

The Philosophical Writings of
DESCARTES

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VOLUME I

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are simply bodily movements; further, it is more common for a body to be moved by another body than for it to be moved by a soul. Hence, we have less reason to attribute such functions to the soul than to the body.

We can also observe that when some part of our body is harmed, for example when a nerve is irritated, the result is that the part in question ceases to obey our will as it normally does, and sometimes is subject to convulsive movements despite our wishes. This shows that the soul cannot produce any movement in the body without the appropriate disposition of the bodily organs which are required for making the movement. On the contrary, when all the bodily organs are appropriately disposed for some movement, the body has no need of the soul in order to produce that movement; and, as a result, all the movements which we in no way experience as depending on our thought must be attributed not to the soul, but simply to the disposition of the organs. Even the movements which we call 'voluntary' occur principally as a result of this disposition of the organs, since, although it is the soul that determines the movements, they cannot be produced without the requisite disposition of the organs, no matter how much we may will this to happen.

Furthermore, although all these movements cease in a corpse, once the soul has quit the body, we must not infer that it is the soul which produces them; the only inference we may make is that it is one and the same cause which both makes the body unfitted to produce these movements and makes the soul leave the body.

It is true that we may find it hard to believe that the mere disposition of the bodily organs is sufficient to produce in us all the movements which are in no way determined by our thought. So I will now try to prove the point, and to give such a full account of the entire bodily machine that we will have no more reason to think that it is our soul which produces in it the movements which we know by experience are not controlled by our will than we have reason to think that there is a soul in a clock which makes it tell the time.

Everyone already has some knowledge of the different parts of the human body. That is to say, we all know that it is composed of a very large number of bones, muscles, nerves, veins and arteries, together with a heart, a brain, a liver, lungs and a stomach. Indeed, we have all at some time or other seen various animals cut open, and been able to look at the shape and arrangement of their insides, which very much resemble our own. This is all the anatomy that the reader will need to have studied in order to understand this book; for I will take care to explain any further details that need to be known as and when I have occasion to speak of them.

First of all, I want the reader to have a general notion of the entire

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DESCRIPTION OF THE HUMAN BODY
AND OF ALL ITS FUNCTIONS
both those which do not in any way depend on the soul, and those which do, and including the chief cause of the formation of the parts of the body

Part One

PREFACE

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There is no more fruitful exercise than attempting to know ourselves. The benefits we may expect from such knowledge not only relate to ethics, as many would initially suppose, but also have a special importance for medicine. I believe that we would have been able to find many very reliable rules, both for curing illness and for preventing it, and even for slowing down the ageing process, if only we had spent enough effort on getting to know the nature of our body, instead of attributing to the soul functions which depend solely on the body and on the disposition of its organs.

Since childhood, however, we have all found by experience that many bodily movements occur in obedience to the will, which is one of the faculties of the soul, and this has led us to believe that the soul is the principle responsible for all bodily movement. Our ignorance of anatomy and mechanics has also played a major role here. For in restricting our consideration to the outside of the human body, we have never imagined that it has within it enough organs or mechanisms to move of its own accord in all the different ways which we observe. Our error was reinforced by our belief that no movement occurs inside a corpse, though it possesses the same organs as a living body, and lacks only a soul.

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But when we try to get to know our nature more distinctly we can see that our soul, in so far as it is a substance which is distinct from the body, is known to us merely through the fact that it thinks, that is to say, understands, wills, imagines, remembers and has sensory perceptions; for all these functions are kinds of thought. The other functions which some people attribute to the soul, such as moving the heart and the arteries, digesting food in the stomach and so on, do not involve any thought, and

I explained all these matters in sufficient detail in the treatise I previously intended to publish.¹ And then I showed what structure the nerves and muscles of the human body must have in order to make the animal spirits inside them strong enough to move its limbs – as when we see severed heads continue to move about and bite the earth although they are no longer alive. I also indicated what changes must occur in the brain in order to cause 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; and how hunger, thirst, and the other internal passions can also send their ideas there. And I explained which part of the brain must be taken to be the ‘common’ sense,² where these ideas are received; the memory, which preserves them; and the corporeal 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 as the parts of our bodies can move without being guided by the will, and in a manner which is just as appropriate to the objects of the senses and the internal passions. This will not seem at all strange to those who know how many kinds of automaton, 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. For they will regard this body as a machine which, having been made by the hands of God, is incomparably better ordered than any machine that can be devised by man, and contains in itself movements more wonderful than those in any such machine.

I made special efforts to show that if any such machines had the organs and outward shape of a monkey or of some other animal that lacks reason, we should have no means of knowing that they did not possess entirely the same nature as these animals; whereas if any such machines bore a resemblance to our bodies and imitated our actions as closely as possible for all practical purposes, we should still have two very certain

¹ See footnote p. 132, above.

