7 Descartes, *Discourse on method* I-II and V (AT VI 1-22 and 55-60)

But after I had spent some years thus studying in the book of the world and in trying to gain some experience, I resolved one day to study within myself. – Descartes, *Discourse on method* I

Early modern philosophy was profoundly influenced by developments in two other areas: natural science and religion. These two influences did not sit easily with one another.

The early modern period was a deeply religious era, and in France and Great Britain, the main centers of early modern philosophy, religion took one or the other of two forms: the external, ceremonial, and hierarchically governed religion of the Roman Catholics, dominant in France, and the internal, enthusiastic, and republican religion of the Reformed Church with its Puritan and Presbyterian offshoots, dominant in England and Scotland. (The Anglican Church occupied an uneasy position between these two extreme forms.) These two forms of religion had been at war since the time of the Protestant reformation. However, both forms of religion were committed to certain fundamental Christian doctrines: God's role as not merely designer, but creator of the very stuff the universe is made of, and the necessity of belief in the risen Christ for salvation and in Christ's status as the second person of the Trinity. (Major issues of dispute between the churches concerned the legitimacy of an Episcopalian hierarchy, the relative weight given to grace and works in determining who shall be saved, and the significance of the sacrament of the Eucharist, a Roman Catholic ceremony where the communion bread and wine are supposedly transformed into the body and blood of Christ).

Neither form of early modern religion sat well with the mechanistic tendencies of early modern science. The tension is nowhere as explicit as it is in the mechanistic philosophy of Hobbes. As has been seen, Hobbes maintained that human beings are simply machines, he denied the existence of immaterial spirits and of the freedom of the will, and he had a conception of the Divine nature that seemed pious only to the extent that it refrained from saying anything about the nature God, though it seemed to hint that God has to be a material being. As a result, Hobbes was widely denounced as an atheist and a libertine, who suggested God is a material thing, questioned the punishment of the wicked in an afterlife, and held that there is no need to observe moral rules when there is little chance of being caught and punished.

Hobbes was nonetheless able to live to a very old age without suffering persecution or more than temporary and limited censorship of his works. There are a couple of reasons for this. First, he was very careful not to go too far. Second, he lived most of his life in a Protestant country. The enthusiastic form of the Protestant religion, which emphasized an ecstatic personal union of the individual with God, pushed the Protestants in the direction of rejecting ecclesiastical and civil hierarchies, viewing each person's religion as their own affair, and consequently instituting a broad religious toleration (for all but Catholics, who were viewed as too dangerous to countenance) and a degree of freedom of the press. This worked in Hobbes' favour. However Hobbes was also concerned to insist on his Christianity, and was at pains to demonstrate that nothing in his work was actually in conflict with scripture. He may have implied that God is material, but he never said it; in fact he denied it, and that is what would have counted had he ever been summoned into court on charges of heresy or atheism. And while he did maintain that our souls are material and decay along with the body, this was not clearly



unorthodox. The Christian church had always stressed the resurrection of the body at the final judgment, so Hobbes could claim that it is not necessary to suppose the existence of an immortal, spiritual soul in order to believe in an afterlife. And, as already noted, he could point out that nothing in scripture entails that angels or devils have to be spiritual in nature.

Even Hobbes' determinism — his denial of the freedom of the will — was not clearly unorthodox in a Protestant country. Calvinist Protestantism was itself deterministic and the Calvinist Puritans and Presbyterians in England and Scotland were opposed to the notion that people might freely choose to obey God's commandments and so earn a place in heaven without the assistance of Divine Grace. They viewed this as a version of the Pelagian and Arminian heresies and accepted the opposed Augustinian doctrine that God has eternally predestined the majority to damnation, and that those who are saved will be saved because God freely gave them an undeserved gift of Grace.

While Hobbes was able to avoid persecution and serious censorship, he did not have an entirely easy time. His philosophy was widely perceived as opening the door to more radical free-thinkers, who would build on his work to deny the existence of God and an afterlife. At one point during his lifetime there was a move in Parliament to launch a formal inquiry into the orthodoxy of his views on religion (though ultimately nothing came of it), and shortly after his death two of his works, including *Leviathan*, were formally condemned and burned at Oxford.

