Discourse on the Method of Rightly Conducting one's Reason and Seeking Truth in the Sciences

René Descartes, 1637

Part 4

I had long been aware that in practical life one sometimes has to act on opinions that one knows to be quite uncertain just as if they were unquestionably true (I remarked on this above). But now that I wanted to devote myself solely to the search for truth, I thought I needed to do the exact opposite—to reject as if it were absolutely false everything regarding which I could imagine the least doubt, so as to see whether this left me with anything entirely indubitable to believe. Thus,

- I chose to suppose that nothing was such as our senses led us to imagine,

because our senses sometimes deceive us. Also,

- I rejected as unsound all the arguments I had previously taken as absolutely rigorous proofs,

because some men make mistakes in reasoning, even in the simplest questions in geometry, and commit logical fallacies; and I judged that I was as open to this as anyone else. Lastly,

- I decided to pretend that everything that had ever entered my mind was no more true than the illusions of my dreams,

because all the mental states we are in while awake can also occur while we sleep and dream, without having any truth in them. But no sooner had I embarked on this project than I noticed that while I was trying in this way to think everything to be false it *had* to be the case that I, who was thinking this, was something. And observing that this truth

I am thinking, therefore I exist

was so firm and sure that not even the most extravagant suppositions of the sceptics could shake it, I decided that I could accept it without scruple as the first principle of the philosophy I was seeking.

Then I looked carefully into *what* I was. I saw that while I could pretend that I had no body and that there was no world and no place for me to be in, I still couldn't pretend that I didn't exist. I saw on the contrary that from the mere fact that I thought about doubting the truth of other things, it followed quite evidently and certainly that I existed; whereas if I had merely stopped thinking altogether [here = 'stopped being in any conscious mental state'], even if everything else I had ever imagined had been true, I would have had no reason to believe that I existed. This taught me that I was a substance whose whole essence or nature is simply to be in conscious mental states, and which doesn't need any place, or depend on any material thing, in order to exist. Accordingly this me—this soul that makes me what I am—is entirely distinct from the body, is easier to know than the body, and would still be just what it is even if the body didn't exist. …

Part 5

… I had explained all these matters in enough detail in the treatise I had previously intended to publish. And then I had showed how the nerves and muscles of the human body must be structured if the animal spirits inside them are to convey enough force to move its limbs. . . .; what changes must occur in the brain as causes of waking, sleep and dreams; how light, sounds, smells, tastes, heat and the other qualities of external objects can imprint various ideas on the brain through the mediation of the senses; how hunger, thirst, and the other internal passions can also send their ideas there. And I explained which part of the brain must be identified with various supposed mental faculties—specifically, which part of the brain must be taken to be the 'common sense', where these ideas are received; the memory, which preserves them; and the imagination, which can change them in various ways, form them into new ideas, and, by distributing the animal spirits to the muscles, make the parts of this body move in as many different ways, and as appropriately to the objects of the senses and the internal passions, as the parts of our bodies can move without being guided by the will. You won't find that at all strange if you know how many kinds of automata or moving machines the skill of man can construct with the use of very few parts, in comparison with the great multitude of bones, muscles, nerves, arteries, veins and all the other parts that are in the body of any animal, and if this knowledge leads you to regard an animal body as a machine. Having been made by the hands of God, it is incomparably better organised—and capable of movements that are much more wonderful—than any that can be devised by man, but still it is just a machine.

I worked especially hard to show that if any such machines had the organs and outward shape of a monkey or of some other animal that doesn't have reason, we couldn't tell that they didn't possess entirely the same nature as these animals; whereas if any such machines bore a resemblance to our bodies and imitated as many of our actions as was practically possible, we would still have two very sure signs that they were nevertheless not real men.

(1) The first is that they could never use words or other constructed signs, as we do to declare our thoughts to others. We can easily conceive of a machine so constructed that it utters words, and even utters words that correspond to bodily actions that will cause a change in its organs (touch it in one spot and it asks 'What do you mean?', touch it in another and it cries out 'That hurts!', and so on); but not that such a machine should produce different sequences of words so as to give an appropriately meaningful answer to whatever is said in its presence—which is something that the dullest of men can do.

(2) Secondly, even though such machines might do some things as well as we do them, or perhaps even better, they would be bound to fail in others; and that would show us that they weren't acting through understanding but only from the disposition of their organs. For whereas reason is a universal instrument that can be used in all kinds of situations, these organs need some particular disposition for each particular action; hence it is practically impossible for a machine to have enough different organs to make it act in all the contingencies of life in the way our reason makes us act.

These two factors also tell us how men differ from beasts [= 'non-human animals']. For it's a remarkable fact no men (including even madmen) are so dull-witted or stupid that they can't arrange different words together so as to form an utterance that makes their thoughts understood; whereas no other animal, however perfect and well-endowed it may be, can do anything like that. It's not because they lack organs of speech; for we see that magpies and parrots can utter words as we do yet can't speak as we do—i.e. utter words while showing that they are thinking what they are saying. Whereas men who are born deaf and dumb, and thus at least as lacking in speech-organs as the beasts are, usually invent their own signs to make themselves understood by those whom they live with, who have the opportunity to learn their language. This doesn't show merely that the beasts have less reason than men; it shows that they don't have reason at all.

