Rightly Conducting the Reason* (1637). Since mathematics has genuinely achieved the certainty for which human thinkers yearn, he argued, we rightly turn to mathematical reasoning as a model for progress in human knowledge more generally. Expressing perfect confidence in the capacity of human reason to achieve knowledge, Descartes proposed an intellectual process no less unsettling than the architectural destruction and rebuilding of an entire town. In order to be absolutely sure that we accept only what is genuinely certain, we must first deliberately renounce all of the firmly held but questionable beliefs we have previously acquired by experience and education.

The progress and certainty of mathematical knowledge, Descartes supposed, provide an emulable model for a similarly productive philosophical method, characterized by four simple rules:

1. Accept as true only what is indubitable.
2. Divide every question into manageable parts.
3. Begin with the simplest issues and ascend to the more complex.

4. Review frequently enough to retain the whole argument at once.

This quasi-mathematical procedure for the achievement of knowledge is typical of a rationalistic approach to epistemology.

While engaged in such a comprehensive revision of our beliefs, Descartes supposed it prudent to adhere to a modest, conventional way of life that provides a secure and comfortable environment in which to pursue serious study. The stoic underpinnings of this "provisional morality" are evident in the emphasis on changing oneself to fit the world. Its general importance as an avenue to the contemplative life, however, is more general. Great intellectual upheavals can best be undertaken during relatively calm and stable periods of life.

Anticipated Results

In this context, Descartes offered a brief description of his own experience with the proper approach to knowledge. Begin by renouncing any belief that can be doubted, including especially the testimony of the senses; then use the perfect certainty of one's own existence, which survives this doubt, as the foundation for a demonstration of the providential reliability of one's faculties generally. Significant knowledge of the world, Descartes supposed, can be achieved only by following this epistemological method, the rationalism of relying on a mathematical model and eliminating the distraction of sensory information in order to pursue the demonstrations of pure reason.

Later sections of the *Discourse* (along with the supplementary scientific essays with which it was published) trace some of the more significant consequences of following the Cartesian method in philosophy. His mechanistic inclinations emerge clearly in these sections, with frequent reminders of the success of physical explanations of complex phenomena. Non-human animals, on Descartes's view, are complex organic machines, all of whose actions can be fully explained without any reference to the operation of mind in thinking.

In fact, Descartes declared, most of human behavior, like that of animals, is susceptible to simple mechanistic explanation. Cleverly designed automata could successfully mimic nearly all of what we do. Thus, Descartes argued, it is only the general ability to adapt to widely varying circumstances—and, in particular, the capacity to respond creatively in the use of language—that provides a sure test for the presence of an immaterial soul associated with the normal human body.

But Descartes supposed that no matter how human-like an animal or machine could be made to appear in its form or operations, it would always be possible to distinguish it from a real human being by two functional criteria. Although an animal or machine may be capable of performing any one activity as well as (or even better than) we can, he argued, each human being is capable of a greater variety of different activities than could be performed by anything lacking a soul. In a special instance of this general point, Descartes held that although an animal or machine might be made to utter sounds resembling human speech in response to specific stimuli, only an immaterial thinking substance could engage in the creative use of language required for responding appropriately to any unexpected circumstances. My puppy is a loyal companion, and my computer is a powerful instrument, but neither of them can engage in a decent conversation. (This criterion anticipated the more formal requirements of the Turing test.)

Descartes: Starting with Doubt

For a more complete formal presentation of this foundational experience, we must turn to the *Meditationes de prima Philosophia* (*Meditations on First Philosophy*) (1641), in which Descartes offered to contemporary theologians his proofs of the existence of god and the immortality of the human soul. This explicit concern for religious matters does not reflect any loss of interest in pursuing the goals of science. By sharply distinguishing mind from body, Descartes hoped to preserve a distinct arena for the church while securing the freedom of scientists to develop mechanistic accounts of physical phenomena. In this way, he supposed it possible to satisfy the requirements of Christian doctrine, but discourage the interference of the church in scientific matters and promote further observational exploration of the material world.

The arrangement of the *Meditations*, Descartes emphasized, is not the order of reasons; that is, it makes no effort to proceed from the metaphysical foundations of reality to the dependent existence of lesser beings, as Spinoza would later try to do. Instead, this book follows the order of thoughts; that is, it traces the epistemological progress an individual thinker might follow in establishing knowledge at a level of perfect certainty. Thus, these are truly *Meditations*: we are meant to put ourselves in the place of the first-person narrator, experiencing for ourselves the benefits of the philosophical method.

