

# FROM SOCRATES TO SARTRE

## The Philosophic Quest

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Christian themes of the worthlessness of man and the insignificance of nature in relation to the supernatural world.

The humanist concept of the dignity of man is central to the Renaissance mode of consciousness, which appeared first in Italy, later in northern Europe and England. A new emphasis upon individual achievement arises, stimulated by magnificent classical models of achievement. The new Renaissance mentality can be seen in the widespread belief in the superiority of the culture of the ancient world to that of the present. The principal concern expressed by the writers of the Renaissance is in the need to restore to man the capacities, strengths, and powers of the individual person which the medieval world had denied or ignored. It is in this sense that the Renaissance is sometimes credited with "the discovery of man." With the coming of the Renaissance there occurs an expression of a humanistic faith in man, in his power to direct his life and the life of his society toward freedom and justice, together with the sense that this power, which had been a possession of the individual in the ancient Greek world, had been lost in the world of medieval Christendom.

But some Renaissance humanists looked not only back to the glories of the classical past but ahead to the future, sensing that they were living in a rapidly changing world, in which the legitimacy of the existing feudal system, the Church, and the empire was increasingly challenged. The perception began to develop that the new Renaissance humanistic mentality was breaking through the hierarchical rigidities of the existing social order, and that a way would be opened to individual freedom, access to new knowledge, and a new mode of life.

The ferment of Renaissance humanism is best seen in the arts, in which human talents and achievements were celebrated and honored. Individual human beings were glorified in literature; and art turned away from the portrayal of suffering and death, toward the expression of the Greek joy in living. Nature became interesting in itself and not merely as symbolic of the supernatural. A visual revolution began to take place among artists, who increasingly turned away from painting and sculpting stereotypical Christian subjects and Christian symbolism to painting and sculpting things as they appear in nature to the eye of the artist. Artists discovered the human body again and began to study the physiology, the muscles and bones, of the human body in motion.

Michelangelo's "David" and Leonardo's "Last Supper" are examples of the highly developed Renaissance portraiture of the natural human body in action. Renaissance art reaffirmed the dignity and capacity for goodness of man as a rational and sentient being, rightfully claiming to know and to enjoy the world autonomously through literature, the visual arts, the sciences and philosophy.

The Renaissance was marked not only by the revival of classical learning and humanism but also by many other developments, each of which struck a blow at the weakening structure of the medieval world; the invention of the printing press, gunpowder, and the improvement of the compass for navigation all had formidable consequences. The fifteenth century was the time of the great discoveries: the discovery of the New World by Columbus and his successors, and the discovery of the all-water route to India and the Far East, around the Cape of Good Hope. In time, the discoveries of these new trade routes were to bring about the end of the medieval feudal regime and the emergence of a new social order. Moreover, the rise and rapid growth of the Protestant Reformation begun by Martin Luther struck a direct blow against the unity of the medieval Christian world.

## The Rise of Modern Science

From a philosophic standpoint, the most significant development in the Renaissance and the discoveries is a revolutionary new view of truth. In opposition to the scholastic view that human truth is subordinate to a divine, supernatural, and transcendent reality which is forever inaccessible to human reason, the shift is to the new view that human reason has the power to know the truth of reality and that reality is neither divine nor transcendent. Especially did this new view influence astronomy, which was reborn in the fifteenth century.

All the best minds were attracted to astronomy by the sixteenth century, as so many minds are now attracted to the frontiers of space exploration. New and careful astronomical observations were made and discrepancies were found between these new observations and the prevailing astronomical theory developed by Ptolemy in the Egyptian city of Alexandria in the second century. Most of the ancient astronomers, including Aristotle, had held a geocentric view



of the universe, the view that the earth was the center of the universe, around which the planets revolved. Ptolemy's contribution was to show that the astronomical data which had been observed could be explained by the hypothesis that the planets move around the earth in circles within one large circle. Ptolemy's geocentric theory was adequate for astronomical calculations and predictions and it had the additional benefit of being compatible with Church doctrine on the divine creation of the earth as the center of the universe. As a result the Ptolemaic theory prevailed for fourteen centuries.

But now in the sixteenth century, the Polish astronomer Nicolaus Copernicus (1473–1543), using observation and mathematics, the methods of empiricism and rationalism, overthrew the earth-centered Ptolemaic theory and offered the sun-centered, heliocentric, theory that the earth revolves on its own axis and around the sun, along with the other planets. This theory accounted for the new observations and greatly simplified the mathematical calculations of Ptolemaic theory. Ever since Copernicus overthrew the Ptolemaic theory in this revolutionary way, any drastic change in thought has been called a Copernican revolution. For us, it is difficult to imagine a similar challenge to our accustomed beliefs, to conceive of such a tremendous jolt to the imagination, such a reversal of what is taken to be immutable truth. It would be comparable for us to have the announcement of a communication from a society of superior conscious intelligence in outer space, a startling possibility which science fiction, Star Wars, and even some scientists have opened up for us.

The response of the Church to the Copernican revolution was extreme. Scientists supportive of the heliocentric theory were excommunicated from the Church and condemned to everlasting hell. If they refused to deny these new ideas, they were subject to imprisonment, torture, or even death. These punitive measures were accomplished either through the office of the Pope or through the courts of the reigning kings. Copernicus himself hesitated to publish his theory for fear of the Church's reaction, but his publication was unnoticed and it was only his followers in the next century who were caught up with by the Church authorities. In 1600 Bruno was burned at the stake in Rome as an atheist for accepting Copernican theory. In 1620 Vanini, who called himself a naturalist, was burned at the stake in Toulouse as an atheist. In 1621 Fontainier was burned in Paris as an atheist.

Among the scientists it was the Italian astronomer Galileo (1564–1642) who came under attack because he boldly undertook to prove the Copernican theory. Galileo developed a telescope capable of magnifying one thousand times, by which he observed the satellites of Jupiter, Saturn's rings, and the moon's surface. Unlike Copernicus, Galileo vigorously and actively tried to publicize the new heliocentric theory and met with formidable Church opposition which censured his views as contrary to Holy Scripture. But in 1632 he published his *Dialogue Concerning the Two Chief Systems of the World*, in which he showed his agreement with the Copernican rather than the Ptolemaic theory. For this, he was summoned before the Inquisition, the book was condemned, he was forced to deny the doctrine upon his knees, forced to recite the seven penitential psalms weekly for three years, and sentenced to life imprisonment, which he served in his own home in Florence until his death.

## Descartes: Historical Situation

Meanwhile the scientific spirit moved on. New technology, new inventions, new observations, and new theory were appearing all over Europe. The telescope, microscope, and thermometer were invented. Among the new scientific developments were Boyle's theory of gases, laws of electricity and magnetism, laws of optics (constructed by Descartes and Snell), Harvey's theory of the circulation of the blood, Descartes's invention of analytical geometry. But what was the nature of the new science and its method? Two elements in scientific method were identified: (1) the empirical element, the use of sensory observation and experimentation; (2) the rational element, the use of mathematics and deductive reasoning, as by Copernicus and Galileo in explaining the motion of heavenly bodies. Almost immediately, conflicting theories of scientific method appeared, depending upon which element, the empirical or the rational, was claimed to be the more important. Francis Bacon in England looked at scientific method and claimed it for empiricism—a triumph of the method of observation and experimentation over reason, theories, and systems. Descartes, however, looked at scientific method and claimed it for rationalism—a triumph of mathematics, of

geometry, and of reasoning by axioms and deduction; it is these which make science into knowledge which is certain.

The new age of the seventeenth century, in which all beliefs were in transition and in which the new scientific method and scientific discoveries were advancing so rapidly, was one for which the medieval philosophy of scholasticism no longer appeared to be adequate, and a new philosophy appeared to be required. René Descartes is the first philosopher of the modern age and offers the first metaphysical theory in response to the new scientific view of the universe and in relationship to the counterclaims of the Church.

## Life of Descartes

Descartes was born in 1596 at the start of the seventeenth century, four years before Bruno was burned at the stake as a Copernican. Descartes was the son of a lawyer in Brittany and a member of one of the oldest and most respected families in the region. Descartes was brought up with all the amenities of noble and upper-class life. In his early years he wore the green velvet dress and sword of French nobility. From ten to eighteen years of age he attended La Flèche, a famous Jesuit college. He became dissatisfied with his education there and unconvinced of any truth, weary of textbooks based upon confused ideas and unconfirmed science, and weary of the authoritative dogmas of the Church. When he completed his studies at La Flèche, he stopped reading entirely and began to travel. In this response Descartes strikes a very modern note—not unlike the despair of someone in our time who longs for moral certainty and, finding none, stops reading entirely and goes off to the Himalayas in search of a guru. The longing for certainty was always paramount with Descartes. Mathematics alone he regarded as certain—but what relation did it have to other kinds of knowledge? And so he began his travels.

In 1618 he joined the army of Prince Maurice of Nassau as an unpaid volunteer. Army volunteer status at that time represented a kind of undemanding war college for young members of the nobility. Descartes was able to follow the advancing army at his own leisure, while studying music and mathematics. In 1619 Descartes transferred to the army of the Duke of Bavaria, and was detained by the weather in

November in the small German town of Ulm, where he remained for a whole day shut up in his room in the company of a huge Bavarian stove. He had decided to review his situation, philosophical and personal. That night he had a vision in a dream and in his diary there is the following momentous entry: "10 Nov. 1619: I was filled with enthusiasm, discovered the foundations of a marvelous science, and at the same time my vocation was revealed to me." He took a vow that he would devote the rest of his life to establish this new science, and he promised to visit the shrine of Our Lady of Loreto to give thanks for the vision he was granted.

His vision was of a plan for a single, unified science in which philosophy and all the sciences would be interconnected in one systematic totality. All qualitative differences of things would be treated as quantitative differences, and mathematics would be the key to all problems of the universe. By contrast with Plato, who saw the unity of all sciences in the mystical Idea of the Good, for Descartes the unity of science was a rationalistic and mathematical unity based upon mathematical axioms. By contrast with medieval Aristotelianism, explaining change teleologically as the movement of matter toward the actualization of form, for Descartes all change is explained mechanically, as the movement of bodies according to the laws of physics.

The next nine years Descartes devoted to working out a method for unifying the sciences. Meanwhile he sold the estates in France which he had inherited from his father so as to have the funds to live "free from the obligation of making a living from my science." Leisure enabled him to sleep long hours. He usually stayed in bed until noon, and has come to be known as the philosopher who did his best work in bed. He recommends idleness to anyone who would wish to produce good intellectual work, and he values his leisure, which enables him to live "without cares or passions to trouble me."

