

Selections from Descartes' *Treatise on Man* and his letters

(From: *The Philosophy of Descartes*, Henry A. P. Torrey, tr., New York: Henry Holt and Company, 1892, pp. 275-287)

MAN.

THESE men shall be composed, as we are, of a soul and a body; and I must describe to you first the body by itself, afterward the soul, also by itself, and finally I must show you how both these natures are to be joined and united to compose men which resemble us.

I assume that the body is nothing else than a statue or machine of clay which God forms expressly to make it as nearly like as possible to ourselves, so that not only does he give it externally the color and the form of all our members, but also he puts within it all the parts necessary to make it walk, eat, breathe, and in fine imitate all those of our functions which may be supposed to proceed from matter and to depend merely on the arrangement of organs.

We see clocks, artificial fountains, mills, and other similar machines, which, although made by men, are not without the power of moving of themselves in many different ways; and it seems to me that I should not be able to imagine so many kinds of movements in this one, which I am supposing to be made by the hand of God, nor attribute to it so much of artifice that you would not have reason to think there might still be more.

Now, I will not stop to describe to you the bones, nerves, muscles, veins, arteries, stomach, liver, spleen, heart, brain, nor all the other different parts of which it is to be composed; for I assume them to be in every respect similar to the parts of our own body which have the same names, and which you can have shown to you by any learned anatomist, at least those which are large enough to be seen, if you do not already know them well enough yourselves; and as for those which, because of their minuteness, are invisible, I shall be able to make you more easily and clearly understand them, by speaking of the movements which depend upon them; so that it is only necessary here for me to explain in order these movements, and to tell you by the same means what functions of our own they represent.... [AT xi, 119-121. Here "AT" abbreviates Adam and Tannery, *Œuvres de Descartes*, (Paris: Cerf, 1897-1913); this is a standard way of referring to Descartes' works.]

But what is here to be chiefly noted is that all the most active, vigorous, and finest particles of the blood tend to run into the cavities of the brain, inasmuch as the arteries which carry them are those which come in the straightest line of all from the heart, and, as you know, all bodies in motion tend, as far as possible, to continue their motion in a straight line.... [AT xi, 128.]

In regard to the particles of blood which penetrate to the brain, they

serve not only to nourish and support its substance, but chiefly, also, to produce there a certain very subtle breath, or rather flame, very active and very pure, which is called the *animal spirits*. For it must be understood that the arteries which carry them from the heart, after being divided into an infinitude of small branches, and having formed those small tissues which are spread like tapestries at the base of the cavities of the brain, collect about a certain small *gland* [the pineal gland] situated nearly at the middle of the substance of the brain, just at the entrance of its cavities, and have at this place a great number of small openings through which the finest particles of the blood they contain can run into this gland, but which are too narrow to admit the larger.

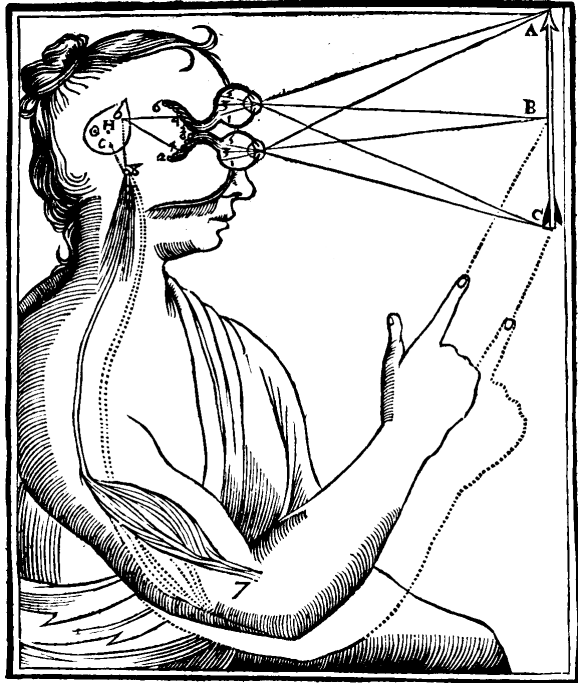
It must also be understood that these arteries do not end there, but that—many of them there joined together in one—they mount directly upward and empty into that great artery which is like a Euripus [aqueduct] by which the whole exterior surface of the brain is irrigated. And, moreover, it is to be noted that the larger particles of the blood may lose much or their onward motion in the winding passages of the small tissues through which they pass, inasmuch as they have the power to push on the smaller ones among them, and so transfer it to them; but that these smaller ones cannot in the same way lose their own, inasmuch as it is even increased by that which the larger transfer to them, and there are no other bodies around them to which they can so easily transfer it.

Whence it is easy to conceive that, when the larger ones mount straight toward the exterior surface of the brain, where they serve for the nourishment of its substance, they cause the smaller and more rapidly moving particles all to turn aside and enter into this gland, which is to be conceived of as a very copious fountain, whence they flow on all sides at once into the cavities of the brain; and thus, with no other preparation or change, except that they are separated from the larger, and that they still retain the extreme swiftness which the heat of the heart has imparted to them, they cease to have the form of blood and are called the animal spirits.