² Cf. *Rules*, above p. 41, and *Treatise on Man*, above pp. 104ff.

means of recognizing that they were not real men. The first is that they could never use words, or put together other signs, as we do in order to declare our thoughts to others. For we can certainly conceive of a machine so constructed that it utters words, and even utters words which correspond to bodily actions causing a change in its organs (e.g. if you touch it in one spot it asks what you want of it, if you touch it in another it cries out that you are hurting it, and so on). But it is not conceivable that such a machine should produce different arrangements of words so as to give an appropriately meaningful answer to whatever is said in its presence, as the dullest of men can do. Secondly, even though such machines might do some things as well as we do them, or perhaps even better, they would inevitably fail in others, which would reveal that they were acting not through understanding but only from the disposition of their organs. For whereas reason is a universal instrument which can be used in all kinds of situations, these organs need some particular disposition for each particular action; hence it is for all practical purposes impossible for a machine to have enough different organs to make it act in all the contingencies of life in the way in which our reason makes us act.

Now in just these two ways we can also know the difference between man and beast. For it is quite remarkable that there are no men so dull-witted or stupid – and this includes even madmen – that they are incapable of arranging various words together and forming an utterance from them in order to make their thoughts understood; whereas there is no other animal, however perfect and well-endowed it may be, that can do the like. This does not happen because they lack the necessary organs, for we see that magpies and parrots can utter words as we do, and yet they cannot speak as we do: that is, they cannot show that they are thinking what they are saying. On the other hand, men born deaf and dumb, and thus deprived of speech-organs as much as the beasts or even more so, normally invent their own signs to make themselves understood by those who, being regularly in their company, have the time to learn their language. This shows not merely that the beasts have less reason than men, but that they have no reason at all. For it patently requires very little reason to be able to speak; and since as much inequality can be observed among the animals of a given species as among human beings, and some animals are more easily trained than others, it would be incredible that a superior specimen of the monkey or parrot species should not be able to speak as well as the stupidest child – or at least as well as a child with a defective brain – if their souls were not completely different in nature from ours. And we must not confuse speech with the natural movements which express passions and which can be imitated by

machines as well as by animals. Nor should we think, like some of the ancients, that the beasts speak, although we do not understand their language. For if that were true, then since they have many organs that correspond to ours, they could make themselves understood by us as well as by their fellows. It is also a very remarkable fact that although many animals show more skill than we do in some of their actions, yet the same animals show none at all in many others; so what they do better does not prove that they have any intelligence, for if it did then they would have more intelligence than any of us and would excel us in everything. It proves rather that they have no intelligence at all, and that it is nature which acts in them according to the disposition of their organs. In the same way a clock, consisting only of wheels and springs, can count the hours and measure time more accurately than we can with all our wisdom.

After that, I described the rational soul, and showed that, unlike the other things of which I had spoken, it cannot be derived in any way from the potentiality of matter, but must be specially created.¹ And I showed how it is not sufficient for it to be lodged in the human body like a helmsman in his ship, except perhaps to move its limbs, but that it must be more closely joined and united with the body in order to have, besides this power of movement, feelings and appetites like ours and so constitute a real man. Here I dwelt a little upon the subject of the soul, because it is of the greatest importance. For after the error of those who deny God, which I believe I have already adequately refuted, there is none 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. But when we know how much the beasts differ from us, we understand much better the arguments which prove that our soul is of a nature entirely independent of the body, and consequently that it is not bound to die with it. And since we cannot see any other causes which destroy the soul, we are naturally led to conclude that it is immortal.

the very opposite and reject as if absolutely false everything in which I could imagine the least doubt, in order to see if I was left believing anything that was entirely indubitable. Thus, because our senses sometimes deceive us, I decided to suppose that nothing was such as they led us to imagine. And since there are men who make mistakes in reasoning, committing logical fallacies concerning the simplest questions in geometry, and because I judged that I was as prone to error as anyone else, I rejected as unsound all the arguments I had previously taken as demonstrative proofs. Lastly, considering that the very thoughts we have while awake may also occur while we sleep without any of them being at the time true, I resolved to pretend that all the things that had ever entered my mind were no more true than the illusions of my dreams. But immediately I noticed that while I was trying thus to think everything false, it was necessary 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 all the most extravagant suppositions of the sceptics were incapable of shaking it, I decided that I could accept it without scruple as the first principle of the philosophy I was seeking.