Descartes remained always aloof from the moral and political conflicts of his day. Like some other philosophers of his time he did not become a professor at a university, since the universities were so censored by the Church that they had become stagnant, and hostile to the new science and to its supporters, like Descartes. Always a solitary man, he decided that he would make no social commitments and no marriage bonds, so as not to interfere with his vow to advance knowledge in accordance with his vision. He refused to be married,



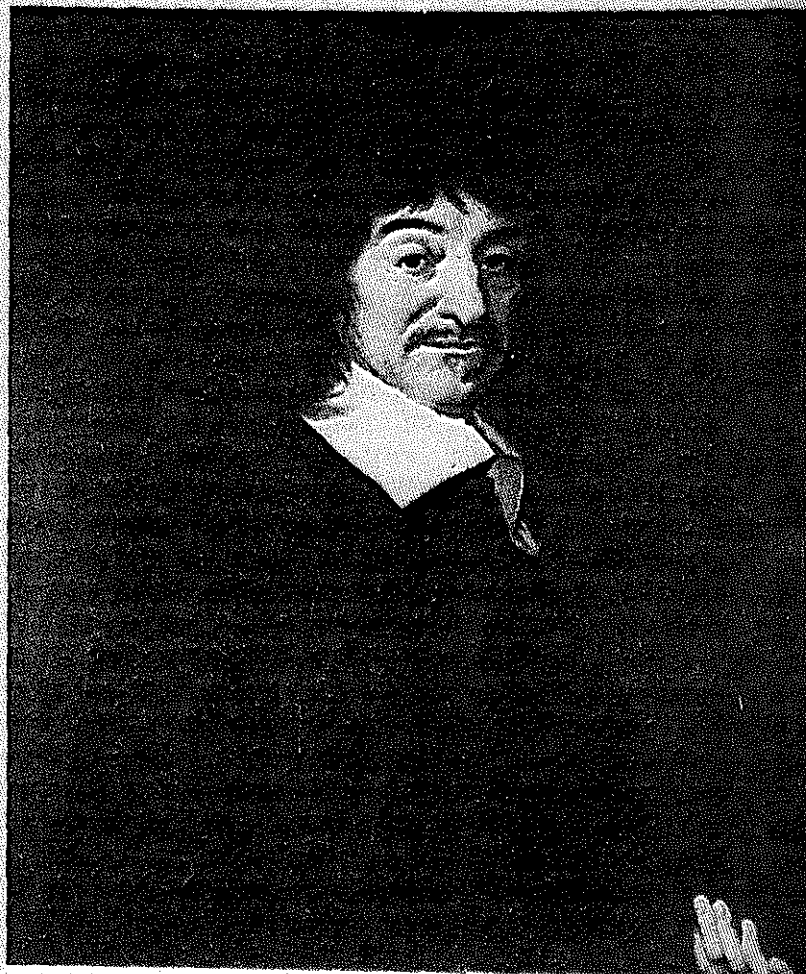
saying, "No beauty is comparable to the beauty of truth." But Descartes expressed a startlingly cynical view of marriage, saying: "When a husband weeps over a dead wife . . . in spite of this, in his innermost soul he feels a secret joy." And yet he had an illegitimate daughter whose death in early childhood appears to have saddened him greatly. At the age of thirty-two he settled in Holland where he lived for twenty years, enjoying the intellectual and religious toleration of the Dutch government.

In 1622 he finished his astronomical *Treatise on the World*, which applied his mathematical method and reaffirmed the Copernican hypotheses. As he was about to send the *Treatise* off for publication, he learned that Galileo had been condemned by the Inquisition of the Catholic Church and that Galileo's book had been publicly burned. Descartes immediately hurried to stop publication of his own book, saying, "It is imprudent to lose one's life when one can save one's self without dishonor." He attempted to have the word spread about that he held theology in highest esteem. Descartes scholars are divided on Descartes's real views about the Church and its teaching. Was his piety genuine or a pretense? He himself said, "I must find an expedience by which to speak the truth without startling anyone's imagination or shocking opinions commonly received." And he also said, "Now that I am to be not only a spectator of the world, but am to appear an actor on its stage, I wear a mask." Descartes's mask represents one way of dealing with persecution. But one thinks also of Socrates or the contemporary Russian dissenter Alexander Solzhenitsyn, who were outspoken in the face of persecution and willing to face death or exile.

Three years after Descartes's fright at Galileo's punishment, he published an application of his mathematical method to physics, prefacing it by the *Discourse on Method*, which remains a philosophic classic to this day. Ten years later in 1647 he published the *Meditations on First Philosophy*; twenty-two years later, in 1669, the *Meditations* were placed by the Inquisition on the index of books which Catholics were forbidden to read.

The last notable event in Descartes's life was his receiving a request from the intellectual Queen Christina of Sweden to come and help her understand his philosophy. He hesitated to go to what he called "the land of ice and bears"—but he complied. Five o'clock in the morning was the hour at which

Christina's mind was most active and was the time set for the instruction. Returning from court one November morning in 1650, he got a chill and died of pneumonia within a week. Thus perished the greatest philosopher of France at the height of his powers. What is the claim of Descartes to greatness as a philosopher? Etienne Gilson, a twentieth-century French philosopher, says of Descartes: "He lived by thought alone for thought alone . . . never was an existence more noble than his."



**"Portrait of René Descartes" by Franz Hals.**

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# DOUBTING TO BELIEVE

## Historical Situation

A portrait of René Descartes, the father and originator of modern philosophy and France's greatest philosopher, hangs in the Louvre Museum in Paris. He looks out at you from heavy-lidded eyes, aloof and somewhat arrogant, and the smile is one of gentlemanly scorn and contempt. How did this seventeenth-century man shape the philosophy of the modern world in which we live?

Descartes appears to have felt only contempt for French society, for the court of Louis XIII, for the clergy of the French Church, for the professors in the universities and for the man in the street. His contempt was undisguised for what was taught in the universities, which he regarded as traditional, outmoded, stagnant, still clinging to medieval learning and submissive to Church authority.

Descartes is sharply critical of La Flèche, the Jesuit college which he himself attended and which had recently been established for the education of the sons of the French nobility. Of his eight years at La Flèche he says:

From my childhood I lived in a world of books and . . . I was eager to learn from them. But . . . as soon as I had finished the course of studies . . . I found myself saddled with so many doubts and errors that I seemed to have gained nothing. Nevertheless, I had been in one of the most celebrated schools in all of Europe.

At college he had studied Greek, Latin, history, literature,



science, mathematics, and philosophy. Of these, only mathematics, which had been well taught at La Flèche, and the modicum of science which was offered seemed to have any certainty or to provide true knowledge of the world. But Descartes goes even further in his criticism of education, to argue that our beliefs would be less contaminated by errors and on firmer ground if, from childhood, we had never been under the control of teachers and subjected to their confused ideas, but had been guided solely by our own reason.

Descartes had a special scorn for philosophy—philosophy was a term of contempt and derision for him. Rival philosophers contradict one another, he says, without there being certainty on either side. Philosophers are ignorant of mathematics and science; they base their logical argumentation upon authorities which are ancient and outmoded. The result has been, Descartes charges, that philosophy “has been studied for many centuries by the most outstanding minds without having produced anything which is not in dispute.” With such statements Descartes, the father of modern philosophy, seems very modern indeed. He appears to resemble the revolutionary students of the 1960s who condemned the universities for their irrelevance to the problems of war, civil rights, and poverty. But Descartes is not asking for relevance, he is asking for truth, and for the overthrow of false beliefs in order that he may reach truth.

Truth is Descartes's passion: He says of himself:

I have always had an extreme desire to learn how to distinguish the true from the false, in order to see clearly how I should act and to be able to travel with assurance through this life.

But is it possible for me to overthrow all the accumulation of my lifelong beliefs, however false or uncertain, and to use only my own reason as the basis for believing anything? This is what Descartes proposes and this is the way modern philosophy begins—with a revolutionary overthrow of all belief, and so with a complete break with the medieval world, including the authority of the Church-controlled Scholastic philosophy.

Modern philosophy may be said to begin with Descartes's *Meditations*, with the self in solitude, meditating, becoming conscious of the false and doubtful ideas one has accepted so far in life, and deciding that the time has come to overthrow

all of one's beliefs. In the first sentences of the *Meditations*, Descartes says: “Everything must be thoroughly overthrown for once in my life, if I ever want to establish anything solid and permanent in the sciences.” Descartes goes on to say: “Today I have freed my mind from all cares. I am quite alone. At last I shall have time to devote myself seriously and freely to the destruction of all my former opinions.” But can I, by my own reason, establish solid and permanent truth?

## Theory of Knowledge: Rationalism

Descartes's answer is that of Plato and all rationalism. Rationalism claims in support of reason that reason is universal in all human beings; that reason is the most important element in human nature; that reason is the only means to certainty in knowledge; that reason is the only way to determine what is morally right and good and what constitutes a good society.

But how can I, by using my own reason, establish solid and permanent truth which past philosophers have failed to do? Descartes's answer is again that of most rationalists: Let mathematics be your ideal, let mathematics be your model for the use of reason. In his *Discourse on Method*, Descartes says: “Of all who have sought for the truth in the sciences, it has been the mathematicians alone who have been able to succeed in producing reasons which are evident and certain.” And it was the method of mathematics, using reason alone, Descartes believes, which enabled the Polish astronomer Copernicus in the sixteenth century to revolutionize astronomy with his new heliocentric theory of the universe, and enabled the Italian astronomer Galileo in the seventeenth century to provide the proof of the Copernican theory.

Mathematics is the method which Descartes the mathematician, himself the inventor of analytical geometry, wants to use for philosophy. Mathematics, he thinks, can clear up the confusions and uncertainties of philosophy. The method of mathematics will gain the same clarity and certainty for philosophy as for geometry, and as the scientists have gained for physics and astronomy. By using the method of mathematics, philosophy could achieve absolute certainty and could prove itself, as mathematics does, to my own reason, to all human reason, and be acknowledged as universally true. Philosophy could then reach final and certain truth which

would decisively end the disputes among the philosophers and the bitter controversy raging between the Church and the scientists. Philosophic certainty would also bring about an end to the fear of the Inquisition under which scientists lived, the fear of being sentenced to imprisonment or torture, the fear that Descartes himself had that he might suffer the same fate as Galileo.