Such difficulties with the religious and civil authorities as Hobbes encountered were slight compared to what mechanistic philosophers and scientists suffered in Catholic countries. Over the course of the middle ages, the philosophy of Aristotle had been neatly integrated with the fundamental tenets of medieval Christianity. Consequently, in Protestant countries like England, where the old religion was under attack, the old philosophy that supported it could be attacked with relative impunity. But in Catholic countries, where the unacceptability of religious reform spilled over into suspicion of all attempts at reform, particularly those aimed at doctrines that had come to be associated with Catholicism, an attempt to replace the Aristotelian tradition with new, mechanistic doctrines, could be dangerous. Even innovations that today strike us as remote from any real religious concern were violently suppressed. One of Bacon's Italian contemporaries, Giordano Bruno (inset upper left), was burned at the stake for maintaining that the universe is indeterminately large and that there are other suns among the fixed stars and other worlds about them. And Hobbes' Italian contemporary, Galileo, was summoned before the inquisition on account of his anti-Aristotelian view that the Earth rotates around the sun, shown the instruments of torture, forced to recant, and placed under house arrest for the remainder of his life.

Not surprisingly, many champions of the new philosophy were anxious to deny any intention of offering a "reform." At the outset of his *Discourse on method*, Hobbes' French contemporary, René Descartes, wrote: "I could in no way approve of those troublemaking and restless personalities who, called neither by their birth nor by their fortune to manage public affairs, are forever coming up with an idea for some new reform in this matter. And if I thought there were in this writing the slightest thing by means of which one might suspect me of such folly, I would be very sorry to permit its publication."

His protestations to the contrary notwithstanding, Descartes did mean to propose a reform in natural philosophy. But, though this is what he meant to do, he was reluctant to confess to the fact. It is not just that he was afraid, though he had good reason to be. As many of his comments in correspondence with his friends make clear, he also believed that flying in the face of people's prejudices is no way to make progress. It simply incites them to reject and suppress



your work, and you end up achieving nothing. It is much wiser, Descartes thought, to proceed in a more devious fashion: Try to convince the authorities that the principles you are advocating do not touch on established beliefs — or that if they do they serve to support them by setting them forth in the light of a new method of presentation. Then, once you have convinced them to accept your apparently innocent first principles, you can leave it to them to draw the conclusions that necessarily follow from these principles. Here, for example, is what Descartes wrote to Mersenne on the eve of the publication of his *Meditations on first philosophy*:

and I may tell you, between ourselves, that these six Meditations contain all the foundations of my physics. But please do not tell people, for that might make it harder for supporters of Aristotle to approve them. I hope that readers will gradually get used to my principles, and recognize their truth, before they notice that they destroy the principles of Aristotle. [Letter of 28 January, 1641, as translated in John Cottingham, Robert Stoothoff, Dugald Murdoch and Anthony Kenny, *Philosophical Writings of Descartes* vol. 3 (Cambridge: Cambridge University Press, 1991), 173; AT III: 298]

And here is what he had to say in a letter to one of his disciples, Regius (inset), who had gotten a bit too explicit in his presentation of Cartesian principles at the University of Utrecht:

Sir,

I have had here all afternoon a distinguished visitor, M. Alphonse, who discussed the Utrecht affair at length in a friendly and prudent manner. I agree with him entirely that you should refrain from public disputations for some time, and should be extremely careful not to annoy people by harsh words. I should like it best if you never put forward any new opinions, but retained all the old ones in name, and merely brought forward new arguments. This is a course of action to which nobody could take exception, and yet those who understood your arguments would spontaneously draw from them the conclusions you had in mind. For instance, why did you openly reject substantial forms and real qualities? Do you not remember that on p.164 of the French edition of my *Meteorology*, I said quite expressly that I did not at all reject or deny them, but simply found them unnecessary in setting out my explanations? If you had taken this course, everybody in your audience would have rejected them as soon as they saw they were useless, but you would not have become so unpopular with your colleagues. [Letter of January 1642, as translated in CSM 3: 205; AT III 491-92]

Descartes had only been impelled to write what he did because, he claimed, of a sceptical crisis. In the early years of the Protestant reformation, Catholics had attacked the Protestant rejection of an ecclesiastical hierarchy by resurrecting sceptical arguments that showed the inadequacy of all our knowing powers and the consequent inability of any individual to discern the Word of God simply from a personal engagement with scripture, unassisted by traditional and divinely sanctioned authority. However, the sceptical arguments were so powerful that they proved a double-edged sword, allowing Protestants to retort that the sceptical arguments applied as well to Bishops and Popes as people, and that no one unassisted by a direct infusion of Grace and born again in the Word could overcome the natural weakness of the human knowing powers. In the end, the only winners had been atheists and libertines, who wanted to cast all belief and all religion into doubt. Descartes presented himself as someone who had found a way to reply to the sceptics.