The Method of Doubt

The basic strategy of Descartes's method of doubt is to defeat skepticism on its own ground. Begin by doubting the truth of everything—not only the evidence of the senses and the more extravagant cultural presuppositions, but even the fundamental process of reasoning itself. If any particular truth about the world can survive this extreme skeptical challenge, then it must be truly indubitable and therefore a perfectly certain foundation for knowledge. The First Meditation, then, is an extended exercise in learning to doubt everything that I believe, considered at three distinct levels:

1. Perceptual Illusion

First, Descartes noted that the testimony of the senses with respect to any particular judgment about the external world may turn out to be mistaken. (Med. I) Things are not always just as they seem at first glance (or at first hearing, etc.) to be. But then, Descartes argues, it is prudent never wholly to trust in the truth of what we perceive. In ordinary life, of course, we adjust for mistaken perceptions by reference to correct perceptions. But since we cannot be sure at first which cases are veridical and which are not, it is possible (if not always feasible) to doubt any particular bit of apparent sensory knowledge.

2. The Dream Problem

Second, Descartes raised a more systematic method for doubting the legitimacy of all sensory perception. Since my most vivid dreams are internally indistinguishable from waking experience, he argued, it is possible that everything I now "perceive" to be part of the physical world outside me is in fact nothing more than a fanciful fabrication of my own imagination. On this supposition, it is possible to doubt that any physical thing really exists, that there is an external world at all. (Med. I)

Severe as it is, this level of doubt is not utterly comprehensive, since the truths of mathematics and the content of simple natures remain unaffected. Even if there is no material world (and thus, even in my dreams) two plus three makes five and red looks red

to me. In order to doubt the veracity of such fundamental beliefs, I must extend the method of doubting even more hyperbolically.

3. A Deceiving God

Finally, then, Descartes raises even more comprehensive doubts by inviting us to consider a radical hypothesis derived from one of our most treasured traditional beliefs. What if (as religion teaches) there is an omnipotent god, but that deity devotes its full attention to deceiving me? (Med. I) The problem here is not merely that I might be forced by god to believe what something which is in fact false. Descartes means to raise the far more devastating possibility that whenever I believe anything, even if it has always been true up until now, a truly omnipotent deceiver could at that very moment choose to change the world so as to render my belief false. On this supposition, it seems possible to doubt the truth of absolutely anything I might come to believe.

Although the hypothesis of a deceiving god best serves the logical structure of the *Meditations* as a whole, Descartes offered two alternative versions of the hypothetical doubt for the benefit of those who might take offense at even a counter-factual suggestion of impiety. It may seem more palatable to the devout to consider the possibility that I systematically deceive myself or that there is some evil demon who perpetually tortures me with my own error. The point in each case is that it is possible for every belief I entertain to be false.

Remember that the point of the entire exercise is to out-do the skeptics at their own game, to raise the broadest possible grounds for doubt, so that whatever we come to believe in the face of such challenges will indeed be that which cannot be doubted. It is worthwhile to pause here, wallowing in the depths of Cartesian doubt at the end of the First Meditation, the better to appreciate the escape he offers at the outset of Meditation Two.

I Am, I Exist

The Second Meditation begins with a review of the First. Remember that I am committed to suspending judgment with respect to anything about which I can conceive any doubt, and my doubts are extensive. I mistrust every report of my senses, I regard the material world as nothing more than a dream, and I suppose that an omnipotent god renders false each proposition that I am even inclined to believe. Since everything therefore seems to be dubitable, does it follow that I can be certain of nothing at all?

It does not. **Descartes** claimed that one thing emerges as true even under the strict conditions imposed by the otherwise universal doubt: "I am, I exist" is necessarily true whenever the thought occurs to me. (Med. II) This truth neither derives from sensory information nor depends upon the reality of an external world, and I would have to exist even if I were systematically deceived. For even an omnipotent god could not cause it to be true, at one and the same time, **both** that I am deceived **and** that I do not exist. If I am deceived, then at least I am.

Although Descartes's reasoning here is best known in the Latin translation of its expression in the *Discourse*, "*cogito, ergo sum*" ("I think, therefore I am"), it is not merely an inference from the activity of thinking to the existence of an agent which performs that activity. It is intended rather as an intuition of one's own reality, an expression of the indubitability of first-person experience, the logical self-certification of self-conscious awareness in any form.