### The Method of Mathematics: Intuition and Deduction

But what is the method of mathematics? Descartes tells us in his *Rules for the Direction of the Mind*. Mathematics consists in the use of only two mental operations by which true knowledge can be achieved: intuition and deduction.

**Intuition.** By intuition he means our understanding of self-evident principles, such as the axioms of geometry (a straight line is the shortest distance between two points; or, things equal to the same thing are equal to each other) or such as an arithmetic equation ( $3 + 2 = 5$ ). These statements are self-evident in that they prove themselves to reason: To understand them is to know that they are absolutely true; no rational mind can doubt them.

**Deduction.** By deduction he means orderly, logical reasoning or inference from self-evident propositions, as all of geometry is reasoned in strict order by deduction from its self-evident axioms and postulates. "The chief secret of method," says Descartes, "is to arrange all facts into a deductive, logical system."

Descartes's goal as a philosopher is to build a system of philosophy based upon intuition and deduction which will remain as certain and as imperishable as geometry. No philosopher has ever made a bolder attempt to arrive at a philosophy of absolute truth. The entire series of the six meditations, day after day, is a single sustained effort to reconstruct philosophy, to find for philosophy the certainty of a mathematical proof. What Descartes is determined to find is a self-evident principle which will serve as the axiom or first principle for his mathematical philosophy, and which will serve as the foundation from which an absolutely certain philosophy can be deduced.

But what are the requirements which this foundational belief must meet? Descartes lays down three:

1. Its certainty must be such that it is impossible to doubt, it is self-evident to reason, it is clear (in itself) and distinct (from every other belief).
2. Its certainty must be ultimate and not dependent upon the certainty of any other belief.
3. It must be about something which exists (so that from it beliefs about the existence of other things may be deduced).

### Theory of Knowledge: The Method of Doubt: Skepticism

But how will I find such a belief? Descartes asks. And he answers: By the method of doubt. The attitude of doubt was in the air in this transitional era of the seventeenth century, with old beliefs and philosophies losing their credibility and the new scientific theories under fire and not yet established on a firm philosophical foundation. Descartes, too, uses the method of doubt. But despite the solitary quiet of his *Meditations*, Descartes's doubting is revolutionary. He is going to overthrow all his beliefs, doubt everything. To achieve his bold quest for an absolutely certain philosophy, Descartes is willing, with equal boldness, to overthrow and destroy all he has ever believed, to cast doubt upon all his beliefs. *Skepticism* is the name for the philosophic position of doubt concerning the reliability of knowledge. Descartes's type of skepticism is called methodical, or methodological skepticism, defined as the use of doubt methodically in order to arrive at true knowledge.

Descartes uses methodological skepticism in order to overthrow his beliefs. Meditation I is entitled "Of the Things Which We May Doubt." But to doubt all of his beliefs by taking a complete inventory of them individually would be interminable. I will examine them, says Descartes, the lover of mathematical orderliness, by classes or groups to see if there is any one belief which defies doubt by meeting the three criteria: First, that the proposition be impossible to doubt; second, that it be an ultimate truth; and third, that it be about something that exists. And so, class by class, group by group, he goes through all his beliefs.

- (1) First to be examined are the beliefs of sense perception.



These are the most readily believed of all, but they are often deceptive. What distant objects look like to the naked eye, for example, is now denied by the telescope (Galileo had invented the telescope in 1609). What minute objects look like to the naked eye is now denied by the microscope (which Kepler had designed in 1611). And what about optical illusions such as the pencil that looks bent in the water? And the hallucinations that affect the senses? Clearly, says Descartes, the senses are untrustworthy as a source of certainty. What has deceived me once may deceive me again. But surely, Descartes insists, I cannot doubt my senses telling me that "I am here, seated by the fire, attired in a dressing gown . . . and that these hands and this body are mine?" Yet have I not dreamed that I was sitting here? he asks. And may I not be dreaming now? (Descartes, who slept so much, must have had this dream often.) What I perceive by the senses may be the deceptions of a dream. (2) Descartes now goes to another class of his beliefs. What about beliefs in material things or the belief that a physical world exists? These must be doubted because they are based upon sense perception, which has been shown to be deceptive and therefore lacking in certainty. (3) Third, Descartes asks: What of beliefs from the natural sciences? These, too, must be doubted because they are based upon objects known by sense perception, which is now established to be untrustworthy.

(4) Fourth, Descartes moves on to mathematical beliefs. What about beliefs in mathematics? Why does he doubt these? He has always regarded mathematics as the very model of certainty, as completely certain in its propositions. Moreover, mathematical beliefs are not rendered doubtful by being derived from sense perception. "For whether I am awake or whether I am asleep" Descartes says, "two and three together will always make the number five and the square will never have more than four sides; and it does not seem possible that truths so apparent can ever be suspected of any falsity." These beliefs are known by reason, not by the senses. But is it impossible to doubt them? Mathematicians, he reflects, fall into error sometimes. Could they always be in error?

In an effort to push his methodological skepticism to its extreme, and for lack of a reason to doubt mathematics, Descartes invents one. Suppose, he says, there is an evil and powerful demon who deceives me in all the things I think I know best? In that case, I am always deceived, always in

error, even in mathematics, even in the propositions I think are self-evident, such as  $3 + 2 = 5$ . This is the strongest possible doubt. Descartes himself says it is exaggerated, "hyperbolic." It seems contrived, not a genuine doubt. But he pushes his case. Can any belief withstand this doubt? Can any belief withstand my doubting all beliefs on the ground that I may be deceived by some malevolent demon in all my beliefs, even those I regard as absolutely certain?

Now Descartes enters with his famous triumphant reply: Even if I am deceived in all my beliefs, I must exist in order to be deceived. If I doubt all my beliefs, including those of mathematics, there is one belief that cannot be doubted: Every time I doubt, I must exist to doubt. In doubting the truth of every other belief, I cannot doubt the belief that I am doubting, therefore I exist. Even if all the beliefs I am conscious of are false, one belief remains true: At any moment that I am conscious of thinking, or of any mental act such as being conscious of doubting or willing, I exist as a thinking thing.

And so Descartes has found his absolutely certain, self-evident, and indubitable first principle. He formulates it in Latin as *cogito, ergo sum*: I think, therefore I am; in French, *je pense, donc je suis*. Thinking for Descartes includes any act of consciousness that we are immediately aware of. "By the word thought I understand all that of which we are conscious as operating in us." Thinking includes doubting, understanding, affirming, denying, willing, refusing, feeling. As conscious acts, all of these necessitate my existence. I think, therefore I am. I doubt that I think, I deny that I think, these only confirm that I must exist to deny or doubt.

How do I know this belief, *cogito ergo sum*? By immediately understanding as self-evident that to think (doubt or deny or will) I must exist and that my thinking without my existing is impossible. *Cogito ergo sum* is true each time I think it. *Cogito ergo sum* is true each time I deny it. But what is this I who thinks and therefore exists? The *Cogito* proves only that I exist as a thinking thing—and only when I am conscious of thinking. The *Cogito* proves only that I am a thinking thing, an existent substance, and that it is my nature to have thoughts, ideas, beliefs. But nothing has been proven by the *Cogito* about my body or its movements, my walking or eating. I cannot claim self-evident truth for: I move, therefore I am. My moving I can know only by sense perception,

by observing myself to move. The Cogito proves only that whenever I am conscious of thinking, I exist as a thinking thing.

But does the Cogito fulfill the three requirements Descartes laid down for the first principle, the foundation of his philosophy? (1) Is it self-evident to reason, indubitable? Descartes answers: Yes, you can't escape the Cogito by doubting it. Every time I doubt it, I affirm it. (2) Is it independent of any more ultimate truth? Descartes answers: Yes, the Cogito is not inferred from the more ultimate truth: All who think, exist; I think, therefore I exist. On the contrary, I myself recognize as a self-evident truth that I exist whenever I think. (3) Does it refer to the existing world? Descartes answers: Yes, the Cogito refers to me, who exists as a thinking thing. *Sum.* I am. I exist.

And so Descartes claims that the Cogito checks out with his three requirements. Have later philosophers agreed? Does the Cogito proof withstand criticism as an absolutely certain foundation for philosophy? There have been hundreds of critical commentaries on the Cogito proof. Of these, the most frequent attack is one first made by Pierre Gassendi in letters to Descartes. Gassendi claimed that the Cogito does not meet the second requirement, that it is not ultimate but depends upon other truths. Two of these truths upon which the Cogito depends are: (1) That things or substances exist. (2) That thinking or any other action or state can exist only as the action or state of a substance. These two truths are necessary for the proof of the Cogito: Every time I am conscious of thinking, I, a thinking substance, exist; and thinking is an action which can exist only as the action or state of a substance. Descartes assumes these two statements as truths but does not prove them. In fact he borrows them from the very medieval philosophers whom he despises. His philosophy is no less based upon the existence of substances and their states, actions, or attributes than the philosophy of the medieval Scholastics.

And finally, what about the influence of the Cogito? Descartes grounds his entire philosophy on the absolute truth that when I am conscious of thinking, I know I exist. In Descartes's theory of knowledge, the one truth that is unshakable, safe and secure from any doubt, is that of my own existence as a conscious subject. Thus the Cartesian Cogito introduces subjectivism into modern philosophy.

## Subjectivism

*Subjectivism* is the view that I can know with certainty only myself as conscious subject and my thoughts. It is the view that I can know with certainty only my own mind and its content. Subjectivism carries the implication that the knowledge of other minds and of material objects can be proved, if at all, only by inference from what I know with certainty, the existence of my own subjective consciousness and my thoughts or ideas. (Note the title of Meditation II: "Of the Nature of the Human Mind and That It Is Easier to Know Than the Body.") Therefore for subjectivism the knowledge of the existence of every thing other than my own mind becomes questionable, problematic: The existence of my body, the sun, other minds, God, the physical universe, these must be proved to exist and they can be proved to exist in only one way: by inference from my consciousness and its content, which are all that can be known with certainty.

But since my own mind and its thoughts are all I can know with certainty, and since the existence of anything else is therefore questionable, subjective consciousness and its contents are separated from the physical world of nature and from the social world of human beings. These are external to me, out there, separate from what I am certain of—my own consciousness and its thoughts. Can this chasm, this gulf ever be bridged? This problem and these questions begin with Descartes and plague all philosophy which comes after him.