Here is why: Animals of a given species are unequal, as least to the extent that human beings are unequal; some of them, for instance, are much more easily trained than others. So we have the notion of beasts that are *abler than* or *superior to* their fellows. Now, obviously the ability to talk doesn't require much reason; so if any of the beasts had reason at all, we would expect the superior members of some species—high-grade monkeys or parrots, for example—to speak as well as the stupidest child, or at least as well as a child with a defective brain. But none of them do; which shows that their souls are completely different in nature from ours, and don't include any capacity to reason.

Don't confuse *speech* with the natural movements that are evidence of passions and *can* be imitated by machines as well as by animals. And don't think, as some of the ancients did, that the beasts speak a language that we don't understand! For if that were true, then since they have many organs that are analogous

to ours, they could make themselves understood by us as well as by their fellows. It is another remarkable fact that although many animals show more skill than we do in some of their actions, yet the same animals show no skill at all in plenty of others; so what they do better doesn't prove that they have minds, for if it did, they would have better minds than any of us and would out-perform us in everything. It shows rather that they don't have minds at all, and that it is nature that acts in them according to the disposition of their organs. Similarly, we with all our skill can't count the hours and measure time as accurately as a clock consisting only of wheels and springs!

I went on to describe the rational soul, and showed that, unlike the other things of which I had spoken, it can't be derived from the powers of matter, but must be specially created as a sheer addition to the human body. The soul has been thought to be lodged in the human body like a helmsman in his ship, and this comparison may hold some of the way, specifically in the soul's ability to move the body's limbs; but I showed that the comparison doesn't tell the whole story, and that the soul must be more closely united with the body than the helmsman is with his ship, because if it is to make up a real man it must have not only the power to move the body but also feelings and appetites like ours.

I went on at some length about the soul, because it is one of the most important topics. Second only to the error of those who deny God—which I think I have adequately refuted above—there is no error that leads weak minds further from the straight path of virtue than that of imagining that the souls of the beasts are of the same nature as ours, and hence that after this present life we have nothing to fear or to hope for, any more than flies and ants do. When we know how different the beasts are from us, we are

better placed to understand the arguments proving that our soul is of a nature entirely independent of the body, and thus not liable to die with it. And since we can't see any other causes that destroy the soul, we are naturally led to think that it is immortal.

The Passions of the Soul

René Descartes, 1649

31. There's a little gland in the brain where the soul does its work more particularly than elsewhere in the body

Although the soul is joined to the whole body, there's a certain part of the body where it exercises its functions more directly than in all the others. It's commonly thought that this part is the brain, because of its relation to the sense-organs, or the heart, because it feels to us as though that's where our passions are. But on looking into this very carefully I think I can clearly see that the part of the body in which the soul directly does its work is. . . .a certain very small gland deep inside the brain, in a position such that. . . .the slightest movements by it can greatly alter the course of the nearby spirits passing through the brain, and conversely any little change in the course of those spirits can greatly alter the movements of the gland.

32. How we know that this gland is the principal seat of the soul

What convinces me that this gland is the only place in the body where the soul can directly exercise its functions is my conviction that all the other parts of our brain are double, as are all the organs of our external senses—eyes, hands, ears and so on. The fact that sense-organs come in pairs is central to my argument. We often have one simple thought about one object at one time; so there must be some place where two sense-impressions coming through a matched pair of sense-organs can be brought together in a single impression before reaching the soul, so that they don't present it with two objects instead of one. It makes sense to think of these impressions as being unified in this gland by means of the spirits that brush by it going into the brain. There's nowhere else in the body where they could exist in the unified form except as a result of the unifying activities of this gland.

34. How the soul interacts with the body Let us take it, then, that the soul's principal seat is in the small gland located in the middle of the brain. From there it radiates out through the rest of the body by means of the animal spirits, the nerves, and even the blood, which can take on the impressions of the spirits and carry them through the arteries to all parts of the body. Remember what I said about our body's machine:

> The nerve-fibres are distributed through the body in such a way that when the objects of the senses stir up various movements in different parts of the body, the fibres open the brain's pores in various ways; which brings it about that the animal spirits contained in those cavities enter the muscles in various ways. That is how the spirits can move the parts of the body in all the different ways they can be moved. . . .

To this we can now add:

> The little gland that is the principal seat of the soul is suspended within the cavities containing these spirits, so that it can be moved by them in as many different ways as there are perceptible differences in the objects. But it can also be moved in various different ways by the soul, whose nature is such that it receives as many different impressions—i.e. has as many different perceptions—as there occur different movements in this gland. And, the other way around, the body's machine is so constructed that just by this gland's being moved in any way by the soul or by any other cause, it drives the surrounding spirits towards the pores of the brain, which direct them through the nerves to the muscles—which is how the gland makes them move the limbs.