However, the challenge facing mechanical philosophers in Catholic countries was not just how to replace Aristotelianism without looking like reformers, but how to replace it with an alternative as apparently irreligious as the mechanical philosophy. The Churchmen in France,



Spain, and Italy did not need Hobbes to show them that mechanistic natural philosophy is materialistic, deterministic and atheistic in its implications. These had all been features of the ancestor of mechanistic natural philosophy, the ancient atomism of Epicurus and Lucretius.

Because the church in Catholic countries was still too powerful, and too authoritarian to be effectively resisted, those who wanted to advocate mechanistic natural philosophy had only one choice: to seek for some form of accommodation — to do for Epicurus and Lucretius what Thomas Aquinas had done for Aristotle: reinterpret their philosophy in such a way as to make it acceptable to Christians.

Descartes was the prime architect of this accommodation. The sub-title of the second edition of his most famous work, the *Meditations*, "in which the existence of God and the distinction of the human soul from the body is demonstrated," clearly indicates the direction Descartes wanted his project to take. He was out to write a



Title pages of the first and second Latin editions of Descartes <u>Meditations</u>. The subtitles changed between the two editions. Whereas in the first Descartes claimed to demonstrate the existence of God and the immortality of the soul, in the second he instead claimed to demonstrate the existence of God and the distinction of the soul from the body. The revised claim is the correct one.

philosophy that would establish the foundations for a mechanistic science of nature and his *Meditations* were directed to lay the groundwork for such a science by showing:

• that all that really exists in the physical world are extended particles in motion,



- that there are no real qualities of hardness, ductility, and the like inhering in bodies and distinguishing matter into different kinds or elements,
- that sensible qualities are merely feelings in us, and
- that the proper way to gain knowledge is not by a method of observation and experiment relying upon the senses but by the use of pure reasoning.

But you would not learn any of this from reading the title page of the *Meditations*. It is instead advertised as attempt to prove the existence of God and the distinction of the soul from the body.

In billing his work in this way, Descartes was not simply being devious. In the *Meditations* he offered repeated demonstrations of the existence of God, and while he never actually got so far as to prove the immortality of the soul, he did try to establish that human beings have spiritual souls, and are not just bodies. Christian believers of all types were confronting a sceptical crisis, due not so much to attacks by atheists but to their own mutually destructive employment of sceptical arguments against one another. New arguments to support the old beliefs were needed. Descartes doubtless hoped to profit by this situation and insinuate the mechanistic philosophy at the same time as he performed the service of setting religious belief beyond sceptical attack.

Neither should we think that Descartes's attempts to prove the existence of God and the distinction of the soul from the body were purely opportunistic. As he made clear in *Discourse* V, there are excellent reasons for taking human nature to be non-mechanical in its operations: the human reasoning power is, as he put it there, a "universal instrument," that is, it is versatile and able to figure out how to deal with novel difficulties. It can learn from its mistakes and it can discover universal principles from which it can calculate in advance how best to approach problems. A machine, in contrast, particularly a machine of the type Descartes and other early modern philosophers were familiar with (a mechanical device) can only do the particular task it was designed to do. Adapting it to perform multiple tasks requires introducing new design elements, a new element for each task, and the machine rapidly becomes too complex and unwieldy. Moreover, it is only through introducing new design elements ahead of time that the machine can be made to perform different tasks. It remains able to do only what it was previously designed to do and lacks the ability to figure out how to deal with novel situations.

The non-mechanical components of human reasoning are particularly evident in speech, where we seem to be confronted with an infinite number of tasks — answering questions, describing experiences, giving instructions, recalling events, and on and on. Descartes believed that it is simply impossible for any machine to be adequately designed to perform these tasks, so that the use of language serves as a powerful indication of the ability to respond spontaneously to unanticipated and novel circumstances, an ability that, Descartes supposed, cannot be explained mechanically. (It is no objection, therefore, that machines might be designed to make noises resembling human speech. Such machines would have to be designed to make certain noises in response to certain stimuli, and while they might momentarily trick us into thinking they are rational we would soon learn that they always respond in the same way to the same sort of stimulus, and that would show to us that they are not reasoning but merely responding.)