## 8

## GOD EXISTS

## Theory of Knowledge

Descartes has begun his bold and grandiose attempt to build a rationalistic mathematical philosophy which no one could doubt. So far, in Meditations I and II, he has established a first principle, an axiom for his philosophy: *Cogito ergo sum*. Every time I think, I exist as a conscious being, a thinking substance. This he established as a self-evident truth, which no mind could doubt or deny.

But he is now afraid that he is stuck, trapped in the Cogito. The Cogito proof establishes that *I exist* as a mind with my own thoughts, and that this is all that I can *know* with certainty. This is the position of *subjectivism*. But Descartes fears that he may fall into the philosophical position of *solipsism*, the view that my mind with its thoughts is the *only* thing that exists, the only reality: and that other persons and the physical world are only ideas within my mind. Solipsism is dangerously close to being a philosophic expression of the form of insanity called *schizophrenia*. One striking feature of the schizophrenic personality is his withdrawal from the common world of reality into his own private world, in which his mind and his thoughts are all that exist for him, are the only reality. Has the Cogito proof that I exist as a thinking thing with my own thoughts become a trap, trapping Descartes in solipsism, the doctrine that my own mind with its own thoughts is all that is real? And trapping him also in the schizophrenic's withdrawal into a private, closed-in world as the only reality?

How can Descartes escape this strange solitude of solipsism and the private, cut-off world of schizophrenia? He can do this

only by proving that something else exists besides his own mind and its thoughts. In that case, my mind would not be the sole reality. But how, with his demand for absolute mathematical certainty, can he prove that anything exists except his own mind and its ideas?

**The Test of Truth.** Descartes goes back to the Cogito: It at least is an absolutely true proposition. But what makes it true and certain? His answer is that a proposition is "true and certain" insofar as it is clear and distinct to the mind. A true and certain proposition is so clear in itself, and so different from any other idea, that the mind cannot help accepting it. This, then, is his criterion or test of certain truth—that in order to be certainly true, ideas must be self-evidently clear and distinct. But he has already run into a problem on this score with regard to mathematical propositions. Mathematical propositions he believes to be self-evidently clear and distinct, and thus as meeting the test of being "true and certain." But Descartes now sees that this very belief must be doubted, in accordance with the principle of methodological skepticism—doubting whatever can be doubted. How do I know that propositions which are clear and distinct are certainly true?

Once again, then, Descartes raises the possibility that in believing in the certainty of mathematics he is deceived by a malignant or evil god. It would be easy for him, says Descartes, if he wishes it, to cause me to fall into error, or to hold false beliefs, even when I believe myself to have the very best evidence. An evil, deceptive god could not deceive me with regard to the Cogito—I think, therefore I am—since even if I am deceived in believing it, I must exist as a thinking thing. But an evil god could deceive me with regard to any other belief. Then how, Descartes asks himself, can I know that anything else exists other than what the Cogito establishes, that I exist as a thinking substance? How can I know that there is any reality other than my mind? And so Descartes decides, near the beginning of his Third Meditation, "I must examine whether there is a God as soon as an opportunity occurs, and if I find there is one, I must also investigate whether He can be a deceiver, for as long as this is unknown, I do not see that I can ever be certain of anything."

*w/o God → solipsism*

## Rationalistic Proofs of the Existence of God

Descartes therefore must prove that God exists and that He is no deceiver. But is it possible to prove that God exists? The great medieval Catholic theologians, such as Saint Anselm and Saint Thomas, tried to prove by rational deductive arguments that God exists. Reasoning from axioms which they believed to be self-evidently true, they attempted to deduce the existence of God. These are now called the Classical Rationalistic Proofs of the Existence of God, and they have been subjected to devastating criticism by modern philosophy.

But Descartes cannot at this point in his own philosophy make use of these famous medieval proofs of God's existence, because he now knows only that he himself exists. He cannot, therefore, argue, as Saint Thomas did, from the existence of the world, with its vast chain of causes and effects, to the existence of God as first cause. This type of argument, offered by Saint Thomas, is known as the Cosmological Argument or Proof of God's Existence, and it claims that since everything in the world has a cause there must be a first cause in the series of causes, and to this necessary first cause of all else, "everyone gives the name of God." Clearly, Descartes cannot argue that God exists as the necessary first cause of all other causes in the world, because Descartes has not yet proved that there is a world, and so is not entitled to use the world in an argument. Similarly, Descartes cannot use another of Saint Thomas's proofs of God's existence, the so-called argument from design, which also assumes that the world exists, and reasons that the harmony and orderliness and beauty of physical nature, by which humanity is provided with suitable temperature, light, air, food, water, shelter, and aesthetic delight, could not be accidental, but must have been planned or designed for the well-being of humans by an intelligent being. Standing on a mountaintop, or seated in a plane, overlooking a vista of mountains and valleys, who has not believed at that moment that this panorama is designed by God? God exists, reasons the argument from design, as the necessary designer, planner, and governor of the world. But Descartes cannot deduce from the beneficent and harmonious order of the world the existence of God as the master intelligence who designed such a world, because Descartes has not yet proved that the world exists.

How, then, will he make his move out of the Cogito, which establishes only the certainty that I myself exist, to prove that God exists? He can prove God's existence only by reasoning from the only proposition he has established as absolutely true—that I, Descartes, exist as a thinking thing, a conscious substance, having ideas.

**Theory of Knowledge: Ideas.** By "idea" Descartes means anything one is conscious of—feelings (of joy or pain or empathy); sense perceptions (of the sun, or of a tree, or of crowds of people on a city street); recollections or memories (of one's childhood, or of a recent war, or of a public scandal); thoughts of the intellect or reason (scientific, mathematical, or philosophical statements).

Once again, Descartes looks at his ideas and finds that he can identify three main features of ideas—where they come from, what kind of reality they have, and what they refer to. His first point is that when we ask what the source of our ideas is, where they come from, how do we happen to have them, we find that there are three kinds of ideas: there are those ideas which he claims are born with everyone, and which he calls *innate*, and appear to come from our own nature, and to be known by the light of our own reason, such as the ideas of substance or thing, cause, existence, time, space, the basic principles of mathematics and logic. Second, there are those ideas which appear to be invented by human imagination, and which he calls *factitious*, such as ideas of mermaids, unicorns, utopias, or future worlds. And third, there are those ideas which appear to come from outside us, which nature seems to suggest to us, and which come despite our will. These ideas he calls *adventitious*, for example, hearing a noise, seeing the sun, trees, or colors. Descartes has now shown the ways in which ideas differ with respect to their source or how we come to have them. *Innate ideas* are those that come from the nature of human reason itself and are natural to all human beings; *factitious ideas* come from human imaginative inventiveness; and *adventitious ideas* seem to be caused by things outside us in the world.

Now he proceeds to the second feature of ideas, the kind of reality they have. His point is that insofar as ideas are present in our minds, they exist actually in our minds and have what he calls *actual or formal reality*. And now Descartes makes his third and last point with regard to ideas. Here he is not concerned with where ideas come from or what kind of reality



they have, but with what they are ideas of, what they are about, what objects do they represent? Ideas are ideas of something, of objects, ideas represent or refer to objects. This feature of ideas Descartes calls their *objective reality*. The objective reality of ideas consists in their referring to objects, their being about objects—as the idea of God refers to God, the idea of an oak tree refers to an oak tree, the idea of my army refers to an army.

**The Idea of God.** All of these ideas, he says, could possibly be factitious, my inventions, “made up” or caused by me, except for the Idea of God. Now Descartes is ready to begin talking about the Idea of God. But what is our Idea of God? God is an existent substance possessing all positive qualities in their most eminent degree, that is, in the fullest degree of reality, in their perfect form. And, Descartes adds, God is infinite perfect being. He has in Himself any infinite perfection for good that is not limited by some imperfection. The positive qualities of goodness, knowledge, power, duration, are possessed by God to this perfect degree. Descartes presents the Idea of God: “By the name God I understand a substance which is infinite, independent, all-knowing, all-powerful, and by which I myself and everything else that does exist, have been created.” Descartes’s argument will be that we can think this Idea of God only because a real God exists who is the cause of this idea. He is going to argue that what makes it possible for us to have this idea can only be God Himself, whose existence causes us to have it.

**First Proof of God.** How does Descartes prove this?

**Ideas and Causes.** First of all, he says, we have a clear and distinct Idea of God. But all ideas are the effects of causes. Then there must be some cause of our Idea of God. Furthermore, he says, we must remember three self-evident propositions about causes:

1. There must be as much reality in the cause as in its effect. “For pray,” he asks, “whence can the effect derive its reality if not from its cause?”
2. Something cannot proceed from nothing.
3. What is more perfect cannot proceed from the less perfect.

Therefore nothing could cause my Idea of God as a perfect substance that is not as perfect as the idea. Although I could be the cause of my ideas of physical objects or animals or

men—since there is nothing so great or perfect in these ideas that I could not have caused them—I could not, however, have caused the Idea of God because I am only a finite, imperfect being, whereas the Idea of God is of a perfect, and infinite, being. So something else, greater than me must have caused my Idea of God, something which is at least as great and perfect as the effect, my Idea of God. Therefore, the cause of my Idea of God, since it must be as great as the effect, can only be an infinite, perfect being, namely God Himself. Therefore, God exists as the only possible cause of my idea of Him.

This is Descartes’s first proof of God. Having proved that God exists, we can now know that God cannot be a deceiver, since fraud and deception, says Descartes, have their origin in some defect, or imperfection, whereas God as perfect being has no defects or imperfections. God does not will evil or practice deception, since these are imperfections, the negation of perfect being.

**Doctrine of Innate Ideas.** Finally, Descartes claims that my Idea of God is innate in me, native to my mind. God is the cause of this idea in us. He has caused this idea to be innate in all human beings. God has imprinted it in us as the mark of Himself, the workman who has fashioned us. Many ideas are thus imprinted in us from birth: for example, the ideas of God, cause, substance, logic, and mathematics. They are not derived by generalization from experience, nor do they require empirical evidence. Innate ideas are clear and distinct, self-evident to the mind. We can know that they are absolutely certain truths since God has been proven to exist, and God would not deceive us in what is self-evident to the reason He has given us.

## Criticisms of First Proof of God

There was a great flurry of objections by critics to this first proof of God presented by Descartes. The critics disagreed that God is the only possible cause of my Idea of Him. They argued that an individual person could cause the idea of an infinite being, since it is merely a negative idea, a negation of our limitations or finiteness. An infinite being is simply a being without my limitations. In defending himself against these critics, Descartes argued that the idea of the infinite is

not merely the negation of the finite. Finitude, imperfection in knowledge or power of goodness, requires a standard of perfection. How would I know that I am imperfect, how would I know that something is lacking to me unless I had within me for comparison and as a standard the idea of a perfect being? Descartes is here identical with Plato in insisting that knowledge of the ideal, the standard, the pure form is necessary in order to judge the imperfections of the world and that this knowledge cannot come from the imperfect world. Descartes argues that the innate, God-given Idea of God is necessary for us to be able to judge our finiteness and imperfections.