Skepticism is thereby defeated, according to Descartes. No matter how many skeptical challenges are raised—indeed, even if things are much worse than the most extravagant skeptic ever claimed—there is at least one fragment of genuine human knowledge: my perfect certainty of my own existence. From this starting-point, Descartes supposed, it is possible to achieve indubitable knowledge of many other propositions as well.

I Am a Thinking Thing

An initial consequence may be drawn directly from the intuitive certainty of the *cogito* itself. If I know that I am, Descartes argued, I must also know what I am; an understanding of my true nature must be contained implicitly in the content of my awareness.

What then, is this "I" that doubts, that may be deceived, that thinks? Since I became certain of my existence while entertaining serious doubts about sensory information and the existence of a material world, none of the apparent features of my human body can have been crucial for my understanding of myself. But all that is left is my thought itself, so Descartes concluded that "*sum res cogitans*" ("I am a thing that thinks"). (Med. II) In Descartes's terms, I am a substance whose inseparable attribute (or entire essence) is thought, with all its modes: doubting, willing, conceiving, believing, etc. What I really am is a mind [Lat. *mens*] or soul [Lat. *anima*]. So completely am I identified with my conscious awareness, Descartes claimed, that if I were to stop thinking altogether, it would follow that I no longer existed at all. At this point, nothing else about human nature can be determined with such perfect certainty.

In ordinary life, my experience of bodies may appear to be more vivid than self-consciousness, but Descartes argued that sensory appearances actually provide no reliable knowledge of the external world. If I hold a piece of beeswax while approaching the fire, all of the qualities it presents to my senses change dramatically while the wax itself remains. (Med. II) It follows that the impressions of sense are unreliable guides even to the nature of bodies. (Notice here that the identity of the piece of wax depends solely upon its spatial location; that's a significant hint about Descartes's view of the true nature of material things, which we'll see in more detail in Meditation Five.)

Descartes: God and Human Nature

Clear and Distinct Ideas

At the outset of the Third Meditation, Descartes tried to use this first truth as the paradigm for his general account of the possibilities for achieving human knowledge. In the *cogito*, awareness of myself, of thinking, and of existence are somehow combined in such a way as to result in an intuitive grasp of a truth that cannot be doubted. Perhaps we can find in other cases the same grounds for indubitable truth. But what is it?

The answer lies in Descartes's theory of ideas. Considered formally, as the content of my thinking activity, the ideas involved in the *cogito* are unusually clear and distinct. (Med. III) But ideas may also be considered objectively, as the mental representatives of things that really exist. According to a representative realist like Descartes, then, the connections among our ideas yield truth only when they correspond to the way the world really is. But it is not obvious that our clear and distinct ideas do correspond to the reality of things, since we suppose that there may be an omnipotent deceiver.

In some measure, the reliability of our ideas may depend on the source from which they are derived. Descartes held that there are only three possibilities: all of our ideas are either **adventitious** (entering the mind from the outside world) or **factitious** (manufactured by the mind

itself) or **innate** (inscribed on the mind by god). (Med. III) But I don't yet know that there is an outside world, and I can imagine almost anything, so everything depends on whether god exists and deceives me.

God Exists

The next step in the pursuit of knowledge, then, is to prove that god does indeed exist. Descartes's starting point for such a proof is the principle that the cause of any idea must have at least as much reality as the content of the idea itself. But since my idea of god has an absolutely unlimited content, the cause of this idea must itself be infinite, and only the truly existing god is that. In other words, my idea of god cannot be either adventitious or factitious (since I could neither experience god directly nor discover the concept of perfection in myself), so it must be innately provided by god. Therefore, god exists. (Med. III)

As a backup to this argument, Descartes offered a traditional version of the cosmological argument for god's existence. From the *cogito* I know that I exist, and since I am not perfect in every way, I cannot have caused myself. So something else must have caused my existence, and no matter what that something is (my parents?), we could ask what caused it to exist. The chain of causes must end eventually, and that will be with the ultimate, perfect, self-caused being, or god.

As Antoine Arnauld pointed out in an Objection published along with the *Meditations* themselves, there is a problem with this reasoning. Since Descartes will use the existence (and veracity) of god to prove the reliability of clear and distinct ideas in Meditation Four, his use of clear and distinct ideas to prove the existence of god in Meditation Three is an example of circular reasoning. Descartes replied that his argument is not circular because intuitive reasoning—in the proof of god as in the *cogito*—requires no further support in the moment of its conception. We must rely on a non-deceiving god only as the guarantor of veridical memory, when a demonstrative argument involves too many steps to be held in the mind at once. But this response is not entirely convincing.