Next I examined attentively 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 could not for all that pretend that I did not exist. I saw on the contrary that from the mere fact that I thought of doubting the truth of other things, it followed quite evidently and certainly that I existed; whereas if I had merely ceased thinking, even if everything else I had ever imagined had been true, I should have had no reason to believe that I existed. From this I knew I was a substance whose whole essence or nature is simply to think, and which does not require any place, or depend on any material thing, in order to exist. Accordingly this 'I' — that is, the soul by which I am what I am — is entirely distinct from the body, and indeed is easier to know than the body, and would not fail to be whatever it is, even if the body did not exist.

After this I considered in general what is required of a proposition in order for it to be true and certain; for since I had just found one that I knew to be such, I thought that I ought also to know what this certainty consists in. I observed that there is nothing at all in the proposition '*I am thinking, therefore I exist*' to assure me that I am speaking the truth, except that I see very clearly that in order to think it is necessary to exist. So I decided that I could take it as a general rule that the things we conceive very clearly and very distinctly are all true; only there is some difficulty in recognizing which are the things that we distinctly conceive.

Next, reflecting upon the fact that I was doubting and that consequently my being was not wholly perfect (for I saw clearly that it is a

Those nine years passed by, however, without my taking any side regarding the questions which are commonly debated among the learned, or beginning to search for the foundations of any philosophy more certain than the commonly accepted one. The example of many fine intellects who had previously had this project, but had not, I thought, met with success, made me imagine the difficulties to be so great that I would not have dared to embark upon it so soon if I had not noticed that some people were spreading the rumour that I had already completed it. I cannot say what basis they had for this opinion. If I contributed anything to it by my conversation, it must have been because I confessed my ignorance more ingenuously than is customary for those with a little learning, and perhaps also because I displayed the reasons I had for doubting many things which others regard as certain, rather than because I boasted of some learning. But as I was honest enough not to wish to be taken for what I was not, I thought I had to try by every means to become worthy of the reputation that was given me. Exactly eight years ago this desire made me resolve to move away from any place where I might have acquaintances and retire to this country, where the long duration of the war has led to the establishment of such order that the armies maintained here seem to serve only to make the enjoyment of the fruits of peace all the more secure.¹ Living here, amidst this great mass of busy people who are more concerned with their own affairs than curious about those of others, I have been able to lead a life as solitary and withdrawn as if I were in the most remote desert, while lacking none of the comforts found in the most populous cities.

Part Four

I do not know whether I should tell you of the first meditations that I had there, for they are perhaps too metaphysical and uncommon for everyone's taste. And yet, to make it possible to judge whether the foundations I have chosen are firm enough, I am in a way obliged to speak of them. For a long time I had observed, as noted above, that in practical life it is sometimes necessary to act upon opinions which one knows to be quite uncertain just as if they were indubitable. But since I now wished to devote myself solely to the search for truth, I thought it necessary to do

¹ Descartes settled in Holland in 1629. The war was that conducted by the United Provinces against Spain from 1572 to 1648.

The Philosophical Writings of Descartes

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MEDITATIONS ON FIRST PHILOSOPHY

in which are demonstrated the existence of God and the distinction between the human soul and the body

FIRST MEDITATION

What can be called into doubt

Some years ago I was struck by the large number of falsehoods that I had accepted as true in my childhood, and by the highly doubtful nature of the whole edifice that I had subsequently based on them. I realized that it was necessary, once in the course of my life, to demolish everything completely and start again right from the foundations if I wanted to establish anything at all in the sciences that was stable and likely to last. But the task looked an enormous one, and I began to wait until I should reach a mature enough age to ensure that no subsequent time of life would be more suitable for tackling such inquiries. This led me to put the project off for so long that I would now be to blame if by pondering over it any further I wasted the time still left for carrying it out. So today I have expressly rid my mind of all worries and arranged for myself a clear stretch of free time. I am here quite alone, and at last I will devote myself sincerely and without reservation to the general demolition of my opinions.

But to accomplish this, it will not be necessary for me to show that all my opinions are false, which is something I could perhaps never manage. Reason now leads me to think that I should hold back my assent from opinions which are not completely certain and indubitable just as carefully as I do from those which are patently false. So, for the purpose of rejecting all my opinions, it will be enough if I find in each of them at least some reason for doubt. And to do this I will not need to run through them all individually, which would be an endless task. Once the foundations of a building are undermined, anything built on them collapses of its own accord; so I will go straight for the basic principles on which all my former beliefs rested.

Whatever I have up till now accepted as most true I have acquired either from the senses or through the senses. But from time to time I have found that the senses deceive, and it is prudent never to trust completely those who have deceived us even once.