Most moderns would also disagree with Descartes on several other points. They would argue that the Idea of God as he defines it is not universal and therefore cannot be innate in all human beings. God apparently has not imprinted this idea upon humans in the Oriental world; Buddhism, for example, has no idea of a supernatural God, such as Descartes claims is innate in all human beings. Neither do many African and American Indian tribes have such an idea. The Cartesian Idea of God is clearly the product, most moderns would say, of being socialized into cultures that are Judeo-Christian, as Descartes, Saint Thomas, and the scholastics were. Moreover, most moderns would challenge the claim that the concept of perfection is necessary for the concept of imperfection. Instead, they would say perfection, the idea of an infinite being, is the product of reasoning, extending and magnifying the qualities (e.g., knowledge, power) of a finite and imperfect being. And finally, moderns would argue against Descartes's rationalistic view of causality, in which the effect can be no greater than the cause, the more perfect cannot come from the less perfect, and something cannot come from nothing. Modern empiricism means by cause and effect only an invariant relation in space and time.

**Second Proof of God.** But Descartes offered two other proofs of God as well, since he feared that his first proof might be too complex for his readers, as indeed it turned out to be. And so we turn to his second proof. "I asked," he says, "whether I, who have the idea of an infinite and perfect being, can exist if this being does not exist?" Notice that this proof is, like the first proof, based on the Cogito, on my existence as a conscious being having ideas. What then are the possible causes of my existence? Descartes enumerates all

the possibilities: Myself? My parents or some other source less perfect than God? Or God?

Descartes moves along in his argument by a process of elimination: (1) Not myself. I cannot have caused myself to exist because if I were the author of my own being and independent of everything else, nothing would be lacking to me, I would doubt nothing and desire nothing (so also says the twentieth-century philosopher Jean-Paul Sartre—to be without lack is what we all desire and can never have). If I could, says Descartes, I would have given myself all perfections, but I lack the power. Therefore I cannot be the cause of myself. (2) Not my parents or any other cause less perfect than God. My parents have caused me to exist, but one must then ask who caused them to exist, and then one falls into an infinite series of causes, going back further over the generations. (3) Therefore God exists as the only possible cause of my existence as a thinking thing.

**Third Proof of God.** Descartes's third proof of God is not presented until the Fifth Meditation. He still bases his argument on the Cogito, but he has already established the existence of God and the truth of all his clear and distinct ideas, since God does not deceive us. (In the first proof, in the Third Meditation, he had asked what is the cause of my idea of a perfect being, God? In the second proof he had asked what is the cause of my existence as a conscious being having this Idea of God?)

Here in the Fifth Meditation Descartes focuses upon his Idea of God as a clear and distinct idea. Having established that his clear and distinct ideas are true, he sees that this may be used for another proof of God. He says, all the properties I clearly and distinctly conceive God to have, truly belong to Him, just as the properties of a triangle that I clearly and distinctly perceive (for example, that the sum of its internal angles is 180 degrees) belong to the triangle. Descartes argues that just as the clear and distinct idea of a triangle includes that the sum of its angles is 180 degrees, so the clear and distinct idea of a perfect being includes the perfection of existence. To exist, he argues, belongs to the nature of God as a perfect being. If God lacked existence, He would be less than perfect. But God has no imperfections. The clear and distinct Idea of God is of a divine nature with all perfections, and necessarily with the perfection of existence.

Descartes is here offering what is called the ontological



proof of God, which argues from our Idea of God as a perfect being to the claim that His nature must therefore have the perfection of existence. This argument was developed by Saint Anselm in the eleventh century. In opposition to this ontological argument, Descartes's polite but hostile critic the empiricist Pierre Gassendi, who had been sent a copy of the *Meditations* for his comments, claimed that the Idea of God as a perfect being has nothing whatever to do with the actual existence of such a being. Years later, Kant and other philosophers offered the same criticism.

**The Cartesian Circle.** And now to mention what many regard as the most serious criticism of Descartes's *Meditations*. This is a criticism of what is commonly called the Cartesian Circle. ("Cartesian" is the adjective derived from Descartes's name.) (We have seen that Descartes's strategy is to use the proof that a perfect, nondeceiving God exists in order to establish that I can trust my clear and distinct ideas and thus move beyond the Cogito to other certain truths. But is this not a vicious circle? Because in order to prove that God exists, Descartes had had to use the very clear and distinct ideas (i.e., substance, cause, the effect cannot be greater than the cause) that God's existence was supposed to guarantee. And so God guarantees my clear and distinct ideas: but my clear and distinct ideas are what guarantee the existence of God.) Thus, to prove that my clear and distinct ideas are true, Descartes had to show that God exists and that He is not a deceiver. This he does, but in proving that God exists he relies on the truth of clear and distinct ideas that God's existence was supposed to guarantee. Few scholars believe that Descartes can avoid this vicious circle. In Descartes's own time his critic Arnauld perceived the Cartesian Circle immediately: God's existence is guaranteed by the clear and distinct ideas that His existence was supposed to guarantee, such ideas as the effect cannot be greater than the cause and the more perfect cannot come from the less perfect.

*Med IV* When we turn to Meditation IV, Descartes is finding it necessary to explain how we fall into error. Since he has proved the existence and truthfulness of God and the certainty of my clear and distinct ideas, then how is it possible for me to make errors, and false judgments. God is not

responsible for my errors. Rather, says Descartes, error is the result of the imbalance between my understanding and my will. My understanding enables me to have clear and distinct ideas only about a very limited number of things. But my will ventures into claims about all manner of things. The way to keep from falling into error is to restrain the will from making judgments about what the understanding does not clearly and distinctly know. (Here we see again the prudence of Descartes.)

So far, Descartes's mathematical procedure has shown: (1) that what I can be most certain of is my own existence as a conscious being; (2) next, I can be certain of God's existence, and more certain of God's existence than of anything in the physical world. So far, he has proven only that he himself exists as a thinking thing and God exists: How can he show that the physical world exists? But the physical world is what the exciting new science was about—the new science of physics and astronomy, for which Galileo had been punished until his death. How can Descartes prove that the physical world exists, and that it is heliocentric, without being punished by the Church's Inquisition and dying as Galileo had died?

## 9

# THE CLOCKWORK UNIVERSE

Day after day, hour after hour, the meditations of the solitary philosopher continued. Descartes began the First Meditation with the remark: "Today, then, since I have banished all care . . ." He began the Second Meditation with the words: "The meditation of yesterday plunged me into so many doubts . . ." And he began the Fourth Meditation with the words: "In these past days . . ." Are the six Meditations, then, the actual work of six days, like God's creation of the world? In fact, he had worked on the problems he dealt with in the *Meditations* for ten years, and the actual writing took perhaps two years. What then are we to make of Descartes's references to his six days of meditation? In part it is for literary effect, but it is also no doubt influenced by Descartes's student days at his Jesuit college, where for the six days of Holy Week all students were required to devote themselves without any communication with the outside world to studying the spiritual meditations of Saint Ignatius Loyola, the founder of the Jesuit religious order. But whereas Loyola's meditations tried to bring about commitment to Catholicism, Descartes's meditations tried to find a philosophy which any rational mind must accept.

## The Reversal of Doubt

By the end of the Fourth Meditation, the doubt that had devastated all his beliefs has been reversed. The destruction has been replaced by a slow but rationally inescapable reconstruction of reality. We find Descartes composing the begin-

ning of the Fifth Meditation, sitting at his writing table, eager to advance this tense, tightly reasoned, and dangerous philosophic argument, eager to push the argument through to its rational completion, with all the parts in their logical order. When finished, the *Meditations* will compel acceptance, he believes, from any rational mind.

**Clear and Distinct Ideas: Meditations I-IV.** By using his mathematical method he has reversed doubt by the end of the Fourth Meditation and replaced it with certainty. In order to accomplish the reversal of doubt, these are the clear and distinct, rationally self-evident ideas he has used, whether by proving them or by assuming them as axioms without proof: (1) I exist as a thinking thing (*Cogito ergo sum*; proof); (2) the test of truth is that what is clearly and distinctly perceived is true ( $3 + 2 = 5$ ); (3) only substances exist independently (as does my mind, a thinking substance); (4) qualities, states, or attributes can exist only as states or attributes of substances (thinking can exist only as a state of a thinking thing, a thinking substance); (5) something cannot come from nothing; (6) nothing can exist without a cause (a clock could not exist without a maker); (7) the cause must be as real and as powerful as the effect (the infinite universe could have had as its cause only an infinite substance, namely God); (8) the more perfect cannot come from the less perfect (so, according to Descartes, the ideas of a perfect God could not come from an imperfect human being); (9) God exists as a completely perfect being and is self-caused, not caused by or dependent upon anything other than Himself; proof; (10) since God is perfect and not a deceiver, clear and distinct ideas, including those of mathematics and logic, which appear to be absolutely true, can be known to be absolutely true; the possibility that I am deceived in believing them to be true has been eliminated by the proof that a perfect God exists.

## Proof of the Existence of Physical Substance

Now that Descartes has proved that I exist as a thinking substance, and that God exists as a perfect substance, there remains only the last major proof—that physical substances exist independently of my mind, that physical things in a physical universe exist externally to me, a thinking thing. And so at the beginning of the Fifth Meditation, Descartes



says, "My chief task is to rid myself of all those doubts with which I have been encumbered these past few days and to see if anything certain can be known about material things." Do material things exist, Descartes asks? Can I know this with certainty, and know what the properties of physical things are? My knowledge of physical things has usually come to me through my senses. I refer my feelings to my own body as their source. And I perceive other human bodies and physical things by my senses of sight, hearing, touch, taste, and smell.

Although I once believed my senses to be telling me the truth about physical things, I came to see reasons for doubting the senses, says Descartes. On the basis of what I know now, what should I believe of all that the senses tell me? All my life my senses told me that I have a head, hands, feet, and all the other parts of the body, and that contact with other bodies sometimes gave me pleasure and sometimes pain. I noted that physical objects have size and shape and that they move; also that they are hard or soft, warm or cold, to my touch. I have also felt hunger and thirst and other appetites, and I have felt joy and sadness. I observed by my senses light, color, sounds, tastes, and smells, and these enabled me to see the sky, the earth, and the sea. It was therefore natural for me to believe that these ideas were due to objects outside me and that these objects were similar to the ideas which they caused in me.