The problem is a significant one, since the proof of god's existence is not only the first attempt to establish the reality of something outside the self but also the foundation for every further attempt to do so. If this proof fails, then Descartes's hopes for human knowledge are severely curtailed, and I am stuck in solipsism, unable to be perfectly certain of anything more than my own existence as a thinking thing. With this reservation in mind, we'll continue through the *Meditations*, seeing how Descartes tried to dismantle his own reasons for doubt.

Deception and Error

The proof of god's existence actually makes the hypothetical doubt of the First Meditation a little worse: I now know that there really is a being powerful enough to deceive me at every turn. But Descartes argued that since all perfections naturally go together, and since deception is invariably the product of imperfection, it follows that the truly omnipotent being has no reason or motive for deception. God does not deceive, and doubt of the deepest sort may be abandoned forever. (Med. IV) It follows that the simple natures and the truths of mathematics are now secure. In fact, Descartes maintained, I can now live in perfect confidence that my intellectual faculties, bestowed on me by a veracious god, are properly designed for the apprehension of truth.

But this seems to imply too much: if I have a divinely-endowed capacity for discovering the truth, then why don't I always achieve it? The problem is not that I lack knowledge of some things; that only means that I am limited. Rather, the question is why I so often make mistakes, believing

what is false despite my possession of god-given mental abilities. Descartes's answer derives from an analysis of the nature of human cognition generally.

Every mental act of judgment, Descartes held, is the product of two distinct faculties: the understanding, which merely observes or perceives, and the will, which assents to the belief in question. Considered separately, the understanding (although limited in scope) is adequate for human needs, since it comprehends completely everything for which it has clear and distinct ideas. Similarly, the will as an independent faculty is perfect, since it (like the will of god) is perfectly free in every respect. Thus, god has benevolently provided me with two faculties, neither of which is designed to produce error instead of true belief. Yet I do make mistakes, by misusing my free will to assent on occasions for which my understanding does not have clear and distinct ideas. (Med. IV) For Descartes, error is virtually a moral failing, the willful exercise of my powers of believing in excess of my ability to perceive the truth.

The Essence of Matter

Since the truths of reason have been restored by the demonstration of god's veracity, Descartes employed mathematical reasoning to discover the essence of bodies in the Fifth Meditation. We do not yet know whether there are any material objects, because the dream problem remains in force, but Descartes supposed that we can determine what they would be like if there were any by relying upon reason alone, since mathematics achieves certainty without supposing the reality of its objects.

According to Descartes, the essence of material substance is simply extension, the property of filling up space. (Med. V) So solid geometry, which describes the possibility of dividing an otherwise uniform space into distinct parts, is a complete guide to the essence of body. It follows that there can be in reality only one extended substance, comprising all matter in a single spatial whole. From this, Descartes concluded that individual bodies are merely modes of the one extended being, that there can be no space void of extension, and that all motion must proceed by circular vortex. Thus, again, the true nature of bodies is understood by pure thought, without any information from the senses.

By the way, this explanation of essences suggested to Descartes another proof of god's existence, a modern variation on the Ontological Argument. Just as the essence of a triangle includes its having interior angles that add up to a straight line, Descartes argued, so the essence of god, understood as a being in whom all perfections are united, includes necessary existence in reality. (Med. V) As Descartes himself noted, this argument is no more certain than the truths of mathematics, so it also rests on the reliability of clear and distinct ideas, secured in turn by the proofs of god's existence and veracity in the Third and Fourth Meditations.

The Existence of Bodies

In the Sixth Meditation, Descartes finally tried to eliminate the dream problem by proving that there is a material world and that bodies do really exist. His argument derives from the supposition that divinely-bestowed human faculties of cognition must always be regarded as adequately designed for some specific purpose. Since three of our faculties involve representation of physical things, the argument proceeds in three distinct stages. (Med. VI)

First, since the understanding conceives of extended things through its comprehension of geometrical form, it must at least be possible for things of this sort to exist. Second, since the imagination is directed exclusively toward the ideas of bodies and of the ways in which they might be purposefully altered, it is probable that there really are such things. Finally, since the faculty of

sense perception is an entirely passive ability to receive ideas of physical objects produced in me by some external source outside my control, it is certain that such objects must truly exist.

The only alternative explanation for perception, Descartes noted, is that god directly puts the ideas of bodies into my mind without there actually being anything real that corresponds to them. (This is precisely the possibility that Malebranche would later accept as the correct account of the material world.) But Descartes supposed that a non-deceiving god would never maliciously give me so complete a set of ideas without also causing their natural objects to exist in fact. Hence, the bodies I perceive do really exist.