Now, in proportion as these spirits enter thus the cavities of the brain, they pass thence into the pores of its substance, and from these pores into the nerves; where, according as they enter, or even only as they tend to enter, more or less into some rather than into others, they have the power to change the form of the muscles into which their nerves are inserted and by this means to cause all the limbs to move; just as you may have seen in grottoes and fountains in the royal gardens that the force alone with which the water moves, in passing from the spring, is enough to move various machines, and even to make them play on instruments, or utter words, according to the different arrangement of the pipes which conduct it.

And, indeed, the nerves of the machine that I am describing to you

may very well be compared to the pipes of the machinery of these fountains, its muscles and its tendons to various other engines and devices which serve to move them, its animal spirits to the water which sets them in motion, of which the heart is the spring, and the cavities of the brain the outlets. Moreover, respiration and other such functions as are natural and usual to it, and which depend on the course of the spirits, are like the movements of a clock or a mill,



[One of many images used to illustrate the work when it was published (AT xi, fig. 33, referred to on AT xi, 181, 183). The pineal gland is labeled H. The lines leading to it from optical nerves and from it to motor nerves are the paths of the animal spirits.]

which the regular flow of the water can keep up. External objects which, by their presence alone, act upon the organs of its senses, and which by this means determine it to move in many different ways, according as the particles of its brain are arranged, are like visitors who, entering some of the grottoes of these fountains, bring about of themselves, without intending it, the movements which occur in their presence; for they cannot enter without stepping on certain tiles of the pavement so arranged that, for example, if they approach a Diana taking a bath, they make her hide in the reeds; and, if they pass on in pursuit of her, they cause a Neptune to appear before them, who menaces them with his trident; or if they turn in some other direction they will make a marine monster come out, who will squirt water into their faces, or something similar will happen, according to the fancy of the engineers who construct them. And finally, when the *reasonable soul* shall be in this machine, it will have its principal seat in the brain, and it will be there like the fountain-maker, who must be at the openings where all the pipes of these machines discharge themselves, if he wishes to start, to stop, or to change in any way their movements.... [AT xi, 129-132.]

I desire you to consider next that all the functions which I have

attributed to this machine, such as the digestion of food, the beating of the heart and arteries, the nourishment and growth of the members, respiration, waking, and sleeping; the impressions of light, sounds, odors, tastes, heat, and other such qualities on the organs of the external senses; the impression of their ideas on the common sense (*sensus communis*) and the imagination; the retention or imprinting of these ideas upon the memory; the interior motions of the appetites and passions; and, finally, the external movements of all the members, which follow so suitably as well the actions of objects which present themselves to sense, as the passions and impressions which are found in the memory, that they imitate in the most perfect manner possible those of a real man; I desire, I say, that you consider that all these functions follow naturally in this machine simply from the arrangement of its parts, no more nor less than do the movements of a clock, or other *automata*, from that of its weights and its wheels; so that it is not at all necessary for their explanation to conceive in it any other soul, vegetative or sensitive, nor any other principle of motion and life, than its blood and its spirits, set in motion by the heat of the fire which burns continually in its heart, and which is of a nature no different from all fires in inanimate bodies. [AT xi, 201-202.]

AUTOMATISM OF BRUTES.

Letter to the Marquis of Newcastle [William Cavendish].

... As for the understanding or thought attributed by Montaigne and others to brutes, I cannot hold their opinion; not, however, because I am doubtful of the truth of what is commonly said, that men have absolute dominion over all the other animals; for while I allow that there are some which are stronger than we are, and I believe there may be some, also, which have natural cunning capable of deceiving the most sagacious men; yet I consider that they imitate or surpass us only in those of our actions which are not directed by thought; for it often happens that we walk and that we eat without thinking at all upon what we are doing; and it is so much without the use of our reason that we repel things which harm us, and ward off blows struck at us, that, although we might fully determine not to put our hands before our heads when falling, we could not help doing so. I believe, also, that we should eat as the brutes do, without having learned how, if we had no power of thought at all; and it is said that those who walk in their sleep sometimes swim across rivers, where, had they been awake, they would have been drowned.

As for the movements of our passions, although in ourselves they are accompanied with thought, because we possess that faculty, it is, nevertheless, very evident that they do not depend upon it, because they

often arise in spite of us, and, consequently, they may exist in brutes, and even be more violent than they are in men, without warranting the conclusion that brutes can think; in fine there is no one of our external actions which can assure those who examine them that our body is anything more than a machine which moves of itself, but which also has in it a mind which thinks—excepting words, or other signs made in regard to whatever subjects present themselves, without reference to any passion. I say words or other signs, because mutes make use of signs in the same way as we do of the voice, and these signs are pertinent; but I exclude the talking of parrots, but not that of the insane, which may be apropos to the case in hand, although it is irrational; and I add that these words or signs are not to relate to any passion, in order to exclude, not only cries of joy or pain and the like, but, also, all that can be taught to any animal by art; for if a magpie be taught to say “good-morning” to its mistress when it sees her coming, it may be that the utterance of these words is associated with the excitement of some one of its passions; for instance, there will be a stir of expectation of something to eat, if it has been the custom of the mistress to give it some dainty bit when it spoke those words; and in like manner all those things which dogs, horses, and monkeys are made to do are merely motions of their fear, their hope, or their joy, so that they might do them without any thought at all.