Later, however, says Descartes, various experiences gradually ruined all my faith in the senses. I found that judgments based upon the external senses (such as sight) were erroneous; huge statues seen from a distance look tiny, and square towers appear round. Internal senses are also deceptive; I have heard that people with amputated limbs sometimes feel sensations in them. (Notice that Descartes's examples of the untrustworthiness of the senses are weak and strained—Descartes the rationalist is trying to refute empiricism, which claims that the senses are our best source of knowledge.)

What shall I now believe, he asks? Are my ideas which are based upon the senses caused by objects outside me which are similar to them? Here we see Descartes moving toward the final reversal of doubt, toward reconstruction after the skeptical destruction. I now know as certainties, he says, that I exist as a thinking thing and that God exists as a perfect being. I also know that nothing exists without a cause. What

then is the cause of my idea of bodies, my own body, others' bodies, the physical world? Here Descartes is repeating the argument he used in his first proof of the existence of God: He began from the Cogito, from my existence as a thinking thing, with an Idea of God, and asked what could be the cause of my idea? (Now Descartes asks what could be the cause of my idea of a physical body?) His procedure is again a process of elimination.

Could I myself be the cause of my idea of physical bodies? But I cannot be the cause. The size and shape of my body, the town, the people, the sun, the fields—all these ideas of bodies were passively received by me. They do not depend upon my willing them. In fact, these ideas of bodies often occur contrary to my will. When I am in a small boat far out at sea, I cannot control the gathering storm clouds. But there is another argument against my being their cause: I could not be the cause since I am a thinking substance. Inasmuch as the effect must be like the cause, the cause of the idea of physical substance must be itself a physical substance. He now asks whether God could be the cause of this idea. But then He would be deceiving me in allowing me to have a strong inclination to believe that the cause of these ideas is in physical things. Therefore we must conclude that physical things, material bodies exist as the causes of our ideas of them. And so physical substance, the last of the three components of reality—self (thinking substance), God, nature (physical substance)—has been proved to exist.

"But this does not mean," says Descartes, the rationalist, hastily, "that material bodies exist exactly as our senses show them to be." It is only my clear and distinct idea of physical things that can tell me what their true nature is. But what is a physical substance? Do I have a clear and distinct idea of it? This is the right moment, as he knew, in which to pick up from the Second Meditation his analysis of the piece of wax. This was Descartes's first consideration of material substance in the *Meditations*. He had brought it in immediately after his successful proof of the Cogito, of my own existence as a thinking substance. "I am a thinking thing . . . I am not that assemblage of limbs which is called a human body." But, he continues, in the Second Meditation, let me indulge my mind, which cannot help thinking that it knows bodies perceived by the senses better than it knows my existence as a thinking thing, which is known to me by reason. Let me

indulge my mind in thinking about body, so that later, at the right moment, the reins may be drawn in and the mind submitted to control. (The time for tightening the reins on our thinking that we know body by the senses comes in the Sixth Meditation.)

**The Piece of Wax.** Let us speak, he goes on, not of bodies in general, because such talk is confusing, but of a particular body, the bodies we touch and see. Let us take this piece of wax. Not too long ago it was in the beehive. It has not yet lost the sweetness of the honey. It still has something of the scent of the flowers from which the bees made it. Its color, shape, and size are observable to sight. It is hard and cold to the touch. If you strike it, it will give off an audible sound. In these few lines Descartes has accounted for all of the senses as they respond to the wax. But now he brings a flame to the wax. Gone immediately is the taste of honey, the smell of the flowers, the color; the shape is changed, the size increases, it liquifies, becomes hot where it had been cold. If you strike it, there is no sound.

Is it the same piece of wax? Everyone would say yes. But all its properties perceived by the senses are now changed. What property remains, in virtue of which it is the same piece of wax? The real properties of anything, Descartes argues, are those that remain constant throughout change. The property that remains in the wax is that it is something that is extended and changeable. The properties of being extended in space and capable of change are the only true characteristics of the wax or of any material body. And these properties are known by reason, by the intellect, by my rational reflection about physical things—and not by the senses. (Here we see Descartes the rationalist arguing that reason is the only method for reaching true and certain knowledge of myself, of God, of physical nature.)

(Thus Descartes has concluded that nothing belongs to physical things but extension in space, length, breadth, and depth, in various sizes and shapes, and in motion.) Physical objects, then, have only the properties or qualities of spatial extension, the qualities of size and shape and the capacity of motion, and these are the only qualities or properties which physical things truly have, the only objective qualities which physical nature has. What, then, does Descartes have to say about other qualities, those that did not remain when the wax melted, the qualities of color, touch, taste, smell, sound? Do

these qualities *not* belong to physical things? Did they not belong to the piece of wax before it melted? Are the golden color and the sweet smell of the wax objective qualities? Do they exist as the qualities of physical substances or not?

What is Descartes prepared to say about the color and sounds and smells and tastes of the piece of wax, of the physical world? Descartes is prepared to say only what the physicist Galileo had said—that the only objective, real qualities of physical objects are the qualities of being extended in space with some size and shape, and being capable of motion. These are the qualities which reason knows by a clear and distinct idea to constitute the true nature of physical things. Moreover, these are the qualities which a physical body must have in order to be a physical thing—the piece of wax could lose its softness, its smell of honey, its sweetness of taste, and still be a physical thing. Why? Because it still has spatial extension, it still has length, breadth, and depth. In other words, physical things need not have colors or tastes or odors in order to exist, but in order to be physical things at all, they must have size and shape.

What, then, is the case against colors, tastes, sounds, as objective, real qualities that belong to physical substances? (1) Colors, tastes, sounds, and smells are not necessary qualities of physical things, such as the piece of wax, whereas having spatial extension, having some size and shape is necessary for the piece of wax to exist at all as a physical thing. Colors, tastes, sounds, are not qualities which are necessary to the existence of a physical thing. (2) We have a clear and distinct idea of spatial extension as the necessary, essential quality of the piece of wax, but we have no clear and distinct idea of the color of the wax as belonging essentially or necessarily to the piece of wax. In fact, as Descartes says in the Sixth Meditation, what we apprehend by the senses (colors, tastes, and sounds) are not qualities of physical objects at all, but rather they are qualities which exist only in us. They are caused by external objects which stimulate our sense organs. The stimulation of the eyes, ears, nose, throat, and skin has the effect of our seeing colors, hearing sounds; and experiencing odors, tastes, and tactile sensations like hot and cold, hard and soft, rough and smooth. These qualities are not in physical objects, they are not real attributes of the physical world—they are merely in us, the result of the impact of physical objects upon our bodily sense organs.



We have already seen that Descartes himself classified such ideas as adventitious ideas, ideas which come to us from things outside us in the world. By contrast, the idea of spatial extension as the essential, necessary quality of physical things Descartes has classified as an innate idea, an idea which is born with every human being, and is known by our reason, not by our bodily sensations. The qualities of color, sound, taste, which Descartes calls adventitious and says are in us and not in the physical object, were named *secondary qualities* by the empiricists of Great Britain before the seventeenth century ended—and this is what they have been called ever since. The name of *primary qualities* was given to those qualities which Descartes identified as known by reason, as the qualities necessary to a physical thing—size, shape, and the capacity of motion. For Descartes, primary qualities of physical things are known by reason, by a clear and distinct idea; the empiricists will argue that both primary and secondary qualities are known only by the senses. Descartes's friend Mersenne had collected a sixth set of "objections" to the *Meditations* from his own circle of philosophers and mathematicians in Paris. Descartes replied with a strong defense of his theory of physical substance:

I observed that nothing at all belonged to the . . . essence of body except that it was a thing with length and breadth and depth, admitting of various shapes and various motions . . . which no power could make to exist apart from it; and on the other hand that colour, odours, savours and the rest of such things were merely sensations existing in my thought, and differing no less from bodies than pain differs from the shape and motion of the instrument which inflicts it.

Descartes's theory of physical substance was of great advantage to the new physical sciences. By denying the objective reality of secondary qualities and insisting that the only qualities of physical objects are the spatial qualities of size, shape, and the capacity of motion, Descartes limited the properties of matter to those which scientists could measure, quantify, and explain by mathematics. (Not only did Descartes show that the physical world exists—but that the physical world has exactly those qualities which the new science says it

has—it is nothing but particles with size and shape moving according to the laws of mechanics. By claiming that the physical world is knowable by the absolutely true laws of geometry and mechanics, Descartes laid the foundations for contemporary mathematical physics.

But if physical bodies are nothing but spatially extended things, if they are only sizes and shapes in space, analyzed by geometry, the science of space, they are only static geometric figures. How can Descartes account for the motion of physical things? What is the source of motion? The clear and distinct idea of spatial extension does not include the idea of motion. Whence motion? From God Himself, says Descartes. God causes motion to exist in the world. He is the first cause of motion in the physical universe and he provided a fixed and constant amount of motion or energy. But after creating the world and setting it in motion according to the laws of geometry and mechanics, God does not interfere with the mechanical clockwork of the universe.

God's noninvolvement with the world in the philosophy of Descartes was very upsetting to the French mathematician and philosopher Pascal, born a generation later than Descartes, and a devout and profoundly religious Catholic. Pascal writes:

I cannot forgive Descartes. He would have liked, in the whole of his philosophy, to be able to bypass God. But he could not help making Him give a shove to set the world in motion, after that he has nothing further to do with God.

## Mechanism: The Clockwork Universe

Descartes's theory of the physical universe is called *mechanism*. Mechanism is the theory that all of nature can be explained by the mechanical motion of material substances. In Descartes's mechanistic view of the world, the world is infinite in extension, with bodies of all shapes and sizes continually moving and changing. All motion of bodies is due to mechanical impact, like the mechanical workings in a clock. The infinite universe is through and through mechanical, from the vast celestial clockwork of the motion of the planets, which Galileo described, to all inorganic physical things—these too move mechanically on impact. This is what the

physical universe is for Descartes: a mechanical clockwork system of bodies in motion according to the laws of physics. The physical world consists of bodies of various geometrical sizes and shapes, colorless, soundless, without smell, taste, or texture. They move on impact with one another in purposeless, mechanical motion in a clockwork universe.