Mind-Body Dualism

Among the physical objects I perceive are the organic bodies of animals, other human beings, and myself. So it is finally appropriate to consider human nature as a whole: how am I, considered as a thinking thing, concerned with the organism I see in the mirror? What is the true relation between the mind and the body of any human being? According to **Descartes**, the two are utterly distinct.

The Sixth Meditation contains two arguments in defence of Cartesian dualism: First, since the mind and the body can each be conceived clearly and distinctly apart from each other, it follows that god could cause either to exist independently of the other, and this satisfies the traditional criteria for a metaphysical real distinction. (Med. VI) Second, the essence of body as a geometrically defined region of space includes the possibility of its infinite divisibility, but the mind, despite the variety of its many faculties and operations, must be conceived as a single, unitary, indivisible being; since incompatible properties cannot inhere in any one substance, the mind and body are perfectly distinct. (Med. VI)

This radical separation of mind and body makes it difficult to account for the apparent interaction of the two in my own case. In ordinary experience, it surely seems that the volitions of my mind can cause physical movements in my body and that the physical states of my body can produce effects on my mental operations. But on Descartes's view, there can be no substantial connection between the two, nor did he believe it appropriate to think of the mind as residing in the body as a pilot resides within a ship. Although he offered several tentative suggestions in his correspondence with Princess Elizabeth, Descartes largely left for future generations the task of developing some reasonable account of volition and sensation, either by securing the possibility of mind-body interaction or by proposing some alternative explanation of the appearances.

On the other hand, Cartesian dualism offers some clear advantages: For one thing, it provides an easy proof of the natural immortality of the human mind or soul, which cannot be substantially affected by death, understood as an alteration of the states of the physical organism. In addition, the distinction of mind from body establishes the absolute independence of the material realm from the spiritual, securing the freedom of scientists to rely exclusively on observation for their development of mechanistic explanations of physical events.

Cartesian Philosophy

Consequences of Dualism

Descartes worked out his own detailed theories about the physical operation of the material world in *Le Monde (The World)*, but uncertainty about ecclesiastical reactions prevented him from publishing it. The final sections of the *Discourse*, however, include several significant hints about the positions he was prepared to defend. Their explanations of the activities of living organisms make the mechanistic implications of the Cartesian view more evident.

Since, as everyone acknowledges, non-human animals do not have souls, Descartes concluded that animals must be merely complex machines. Since they lack any immaterial thinking substance, animals cannot think, and all of the movements of their bodies can, in principle, be explained in purely mechanical terms. (Descartes himself incorrectly supposed that the nervous system functions as a complex hydraulic machine.) But since the structure of the human body and the behavior of human beings are similar to the structure and behavior of some animals, it is obvious that many human actions can also be given a mechanistic explanation. La Mettrie later followed this line of reasoning to its ultimate conclusion, supposing human beings to be nothing more than Cartesian machines.

Cartesianism

The philosophy of Descartes won ready acceptance in the second half of the seventeenth century, especially in France and Holland. Although few of his followers, known collectively as Cartesians, employed his methods, they showed great diligence and ingenuity in their efforts to explain, defend, and advance his central doctrines.

In the physical sciences, for example, Cavendish, Rohault, and Régis were happy to abandon all efforts to employ final causes in their pursuit of mechanistic accounts of physical phenomena and animal behavior. On this basis, however, such philosophers were able to progress beyond a simple affirmation of the mysterious reality of mind-body interaction.

Metaphysicians like Cordemoy and Geulincx fared little better in their efforts to deal with this crucial problem with dualism. If there is no genuine causal interaction between independent substances, we seem driven to suppose that the actions of mind and body are merely parallel or divinely synchronized.

Not everyone was entirely satisfied by the epistemological foundations of the Cartesian scheme, either. Critics like Arnauld, Nicole, and Foucher drew attention to the inherent difficulty of explaining in representationalist terms how our ideas of things can be known to resemble the things themselves and the implausibility of reliance upon innate ideas. Conway went even further, rejecting the dualistic foundations of Descartes's substance-ontology along with his approach to human knowledge.

Pascal: The Religious Mathematician

One seventeenth-century thinker of greater independent significance was Blaise Pascal, with his unusual blend of religious piety, scientific curiosity, and mathematical genius. Led by his deep religious feelings to participate fully in the pietistic Jansenism of the Port-Royal community, Pascal maintained that formal reasoning about god can never provide an adequate substitute for genuine personal concern for the faith: "The heart has its reasons that reason cannot know."