Yet although the senses occasionally deceive us with respect to objects which are very small or in the distance, there are many other beliefs about

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which doubt is quite impossible, even though they are derived from the senses – for example, that I am here, sitting by the fire, wearing a winter dressing-gown, holding this piece of paper in my hands, and so on. Again, how could it be denied that these hands or this whole body are mine? Unless perhaps I were to liken myself to madmen, whose brains are so damaged by the persistent vapours of melancholia that they firmly maintain they are kings when they are paupers, or say they are dressed in purple when they are naked, or that their heads are made of earthenware, or that they are pumpkins, or made of glass. But such people are insane, and I would be thought equally mad if I took anything from them as a model for myself. 19

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A brilliant piece of reasoning! As if I were not a man who sleeps at night, and regularly has all the same experiences¹ while asleep as madmen do when awake – indeed sometimes even more improbable ones. How often, asleep at night, am I convinced of just such familiar events – that I am here in my dressing-gown, sitting by the fire – when in fact I am lying undressed in bed! Yet at the moment my eyes are certainly wide awake when I look at this piece of paper; I shake my head and it is not asleep; as I stretch out and feel my hand I do so deliberately, and I know what I am doing. All this would not happen with such distinctness to someone asleep. Indeed! As if I did not remember other occasions when I have been tricked by exactly similar thoughts while asleep! As I think about this more carefully, I see plainly that there are never any sure signs by means of which being awake can be distinguished from being asleep. The result is that I begin to feel dazed, and this very feeling only reinforces the notion that I may be asleep.

Suppose then that I am dreaming, and that these particulars – that my eyes are open, that I am moving my head and stretching out my hands – are not true. Perhaps, indeed, I do not even have such hands or such a body at all. Nonetheless, it must surely be admitted that the visions which come in sleep are like paintings, which must have been fashioned in the likeness of things that are real, and hence that at least these general kinds of things – eyes, head, hands and the body as a whole – are things which are not imaginary but are real and exist. For even when painters try to create sirens and satyrs with the most extraordinary bodies, they cannot give them natures which are new in all respects; they simply jumble up the limbs of different animals. Or if perhaps they manage to think up something so new that nothing remotely similar has ever been seen before – something which is therefore completely fictitious and unreal – at least the colours used in the composition must be real. By similar reasoning, although these general kinds of things – eyes, head, 20

¹ ... and in my dreams regularly represent to myself the same things' (French version).

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hands and so on – could be imaginary, it must at least be admitted that certain other even simpler and more universal things are real. These are as it were the real colours from which we form all the images of things, whether true or false, that occur in our thought.

This class appears to include corporeal nature in general, and its extension; the shape of extended things; the quantity, or size and number of these things; the place in which they may exist, the time through which they may endure,¹ and so on.

So a reasonable conclusion from this might be that physics, astronomy, medicine, and all other disciplines which depend on the study of composite things, are doubtful; while arithmetic, geometry and other subjects of this kind, which deal only with the simplest and most general things, regardless of whether they really exist in nature or not, contain something certain and indubitable. For whether I am awake or asleep, two and three added together are five, and a square has no more than four sides. It seems impossible that such transparent truths should incur any suspicion of being false.

- 21 And yet firmly rooted in my mind is the long-standing opinion that there is an omnipotent God who made me the kind of creature that I am. How do I know that he has not brought it about that there is no earth, no sky, no extended thing, no shape, no size, no place, while at the same time ensuring that all these things appear to me to exist just as they do now? What is more, since I sometimes believe that others go astray in cases where they think they have the most perfect knowledge, may I not similarly go wrong every time I add two and three or count the sides of a square, or in some even simpler matter, if that is imaginable? But perhaps God would not have allowed me to be deceived in this way, since he is said to be supremely good. But if it were inconsistent with his goodness to have created me such that I am deceived all the time, it would seem equally foreign to his goodness to allow me to be deceived even occasionally; yet this last assertion cannot be made.²

Perhaps there may be some who would prefer to deny the existence of so powerful a God rather than believe that everything else is uncertain. Let us not argue with them, but grant them that everything said about God is a fiction. According to their supposition, then, I have arrived at my present state by fate or chance or a continuous chain of events or by some other means; yet since deception and error seem to be imperfections, the less powerful they make my original cause, the more likely it is that I am so imperfect as to be deceived all the time. I have an answer to these arguments, but am finally compelled to admit that this is not one of my former beliefs about which a doubt may not properly

1 '... the place where they are, the time which measures their duration' (French version)

2 '... yet I cannot doubt that he does allow this' (French version).

raised; and this on powerful and my assent from obvious falsehood.

But it is not to remember it. wishes, they can a result of long the habit of coming to them to be with opinions which just been shown. In view of this, completely the opposite time that these this until the will be distorting influence perceiving this error will result in distrustful attitude action but mere.

I will suppose source of truth and cunning have think that the external things to ensnare my eyes, or flesh, or these things. I see even if it is not in my power,² hoods, so that will be unable arduous under life. I am like asleep; as he b up, and goes a same way. I have shaken out of hard labour will amid the next

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