**Descartes's Theory of Animals as Mechanical Clockworks.** For Descartes all living bodies, all living organisms are also mechanical clockworks, extended in space, moving on impact with other bodies. Descartes is famous for his view that animals are automata, mechanically responsive to the stimulus of other bodies. Descartes would at the present time be called a behaviorist with regard to animals. He denied that animals have reason, intelligence, mind, or any inner mental states. Such feelings as they have arise only from the mechanical motions of their bodies. Descartes reduced animals to being nothing but matter in motion. Descartes claimed that if machines were constructed to look like animals, we could not tell them apart.

The fact that animals cannot use language to express themselves, says Descartes, "does not show merely that the brutes have less reason than men, but that they have none at all, since it is clear that very little is required in order to be able to talk." And although it is true that animals are sometimes very skillful (as for example, beavers are skillful in building dams) this "shows rather that they have no reason at all, it is nature which acts in them according to the disposition of their organs, just as a clock, which is only composed of wheels and weights, is able to tell the hours and measure the time more correctly than we can do with all our wisdom."

In opposition to Descartes's theory of animals stands the Darwinian theory of evolution, showing the evolution from a common origin of all living species. Whereas Descartes sees rationality as completely separating humans from animals by an unbridgeable gulf, Darwinian theory shows no sharp divisions or separations, but a continuous gradation of capacities and functions, from the lowest living organisms to those of the human species. The medieval scholastic philosophers and Catholic theologians had also argued that there is a continuity of all living species and that animals do indeed have souls, but of a lesser nature than the souls of humans. But for Descartes whatever is not rational, thinking substance is nothing but a mechanism, nothing but matter in motion.

Recent scientific experiments have focused upon the intelligence of various animal species, and have shown that one of Descartes's automata, the porpoise, is a creature of high intelligence, capable of communicating with humans. There is also a profound opposition to Descartes's view of animals from many people who love and honor animals for their moral qualities of innocence and lack of hypocrisy, while condemning humans for their hypocrisy and lack of innocence.

As for human beings, Descartes believes that we are thinking things, rational, moral, and spiritual beings; as such, we are not extended in space and cannot be a mere clockwork as animals are for him. But human bodies are extended in space and they are a clockwork as mechanical as the bodies of animals. Any human activity that does not depend upon thinking is to Descartes as mechanical as animal behavior: the beating of the heart, digestion, respiration, circulation of the blood. And Descartes seems to be looking ahead to our present world of automation and thinking machines in his account of the mechanical aspect of the human body: "This will not seem strange to those who know how many different automata or moving machines can be made by the industry of man." Is Descartes looking into a future of mechanical men whom we will not be able to tell apart from human beings—as he says we could not tell apart mechanical animals from real ones? Under the influence of Descartes, the view that the bodies of both animals and humans are only mechanical clockworks explained by the science of physics gathered momentum. There appeared during the first half of the twentieth century the Unity of Science movement, with the claim that explanation of all phenomena can be provided by the science of mathematical physics alone—an explanation of everything inorganic, organic, and human. But was this not the vision which came to Descartes on the night of November 10, 1619—the vision of a marvelous mathematical unification of all the sciences?

### Descartes's Theory of Physical and Mental Substances

But Descartes's philosophy contains more than a mechanical clockwork physical universe of substances moving according to the laws of physics and the principles of geometry.



There is also a perfect being, God, who provided the original motion for the clockwork. And there are also finite, imperfect selves like us, finite thinking beings. Reality includes (self, God, and matter). All are substances (since everything is either a substance or an attribute). But what is a substance? He defines it as a thing which so exists that it needs no other thing in order to exist. Only God can be substance in this strict sense. All other substances require God to exist. Both physical and thinking substances are created by God. They represent completely different kinds of substances.)

**Thinking Substance.** Mind, *thinking substance*, occupies no space; is not in motion; is not part of any clockwork; has the capacity for reasoning, remembering, denying; has free will and is morally responsible for its action.

**Physical Substance.** Matter by contrast is spatially extended; is in mechanical motion; is infinitely divisible; is totally determined by the impact of other bodies; without the capacity for reasoning; without free will or any moral qualities. Each kind of substance is independent of the other. For each kind of substance there is a distinct and appropriate discipline which studies it. Matter is studied by physics, the new science of Copernicus and Galileo. Mind is studied by Church theology and by philosophy.

Has Descartes cut the pie of reality in half, giving the mental half to the Church and the physical half to science as a strategy on behalf of science, to pacify the Church and allay its suspicions that the new science is going to undermine all the teachings of the Church? Or is Descartes's claim that there are two kinds of reality, physical and mental, a true description of what reality is? Or was the strategy also a truth?

## 10

# BODY AND SOUL

It was the influential twentieth-century French philosopher Alain who made the best known of all the comments on the famous Frans Hals portrait of Descartes: "This is a terrible man to have as your teacher. He looks at you as if to say: Here is another one who will never get things straight, who is always going to be off the track."

## Metaphysical Dualism

We have seen Descartes's hard, cold mathematical reasoning combined with his passionate personal quest for certainty arrive at a chain of rational, absolutely certain proofs. Step by step he established first that I exist, then that God exists, next that all of my clear and distinct ideas are true since God guarantees them, then that the physical world exists, and finally, that the reality of the physical and human worlds correspond to my clear and distinct ideas of them. Thus my rational, clear, and distinct ideas are the key to all of reality. And mathematics is the key to reason. Cartesian rationalism is as bold a claim for human reason as has ever been made. It is the claim that the structure of the world corresponds to the structure of our rational ideas.

But let us look at this reality, at this world which Descartes constructed and which he claims to be a true picture of the world in which we live. The most striking feature of the Cartesian metaphysics, of reality as Descartes's philosophy describes it, is that it erects a split, a division, a duality, a dichotomy, between two different kinds of reality: between mental, spiritual, thinking substance (such as myself and God)

and physical, spatial, extended substance (such as my body, the planets, mountains, trees, and dogs). These two kinds of substances constitute two different and separate worlds. They represent two different and separate realities between which there is a gap which can never be closed. Descartes has presented the classic case of *metaphysical dualism*, of a dualism within reality. *Dualism* is the name for any theory which claims that there are two ultimate and irreducible components in the subject to be explained. *Metaphysical dualism* is the term applied to a metaphysical theory which claims that there are two ultimate and irreducible kinds of reality. Cartesian metaphysical dualism is called psychophysical dualism to indicate that the duality consists on the one hand of the mental, psychological, conscious kind of reality and, on the other hand, of the physical, material, spatial, extended kind of reality.

*Cartesian psychophysical dualism* may be defined as the doctrine that reality consists of two kinds of substances, mental and physical, and that the one kind of substance can never be shown to be a form of, or be reduced to, the other. So for psychophysical dualism, mind can never be shown to be derived from, or a form of, or a function of, or reducible to, matter. Cartesian psychophysical dualism formulates its doctrine in terms of substances, since Descartes, as we have seen, accepts as a clear and distinct idea that attributes such as mental or physical cannot exist except as belonging to substances. You remember that he used this clear and distinct idea to show that my being conscious of the attribute of thinking proved that I exist as a substance in which thinking is going on. Also, you remember, this is how he showed that my clear and distinct idea of the attribute of extension proved that substances with the attribute of extension exist as the cause of my ideas. Now we can understand why Cartesian psychophysical dualism is regarded as the sharpest and clearest formulation of metaphysical dualism. It is because Descartes has made one attribute, one property or quality, the principal attribute of each kind of substance. He established the principal property of each kind of substance by this question: What is my clear and distinct idea of this thing, what is my clear and distinct idea of its essential, necessary quality or attribute?

For mental, spiritual substance the principal attribute is thinking; it is therefore a thinking kind of substance, substance which is conscious (which means, for Descartes, it

thinks, doubts, understands, affirms, denies, wills, refuses, imagines, and feels). But this attribute of thinking is the very attribute which is distinctly lacking in the piece of wax, in spatially extended bodies, and in the motion of bodies from one space or place to another. It is lacking in earthly clockwork mechanisms and in the celestial clockwork of the planets, in the clockwork bodies of animals and humans—there is no consciousness in any of these.

Physical substance is defined, on the other hand, by its principal attribute of being extended in space. It is measurable by geometry, which is the science of spatial measurement. Its motion is mechanical, the result of impact, as the cogs in a machine impact upon the cogs in other wheels, or as one billiard ball impacts upon another. But being physically extended is the very attribute or property which is lacking to mental substances. Minds, thinking things, consciousness are not extended in space, they are not measurable, they are not in motion, they do not move on impact, they do not function like clockworks. Was it by mechanical clockwork that Descartes resolved for once in his life to doubt everything, to overthrow all his beliefs, to attempt to use methodological skepticism in order to reach an absolutely certain belief? That was no clockwork, that was nothing mechanical—that was the masterful triumph of a free spirit, a thinking thing, a mental substance.

Thinking substance, mental, spiritual reality, by definition lacks any spatial extension, occupies no space, is not measurable or quantifiable, is not in motion. (Where, for example, is thinking? In my head?) Physical substance, spatially extended, mathematically measurable, lacks any mental, spiritual, or conscious attribute. Physical things have no consciousness and cannot think. And so we are confronted by the dual, two-fold substances and their attributes of Descartes's world: on the one hand, spatially extended mechanical substances which have no consciousness, no mind; on the other hand, mental, conscious, spiritual, thinking substances which have no body, no spatial extension. Descartes's psychophysical dualism is well expressed by an old English couplet:

What is mind? No matter.

What is matter? Never mind.

There is no way in which the absolute differences between these two kinds of reality can ever be bridged, abolished, or



overcome. For this reason Cartesian dualism is the most extreme example of psychophysical dualism in the history of philosophy.

### The Problem of Free Will and Determinism

But we may see how extreme Cartesian psychophysical dualism is by looking at it in terms of another problem, a problem which has tormented philosophy ever since Saint Augustine: the problem of free will and determinism. Since, as Descartes says, nothing comes from nothing, and everything that exists has a cause, determinism developed historically as the view that everything that exists is the necessary and inevitable result of its antecedent causes and could not be otherwise than it is. Modern determinism from the time of Descartes is dictated by scientific, causal laws, and is the view that everything happens necessarily in accordance with some one or more scientific causal laws. Determinism characterizes the Newtonian universe of spatially extended substances in motion: Physical bodies move as the necessary result of pressure or impact on them of other bodies. This is the way the planets move, their motion being determined by the necessary, mechanical laws of astronomy; this is the way the machinery of a clockwork moves, by the necessary causal impact of one cogged wheel upon another, with the movement of the second wheel being the necessary and inevitable effect of the first wheel.