Pascal's mathematical acumen was no less remarkable than that of Descartes; his work anticipated the development of game theory and the modern methods of calculating probability. In fact, his famous "Wager" applies these mathematical techniques to the prudence of religious conviction in the absence of adequate evidence: since the consequences of believing are infinitely beneficial if there is a god and only slightly inconvenient if there is not, while the outcome of atheism is only somewhat more pleasant if there is no god and eternally costly if there is, the expected value of theism is much greater than that of atheism, and it is reasonable to stake one's life on the possibility that god does exist.

Malebranche: Seeing All Things in God

The most original and influential philosopher of the Cartesian tradition was Nicolas Malebranche. Noting the steady progress of efforts to provide mechanistic accounts of the behavior of the human body, Malebranche concluded that the mind and body are not only substantially distinct but causally independent of each other. The appearance of genuine interaction arises from what is in fact merely the perfect parallelism of events in the mental and physical realms.

According to Malebranche, then, our ideas of bodies do not result from any causal influence that physical objects have on our senses; rather, they are produced in our minds directly by god. Thus, he supposed, in sense perception what literally happens is that we "see all things in god." Similarly, our wills have no causal influence on the material world, but god provides for the coordination of our volitions with the movement of bodies. In general, since there is no causal interaction, it is the power of god alone that secures a perpetual, happy coincidence of the states and operations of minds and bodies.

Since only god's activity is efficacious in either mental or physical things, apparent causes in either realm are merely the occasions for the appearance of their supposed effects in the other. Thus, the views of Malebranche are often referred to collectively as occasionalism. Although the entire theory found few enthusiastic adherents, Malebranche's analysis of the regularities exhibited in nature by causally independent beings and events was greatly influential on later philosophers, including Berkeley and Hume.

Spinoza: God, Nature, and Freedom

Philosophy "*ad more geometrico*"



Spinoza

Descartes regarded mathematical reasoning as the paradigm for progress in human knowledge, but Baruch Spinoza took this rationalistic appreciation even further, developing and expressing his mature philosophical views "in the geometrical manner." Thus, in the posthumously-published *Ethica Ordine Geometrico Demonstrata (Ethics)* (1677), Spinoza claimed to deduce the entire system of thought from a restricted set of definitions and self-evident axioms.

Drawing specific doctrines from Cartesian thought, medieval scholasticism, and the Jewish tradition, Spinoza blended everything together into a comprehensive vision of the universe as a coherent whole governed solely by the immutable laws of logical necessity. Rigorous thought reveals that there can be only a single substance, of which we (and everything else) are merely insignificant parts. Although we may find it difficult to take any comfort in Spinoza's account of our place in the world, we are bound to admire the logical consistency with which he works out all the details.

The Unity of Substance

The definitions and axioms with which Book I of the *Ethics* begins are critical to Spinoza's enterprise, since they are intended to carry his central doctrines as deductive consequences. Although they generally follow the usages of the scholastic tradition, many of them also include special features of great significance to the thought of Spinoza.

Substance, for example, he defined not only as existing in itself but also as "conceived through itself." (I Def. iii) This places a severe limit on the possibility of interaction between things, since Spinoza declared that causation is a relation of logical necessity, such that knowledge of the effect requires knowledge of its cause. (I Ax. iii-iv) Few will disagree that god is a substance with infinite attributes, but this definition carries some surprising implications in Spinoza's view of the world; notice also that freedom, according to Spinoza, just means that a thing exists and acts by its own nature rather than by external compulsion. (I Def. vi-vii)

The numbered propositions that follow make it clear what Spinoza is getting at. Since causal interaction is impossible between two substances that differ essentially, and no two substances can share a common attribute or essence, it follows that no substance can produce genuine change in any another substance. Each must be the cause of its own existence and, since it cannot be subject to limitations imposed from outside itself, must also be absolutely infinite. Things that appear to be finite individuals interacting with each other, then, cannot themselves be substances; in reality, they can be nothing more than the modifications of a self-caused, infinite substance. (I Prop. v-viii) And that, of course, is god.