However, Descartes seems to have thought that the use of speech serves as more than just a particularly effective demonstration of our possession of a non-mechanical reasoning ability. He supposed that our use of speech shows, in addition, an ability to grasp the sense or meaning of what has been said to us, and provides us with a way to communicate the sense or meanings that we have grasped to others. We are able to "respond to the sense" of what is said, as he put it.



This is something that exceeds the power of any mechanical device. All that a mechanical device can do is move. If it is hit or its parts are hit, those parts can move in ways that, say, compress a bellows and cause a sound to be emitted, or turn the drum of a player-piano and cause a musical score to be played. But we do not think that in addition to performing these motions the machine does something else that we would call grasping the meaning or the significance of what has happened. If the bellows is compressed and the sound is emitted we do not think that this is because the machine has felt pain or understood that someone is saying something false and is wanting to object to the error. We simply think that it is moving in a certain way in response to stimuli. But we ourselves are aware of more than that. We do not just feel our sense organs, nerves, and brain moving in different ways. We feel pain or pleasure, see colours, and grasp the meaning of signs. When we use language we use it to communicate these thoughts, feelings, and intentions to others. And when we hear others using language, it is hard for us to think that it is merely a programmed response made by a machine. We rather think that it is indicative that they are experiencing sensations and thoughts and meanings in the way that we do, and that they are communicating these experiences to us.

Descartes accordingly supposed, not merely as a matter of policy, but as an inescapable conclusion from the evidence, that human nature and particularly the human reasoning and speaking abilities are intractable mechanically. Something else has to be responsible for these operations, and, if it is not a machine, then it might well be an immortal soul or spirit.

Descartes saw this as the key to reconciling religion and mechanistic natural philosophy. We could split the world into two parts: a realm of immaterial minds or souls, angels, and God, and a realm of extended particles in motion. Religion could describe the former world, where the rules of ethics and commands of God are the only laws, and natural philosophy could describe the natural world, where the laws of motion and collision are operative. The two worlds could peaceably coexist, each running in their own separate ways, but they would also meet within the human being, who is a unique and special union of the two distinct substances: extended, moving matter and thinking, sensing, willing mind, the mind receiving its sensations as a result of "observing" motions set up in the brain as a consequence of the body's being hit by flying particles, and the body in turn being moved not only by impacts from without, but by commands of the mind within.

Christian theology had an impact on the development of Descartes's philosophy at this point. If it is the soul that senses and feels and grasps the significance of signs, and, as a matter of Christian doctrine, only human beings have souls, then it follows that non-human animals must not really be sentient or intelligent, even at a rudimentary level. They must simply be machines. This seems counter-intuitive, but Descartes bit the bullet on the matter and maintained, with the Christians, that the ancient tradition ascribing souls of varying capacities to all living things, even plants, is mistaken. Descartes insisted that it is evident that animals have no speaking or reasoning ability whatsoever, but merely instincts implanted in them by nature (that is, by the way the machine of the animal body was designed). Thus, animal cries and even the speech of parrots are just noises that the animal body makes in response to set stimuli, and any abilities animals may have to solve problems better than we do are indicative of a lack, rather than a presence of reasoning ability. This is because reason is a universal instrument, which entails that the more you have of it, the better you ought to be able to perform at all tasks whatsoever. If animals only perform some tasks better than we do, but not all, that is an indication that they are not exceeding us because of superior reasoning ability, which would have



to imply a general superiority, were it to exist. They must rather be acting simply out of instinct, which is nothing more that a feature of the mechanical design of the animal body.

QUESTIONS ON THE READING

- 1. From what does the diversity of our opinions arise?
- 2. What are the sciences of mathematics and philosophy good for?
- 3. What was the chief cause of Descartes's delight with mathematics and his dismay with philosophy?
- 4. After abandoning the study of letters, what two sources did Descartes turn to in the search for knowledge?
- 5. What led him to subsequently reject one of these two sources as well?
- 6. What excuse did he offer for proposing an innovation in scientific method, despite the danger that it might be perceived as reformist?
- 7. What are the disciplines that Descartes thought most likely to be able to contribute to his plan?
- 8. In what way does geometry serve as a model for all the things that can fall within human knowledge?
- 9. Why was it so important to Descartes that he begin his investigations with absolutely certain and indubitable truths? (This is the first of his four rules of method).
- 10. Could we distinguish between machines that have been perfectly made to look and behave like animals and real animals?
- 11. What are the means by which we can distinguish between machines that look like human beings and real human beings?