In total opposition to the necessary, dependent, bound, inevitable, and mechanical determinism of the physical universe, which Descartes, Copernicus, and Galileo had described, there stands the free will of spiritual, thinking, mental substance. The doctrine of free will is the denial that determinism applies to the actions of human beings. Free will is the doctrine that claims that human actions, unlike the mechanical motion of the planets or of clockwork machinery, are not determined by antecedent causes. Human beings as conscious, thinking substances are free in their actions and moral choices, not causally determined. So if I pass through a picket line; if I make a contribution to a church or to a political party; if I am insulting to another human being; if I am physically cruel to an animal; if I am a criminal or a saint—the doctrine of free will claims that these acts are done out of my own free will, that I am a free agent in doing them,

and in all my other deliberate actions as well. Therefore, since my will is free, since antecedent causes do not necessitate my actions, I am responsible for my actions. But the doctrine of determinism claims that I am not responsible, that my actions are the inevitable and necessary result of a host of antecedent causes. This issue, between free will and determinism, is especially controversial today in the field of criminal psychiatry, in which the question arises, is the criminal's act the necessary result of antecedent causes, so that he could not help doing what he did—or was he free to do otherwise and therefore responsible? These questions have important consequences for treatment of criminals. Did his biological heritage determine his action, or an unloving family, or the capitalistic system? Is society to be blamed for this act or is the criminal responsible for his own action? For Descartes it is of course the case that human beings, as thinking, conscious, mental, spiritual, moral substances, are free in their thinking, affirming, denying, and willing. As he specifically says, the freedom of the human will is infinite, unlimited. Human beings have infinite freedom in the power to make moral decisions and are accordingly responsible for them. Thus Descartes's dualism of thinking and spatially extended substances establishes the opposition between thinking substances as having free will and physical substances as being subject to causal determinism.

### The Mind-Body Problem

But the full impact of Cartesian dualism is yet to be mentioned: It is the impact of Cartesian dualism upon me, the individual human being. It is not only the world which consists of two irreducible, divergent, distinct, opposing substances and their attributes, but it is the individual human being, who now may be seen to be split in two by Cartesian psychophysical dualism: Am I not a thinking thing, a mind, a consciousness with free will? But am I not also a body, spatially extended, measurable, quantifiable, an organic mechanism, a clockwork which is causally determined?

But now I see that according to Descartes my mind and body are utterly, absolutely distinct. As in the universe itself, with its two kinds of substances, mental and physical, there is in me the same absolute, unbridgeable gulf between mind which occupies no space and body which cannot think. There is in

me the same lack of unity, the same division and duality. I myself consist of two separate substances. Moreover, the two substances which make up the human being are not of equal significance, for did not Descartes show that I am a thinking thing, that I am a substance whose nature it is to think, and that my principal attribute is thinking?

I am, then, a mental substance, a thinking thing. What, then, is the relation of my body as extended substance to myself as thinking thing? Descartes himself tries to tell us in Meditation VI: "Since on the one hand I have a clear and distinct idea of myself insofar as I am only a thinking thing and not an extended being, and since on the other hand I have a distinct idea of body insofar as it is only an extended substance which does not think, it is certain that this I (that is to say, my soul, by virtue of which I am what I am) is entirely and truly distinct from my body and that it can exist without it." My mind, according to Descartes, is not only entirely different in its attributes from my body, but it is totally independent of my body, and may exist without it; and as Descartes has shown I know my own mind better than I know any physical thing, including my own body.

Then how shall I understand my relationship as a thinking thing to my own body? My body does not belong to my nature. Perhaps it is the case that the soul uses the body to house itself? Or is it that the soul not only uses the body as its habitat but also directs some of the movements of the body, and so is like a pilot on a ship, directing it, as Descartes himself suggests. Descartes's sharp correspondent Antoine Arnaud, a young theologian who was the first to point to the Cartesian Circle, pounced upon this problem immediately. He wrote to him that since Descartes has clearly and distinctly perceived himself to be a thinking thing, this leads to the conclusion that man is "entirely spirit, while his body is merely the vehicle of spirit; whence follows the definition of man as a spirit which makes use of a body." In the twentieth century the British philosopher Gilbert Ryle similarly attacked Descartes's mind-body dualism for representing mind as a "ghost" in a machine.

Descartes has led us into this extreme dualism of mind and body, of an immaterial soul and a material body, according to which they are so completely different that there can be no interaction between my own mind and body. But this runs counter to the evidence of everyday life, in which my mind

and body are constantly interacting. My body influences my mind when my body has to cope with a huge Thanksgiving dinner, or with a large intake of beer or hard liquor, or even a small amount of a narcotic. My mind in all of these cases will soon register that it has been affected; it becomes dull, my ideas are no longer clear and distinct, the distinction between dream and reality begins to blur. But how is this possible on the basis of Descartes's dualism? And, conversely, the evidence of everyday life shows that my mind influences my body, that the causal relation can also be from the mind to the body. For example, I decide to salute the flag or to wave good-bye or to shake hands or to whistle for my dog or to run for a bus—and I salute, I wave, I shake hands, I whistle, I run. But according to Descartes's dualism, these could not happen. These actions which my mind has caused in my body are impossible, for how could my mind, which occupies no space, and is not physical, make my body move? Motion is an attribute only of physical things and can be caused only by billiard-ball or clockwork impact upon other physical things.

Why has Descartes led us into this impasse in which his extreme dualistic separation of mind and body denies what anyone can plainly see, that mind and body do interact, that they are not such different kinds of reality that mind cannot produce at will a handshake and that body cannot produce a feeling of pleasant dullness in the mind. The answer to why Descartes has led us down this blind alley is that he was seeking, as we know, a compromise between the powerful new science, with its mechanical, deterministic laws of motion of physical bodies in space, and the powerful old Church, with its dogmas of a perfect, infinite spiritual being who created man, a finite and imperfect spiritual being, and who also created an earthly habitat for him. For the Church, truth about reality came from divine revelation, not from science. It seemed to Descartes that his dualism provided a compromise to ease the bitter enmity between the new science and the Church. He believed he achieved this compromise by the dualism of completely distinct substances. This dualism provides that physical substance, its motion according to causal laws, its determinism, its predictability, would be the exclusive province which science controls. And immune from science, from the laws of physics, and from determinism is



mental substance. Mental substance is not spatially extended, not causally determined, not quantifiable, not predictable—but conscious, thinking, remembering, and feeling; able to know the true ideas which are innate and divinely imprinted within it; capable of spontaneity; with free will; responsible and moral. This kind of substance would be under the exclusive jurisdiction of the Church, with no interference from science. Thus the Cartesian theory of dual distinct substances appeared to Descartes to effect a compromise and reconciliation between the Church and the scientists: to each its own jurisdiction—to the scientists, matter and its mechanical laws of motion; to the theologians, mental substance, the souls of human beings. This has been called the Cartesian compromise.

But Descartes himself was unhappy with his psychophysical dualism. He was perfectly well aware of the interaction between mind and body and he tried to show that interaction *was* possible on his strictly dualistic theory. He argued, in what is the weakest contribution of his entire philosophy, that interaction between the soul and the body is possible because the soul is primarily located in the pineal gland in the brain, and there it performs its mental functions and also receives sensations from the body. The pineal gland is therefore the transfer point between soul and body. Through it the soul can move the muscles and nerves of the body, and the motions of the body can in turn influence the mind. Unfortunately, there is no evidence that the pineal gland has such functions. Moreover the pineal gland theory cannot explain how an unextended immaterial soul can have an effect on a part of the brain, or how the physical pineal gland can have any effect upon the immaterial soul.

A last point on Descartes's psychophysical dualism may be mentioned. Descartes's attempt to show that there was indeed the possibility of interaction between soul and body, mind and matter, had destructive consequences for the Cartesian dualism and the compromise upon which he had placed so much emphasis. For if the immaterial, spiritual soul *can* bring about through the pineal gland changes in its body, and by means of the body changes on other bodies, this would destroy the new science and its mechanical motion, by introducing a spiritual element into causality. I myself as a thinking thing become then an alien cause in a mechanistic causal world. On the other hand if through the pineal gland my

body can bring about changes in my mind, then my mind is affected by the laws of motion of the body and becomes part of the mechanical clockwork of the body. So interaction would destroy the mechanistic laws of science and the independence of the mind as immaterial substance. Thus the Cartesian compromise failed for two reasons. First, insofar as Descartes presents mind and body as distinct substances (mind under the Church jurisdiction, matter under scientific jurisdiction), their complete distinction runs counter to the facts of interaction between mind and body. Second, Descartes attempts to show interaction between mind and body rather than their being separate and distinct. This also fails because the pineal gland does not explain interaction. More important, interaction would destroy either the mechanism of science or the independence and freedom of the mind.

Although the Cartesian compromise failed, the influence of Descartes remains alive and a potent force; for over three hundred years, since the *Meditations* appeared in 1641, Cartesianism has dominated the intellectual world. To be a philosopher at all you must deal with him. You can agree, or disagree, or find another path—but you must deal with Descartes's skepticism, his rationalism, his mathematical model of truth, his Cogito proof, his subjectivism, his metaphysical dualism of mental and physical substances, and his treatment of the mind-body problem. The mind-body problem has perhaps been the area of Descartes's greatest influence. The difficulties of his dualism of mental and physical substance led to solutions in the form of theories of psychophysical parallelism, psychophysical interactionism, behaviorism, and phenomenology. Descartes's incisive formulation of psychophysical dualism is the point of reference for the perennial discussion by modern philosophers of how to understand the relation between nonmaterial consciousness and the material processes of the brain.

Writing one hundred years later, the Scottish philosopher David Hume dealt with Descartes by violently opposing him. Hume opposed Descartes's rationalism with a more powerful empiricism. He opposed Descartes's skepticism with a more powerful skepticism. He rejected the Cogito proof and Descartes's proofs of God as nonsense. He rejected Descartes's metaphysical dualism and its claim that there are two kinds of

substances by denying that we can ever have any proof that mental or physical substances exist. He opposed Descartes's causal mechanism by destroying Descartes's idea of cause and effect. We may say that Hume dealt with Descartes by destroying him. In turning to David Hume we are about to encounter the excitement of the most destructive force in the history of Western philosophy.

## SUGGESTIONS FOR FURTHER READING

### PART TWO: DESCARTES

#### Works of Descartes:

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