"*Deus sive Natura*"

Spinoza supposed it easy to demonstrate that such a being does really exist. As the ontological argument makes clear, god's very essence includes existence. Moreover, nothing else could possibly prevent the existence of that substance which has infinite attributes in itself. Finally, although it depends on *a posteriori* grounds to which Spinoza would rather not appeal, the cosmological argument helps us to understand that since we ourselves exist, so must an infinite cause of the universe. Thus, god exists. (I Prop. xi)

What is more, god is a being with infinitely many attributes, each of which is itself infinite, upon which no limits of any kind can be imposed. So Spinoza argued that infinite substance must be indivisible, eternal, and unitary. There can be only one such substance, "god or nature," in which everything else is wholly contained. Thus, Spinoza is an extreme monist, for whom "Whatever is, is in god." Every mind and every body, every thought and every movement, all are nothing more than aspects of the one true being. Thus, god is an extended as well as a thinking substance.

Finally, god is perfectly free on Spinoza's definition. Of course it would be incorrect to suppose that god has any choices about what to do. Everything that happens is not only causally determined but actually flows by logical necessity from immutable laws. But since everything is merely a part of god, those laws themselves, and cause and effect alike, are simply aspects of the divine essence, which is wholly self-contained and therefore free. (I Prop. xvii) Because there is no other substance, god's actions can never be influenced by anything else.

The Natural Order

God is the only genuine cause. From the essence of god, Spinoza held, infinitely many things flow in infinitely many different ways. The entire universe emanates inexorably from the immutable core of infinite substance. Though we often find it natural to think of the world from the outside looking in, as *natura naturata* (nature natured), its internal structure can be more accurately conceived from the inside looking out, as *natura naturans* (nature naturing). (I Prop. xxix) Since all that happens radiates from the common core, everything hangs together as part of the coherent whole which just is god or nature in itself.

The infinite substance and each of its infinitely many distinct attributes (among which only thought and extension are familiar to us) are eternal expressions of the immutable essence of god. From each attribute flow the infinite immediate modes (infinite intellect and motion or rest), and out of these in turn come the infinite mediate modes (truth and the face of the universe). Thus, every mode of substance (each individual mind or body) is determined to be as it is because of the divine essence. Even the finite modes (particular thoughts and actions) are inevitably and wholly determined by the nature of god. Hence, everything in the world is as it must be; nothing could be other than it is. (I Prop. xxxiii)

Thought and Extension

In the same deductive geometrical form, Book II of the *Ethics* offers an extensive account of human beings: our existence, our nature, and our activities. Remember that we are aware of only two of the infinitely many attributes of god, extension and thought, and that each of them independently expresses the entire essence of the one infinite substance.

That is, in the natural world (god's body), the attribute of extension, modified by varying degrees of motion and rest, produces the face of the universe, which includes all of the particular physical events which are the modes of extension. (This is almost exactly like Descartes's account of the material world.) Similarly, in the mental realm (god's idea), the attribute of thought—modified by infinite intellect—produces the truth, which includes all of the particular mental events which are the modes of thought. Since they arise from distinct attributes, each of these realms is causally independent of the other and wholly self-contained: the natural world and the mental realm are separate closed systems.

Despite the impossibility of any causal interaction between the two, Spinoza supposed that the inevitable unfolding of each these two independent attributes must proceed in perfect parallel with that of the other. "The order and connection of ideas is the same as the order and connection of things." (II Prop. vii) (And so, of course, must be the order and connection of each of the infinitely many other attributes of god.) Since the development of each aspect of the divine nature follows with logical necessity from its own fundamental attribute, and since all of the attributes, in turn, derive from the central essential being of one and the same infinite substance, each exhibits the same characteristic pattern of organization even though they have no influence on each other.

Thus, for every object of the natural world that exists as a mode of the attribute of extension, there is a corresponding idea in the mind of god that exists as a mode of the attribute of thought.

For every physical event that takes place in the material realm as the result of exclusively physical causes, a corresponding mental event must occur in the infinite intellect as a result of purely mental causes. Since everything flows from the same infinite being, we may suppose that the structure of thought in infinite intellect comprises an accurate representation of the structure of every other attribute.

Mind and Body

Consider what all of this implies for each of us as a living human being. We are not substances, according to Spinoza, for only god or Nature is truly substantial; we can exist only as modes, depending for our existence upon the reality of the one real being. Since the one infinite substance is the cause of everything, each of us can only be regarded as a tiny cross-section of the whole.

Of course, that cross-section does include elements from each of the infinitely many attributes of that substance. In particular, we know that in each case it involves both a human body, the movements of whose organic parts are all physical events that flow from god via the attribute of extension, and a human mind, the formation of whose ideas are all mental events that flow from god via the attribute of thought. Although there can be no causal interaction between the mind and the body, the order and connection of their internal elements are perfectly correlated.