NOTES ON THE READING

The first work Descartes published was a volume of essays, one on meteorology, one on geometry, and one on optics. The latter two essays were revolutionary. The essay on geometry laid the foundations for the mathematization of geometry, that is, for what is now called analytic geometry, by showing how geometrical figures could be described in algebraic formulae. (The scheme Descartes used for assigning numbers to figures — "Cartesian coordinates" — is still named after him.) The essay on optics mathematized light and vision. It contained the first statement of Snell's law of refraction, and it is notable for a geometrical theory of distance perception, according to which we see depth by calculating the angles at which the eyes converge on the object.

Descartes prefaced his three essays with a little essay on method, the *Discourse on method*. *Discourse* I opens with a joke about the



distribution of good sense, but the joke leads to a couple of serious points. We probably really are all endowed with an equal measure of good sense, understood as the ability to see the truth when it is shown to us, Descartes was suggesting. Therefore, there is no one who has the right to set themselves up as a superior authority to everyone else in this matter, and dictate what others should think. Moreover, if people do appear to be stupid, it is not because they are lacking in good sense, but because they are lacking in something else: method — the ability to apply their good sense in the right way.

Descartes claimed to have come up with the right method for gaining knowledge, and in the *Discourse* he described it.

By his own confession over the autobiographical remarks he made in *Discourse* I and II, Descartes had quickly become disgusted with the education he had received at University. He had, however, retained a degree of respect for three disciplines: logic, geometry, and algebra. While Descartes thought that there are problems with each of these disciplines considered individually (logic does not help us discover new things, geometry exhausts the imagination, algebra exhausts the intellect), he also thought that there must be something fundamentally correct about all of them, since they are so successful. What is more, if we keep in mind the point of the opening joke (that what makes one person, and by implication one science, smarter than another is not more good sense, but a better method), then this source of success in logic, geometry and algebra probably has something to do with their method.

Thinking about this, Descartes noticed that the same method is employed in all three sciences. Logic, geometry, and algebra are all deductive sciences. They proceed by deriving more difficult or complex propositions from certain initial definitions, axioms, and postulates assumed at the outset. Realizing this, Descartes proposed to make some "essays" (trials or attempts) at applying this method within the context of other disciplines — to the science of optics in the *Dioptrics* and the science of meteorology in the *Meteorology*. He also attempted to apply a refined version of the method to geometry itself in the essay on geometry. When he did so, he discovered to his delight that he was able to make significant discoveries. This was all the evidence he needed to convince himself that he had stumbled on the correct method for obtaining knowledge.

Descartes described his method as involving the application of the four rules laid out towards the end of *Discourse* II (AT VI 18-19). The rules recommend that we (i) start from clear and evident first principles, (ii) determine what we can know about the most simple things first and only then move to more complex things, (iii) arrive at our knowledge of the more complex things by deduction from what we know about the simples, using the axioms identified at step (i), and (iv) make frequent reviews of our work in order to correct any mistakes that might creep in.

These rules reflect the way work is carried out in the fields of logic, geometry, and algebra. In all of these fields, certain rules are assumed at the outset, and a certain universe of discourse or set of simple elements for those rules to work upon is formally specified. In Euclidean geometry, for instance, the rules are the rules for ruler and compass construction of geometrical diagrams, and the elements are points, lines, planes, solids. In sentence logic the rules are certain axiomatic sentences and the elements are the sentence letters and the connectives like "and," "or," and "not." Once the elements and the rules have been specified, we go on to perform constructions or give proofs and so generate more complex figures (in geometry) or sentences (in logic). When we do this we make frequent reviews of the constructions and proofs to ensure that



we have not made any mistakes in the application of the rules. The same can be said, of course, for demonstrations in algebra.

The main difference between Descartes's method and the method of geometry, logic, and algebra is that in geometry, logic and algebra the rules and the simple elements that they are applied to are sometimes simply arbitrarily stipulated or assumed to exist or to be true, and this is not something Descartes was willing to countenance. We cannot simply assume our first principles, even provisionally, but must know for certain that they are true. And the simple elements cannot be just any arbitrarily concocted things, but must be the simple elements we commonly encounter in our thinking.

For Descartes, it was particularly important that the first principles be certainly and evidently true, and not merely assumed. Were there any uncertainty in the first principles, everything we derive from them would be open to question, and that is not a result Descartes wanted to countenance. There had been too much arbitrary system building in the past, he observed, and all that it had produced was conflict, disputation, and uncertainty over which of many different, arbitrarily constructed systems is the correct one. The only way to make progress is to not even begin unless we have first assured ourselves that our fundamental principles are impeccable.

Interestingly, the rules of Descartes's method do not just reflect the way researchers proceed in logic, geometry, and algebra. They also reflect the way a mechanic proceeds on the shop floor. A clock maker sitting at a table in front of a pile of gears and springs and rods is looking at a collection of simple elements that, when carefully assembled in accord with certain rules, will build a more complex device. Descartes's method is designed so that, when applied to such fields as physics and cosmology, it will induce us to treat the parts of the natural world as so many simple components for a mechanical device. It has a built-in tendency to suggest a mechanical view of nature.

There are two, further, especially striking features of Descartes's method: the order of rules (i) and (ii), and the source to which we appeal for our information at step (ii). Note that when we follow the method, the first thing we are supposed to do is discover absolutely certain first principles (what presents itself so clearly and distinctly to the mind that there is no room to doubt it, as Descartes put it). It is only after we have done this that Descartes envisioned examining our ideas and breaking them down into their simplest component parts. This is quite a reversal from Hobbes' method, where we are first supposed to consult sensory experience in order to discover simple elements that we put together in definitions of terms, and only then relate terms to one another to formulate the first principles of a science. Indeed, it is more than just a reversal, because whereas Hobbes saw us obtaining our knowledge of simple natures from sensory experience, Descartes looked to a quite different source. This is not a point that is immediately evident from his statement of the four methodological rules, but it is quite clearly indicated by some remarks he made earlier on in the *Discourse*. In *Discourse* I, after recounting how he came to be disgusted with the learning he had received while at university, Descartes remarked that he had resolved "to search for no knowledge other than what could be found within myself, or else in the great book of the world." But towards the close of that section he confessed to feeling the same disgust with common sense and worldly knowledge that he had formerly felt for academic teachings. He had discovered, upon investigation, that "there was about as much diversity [in the customs of other people] as I had previously found in the opinions of the philosophers" so that "as long as I merely considered the customs of other men, I



found hardly anything there about which to be confident." This left only one alternative. Disgusted both with academic teachings and with common sense, he "resolved one day to study within myself." It is this source, meditation upon the ideas that he found within himself that Descartes meant to turn to at the second step of his method. He was looking for a kind of pure intellectual knowledge, divorced as much from everyday experience as from scholarly authority.

Descartes's proposed method is even more fundamentally opposed to Aristotle's and Bacon's methods than it is to Hobbes'. For Aristotle, experience does not simply supply us with the raw materials for definitions, but with the basis to go on to discover general rules by induction. And for Bacon, we must proceed purely inductively from experience and formulate grand theories and fundamental principles last of all. In contrast to these methods, which go up to generalities from sense experience, Descartes's method is "top-down." We formulate our fundamental principles first, and only then apply them to experience. Thus, in the hands of Descartes, the tension that has already been observed between the a prioristic tendencies of the mechanical philosophy and the inductivist and empiricist ideals of Baconian science turns into a divorce. Mechanical philosophy abandons experience and relies exclusively on reasoning from introspectively self-evident first principles.

This raises two questions: If we are not going to consult experience, where do we get our first principles and our ideas of simple natures? And how can we be sure that they are correct?

The job of the Meditations on first philosophy is to answer these questions.

ESSAY QUESTIONS AND RESEARCH PROJECTS

- 1. Assess the strength of Descartes's arguments for the existence of a soul distinct from the body, as those arguments are laid out in *Discourse* V.
- 2. Assess the strength of Descartes's reasons for denying that animals have souls.
- 3. Speculate on how Hobbes would reply to Descartes's reasons for claiming that rational souls "can in no way be derived from the potentiality of matter," drawing on his account of the causes of the use of signs and the basis for our reasoning as that account is laid out in *Human nature* IV-VI; *De corpore* I.1-5, VI.1-6,11-18; and *Leviathan* IV-V.
- 4. Consider which (if either) of the two, Hobbes or Descartes, had the best arguments for his position on human nature. Was Hobbes' attempt to come up with a mechanical account of the workings of the mind any more compelling than Descartes's reasons for claiming that there can be no such account?