Thus, in principle, the human mind contains ideas that perfectly represent the parts of the human body. But since many of these ideas are inadequate in the sense that they do not carry with them internal signs of their accuracy, we do not necessarily know our own bodies. (II Prop. xxviii) If, for example, there must be in my mind an idea that corresponds to each particular organic state of my spleen; but since I am unaware of its bodily correlate, it provides me with no clear awareness of that representational object.

Human Knowledge

Spinoza maintained that human beings do have particular faculties whose functions are to provide some degree of knowledge. I typically assume, for example, that there may be some correlation between thought and extension with regard to sensations produced by the action of other bodies upon my eyes, ears, and fingertips. Even my memory may occasionally harbor some evidence of the order and connection common to things and ideas. And in self-conscious awareness, I seem to achieve genuine knowledge of myself by representing my mind to itself, using ideas to signify other ideas.

Near the end of Book II, then, Spinoza distinguished three kinds of knowledge of which we may be capable: First, **opinion**, derived either from vague sensory experience or from the signification of words in the memory or imagination, provides only inadequate ideas and cannot be relied upon as a source of truth. Second, **reason**, which begins with simple adequate ideas and by analyzing causal or logical necessity proceeds toward awareness of their more general causes, does provide us with truth. But **intuition**, in which the mind deduces the structure of reality from the very essence or idea of god, is the great source of adequate ideas, the highest form of knowledge, and the ultimate guarantor of truth. (II Prop. xl)

Spinoza therefore recommends a three-step process for the achievement of human knowledge: First, disregard the misleading testimony of the senses and conventional learning. Second, starting from the adequate idea of any one existing thing, reason back to the eternal attribute of god from which it derives. Finally, use this knowledge of the divine essence to intuit everything else that ever

was, is, and will be. Indeed, he supposed that the *Ethics* itself is an exercise in this ultimate pursuit of indubitable knowledge.

Action, Goodness, and Freedom

The last three Books of the *Ethics* collectively describe how to live consistently on Spinozistic principles. All human behavior results from desire or the perception of pain, so (like events of any sort) it flows necessarily from the eternal attributes of thought and extension. But Spinoza pointed out a crucial distinction between two kinds of cases: Sometimes I am wholly unaware of the causes that underlie what I do and am simply overwhelmed by the strength of my momentary passions. But at other times I have adequate knowledge of the motives for what I do and can engage in deliberate action because I recognize my place within the grander scheme of reality as a whole.

It is in this fashion that moral value enters Spinoza's system. Good (or evil) just is what serves (or hinders) the long-term interests of life. Since my actions invariably follow from emotion or desire, I always do what I believe to be the good, which will truly be so if I have adequate ideas of everything involved. The greatest good of human life, then, is to understand one's place in the structure of the universe as a natural expression of the essence of god.

But how can we speak of moral responsibility when every human action is determined with rigid necessity? Remember that, for Spinoza, freedom is self-determination, so when I acquire adequate knowledge of the emotions and desires that are the internal causes of all my actions, when I understand why I do what I do, then I am truly free. Although I can neither change the way things are nor hope that I will be rewarded, I must continue to live and act with the calm confidence that I am a necessary component of an infinitely greater and more important whole. This way of life may not be easy, Spinoza declared, "But all noble things are as difficult as they are rare."

Leibniz: Logic and Harmony

The Uses of Logic

The last of the great Continental Rationalists was Gottfried Wilhelm Leibniz. Known in his own time as a legal advisor to the Court of Hanover and as a practicing mathematician who co-invented the calculus, Leibniz applied the rigorous standards of formal reasoning in an effort to comprehend everything. A suitably sophisticated logical scheme, he believed, can serve as a reliable guide to the ultimate structure of reality.

But Leibniz published little of his philosophical work during his own lifetime. For an understanding of the technical logical foundations of his system, we must rely upon letters and notebooks which became available only centuries later and upon the aphoristic summary of its results in *La Monadologie (Monadology)* (1714). His *Discours de Metaphysique (Discourse on Metaphysics)* (1686) and *Théodicée (Theodicy)* (1710) present to the general public more popular expositions of Leibniz's central themes. Our strategy will be to begin with the logical theories and work outward to the more accessible doctrines.

True Propositions

The basis for Leibniz's philosophy is pure logical analysis. Every proposition, he believed, can be expressed in subject-predicate form. What is more, every true proposition is a statement of identity whose predicate is wholly contained in its subject, like " $2 + 3 = 5$." In this sense, all