Now, it seems to me very remarkable that language, as thus defined, belongs to man alone; for although Montaigne and Charron have said that there is more difference between one man and another than between a man and a brute, nevertheless there has never yet been found a brute so perfect that it has made use of a sign to inform other animals of something which had no relation to their passions; while there is no man so imperfect as not to use such signs; so that the deaf and dumb invent particular signs by which they express their thoughts, which seems to me a very strong argument to prove that the reason why brutes do not talk as we do is that they have no faculty of thought, and not at all that the organs for it are wanting. And it cannot be said that they talk among themselves, but we do not understand them; for, as dogs and other animals express to us their passions, they would express to us as well their thoughts, if they had them. I know, indeed, that brutes do many things better than we do, but I am not surprised at it; for that, also, goes to prove that they act by force of nature and by springs, like a clock, which tells better what the hour is than our judgment can inform us. And, doubtless, when swallows come in the spring, they act in that like clocks. All that honey-bees do is of the same nature; and the order that cranes keep in flying, or monkeys drawn up for battle, if it be true that they do observe any order, and, finally, the instinct of burying their dead is no more surprising than that of dogs and cats, which scratch the ground to bury their excrements, although they almost never do bury them, which shows that they do it by instinct only, and not by thought. It

can only be said that, although the brutes do nothing which can convince us that they think, nevertheless, because their bodily organs are not very different from ours, we might conjecture that there was some faculty of thought joined to these organs, as we experience in ourselves, although theirs be much less perfect, to which I have nothing to reply, except that, if they could think as we do, they would have an immortal soul as well as we, which is not likely, because there is no reason for believing it of some animals without believing it of all, and there are many of them too imperfect to make it possible to believe it of them, such as oysters, sponges, etc. [AT iv, 573-576.]

Letter to Henry More, 1649.

... But the greatest of all the prejudices we have retained from infancy is that of believing that brutes think. The source of our error comes from having observed that many of the bodily members of brutes are not very different from our own in shape and movements, and from the belief that our mind is the principle of the motions which occur in us; that it imparts motion to the body and is the cause of our thoughts. Assuming this, we find no difficulty in believing that there is in brutes a mind similar to our own; but having made the discovery, after thinking well upon it, that two different principles of our movements are to be distinguished,—the one entirely mechanical and corporeal, which depends solely on the force of the animal spirits and the configuration of the bodily parts, and which may be called corporeal soul, and the other incorporeal, that is to say, mind or soul, which you may define a substance which thinks,—I have inquired with great care whether the motions of animals proceed from these two principles or from one alone. Now, having clearly perceived that they can proceed from one only, I have held it demonstrated that we are not able in any manner to prove that there is in the animals a soul which thinks. I am not at all disturbed in my opinion by those doublings and cunning tricks of dogs and foxes, nor by all those things which animals do, either from fear, or to get something to eat, or just for sport. I engage to explain all that very easily, merely by the conformation of the parts of the animals. Nevertheless, although I regard it as a thing demonstrated that it cannot be proved that the brutes have thought, I do not think that it can be demonstrated that the contrary is not true, because the human mind cannot penetrate into the heart to know what goes on there; but, on examining into the probabilities of the case, I see no reason whatever to prove that brutes think, if it be not that having eyes, ears, a tongue, and other organs of sense like ours, it is likely that they have sensations as we do, and, as thought is involved in the sensations which we have, a similar faculty of thought must be attributed to them. Now, since this argument is within the reach of everyone's capacity, it has held possession of all minds from infancy. But there are other stronger and

more numerous arguments for the opposite opinion, which do not so readily present themselves to everybody's mind; as, for example, that it is more reasonable to make earth-worms, flies, caterpillars, and the rest of the animals, move as machines do, than to endow them with immortal souls.

Because it is certain that in the body of animals, as in ours, there are bones, nerves, muscles, blood, animal spirits, and other organs, disposed in such a manner that they can produce of themselves, without the aid of any thought, all the movements which we observe in the animals, as appears in convulsive movements, when, in spite of the mind itself, the machine of the body moves often with greater violence, and in more various ways than it is wont to do with the aid of the will; moreover, inasmuch as it is agreeable to reason that art should imitate nature, and that men should be able to construct divers *automata* in which there is movement without any thought, nature, on her part, might produce these *automata*, and far more excellent ones, as the brutes are, than those which come from the hand of man, seeing no reason anywhere why thought is to be found wherever we perceive a conformation of bodily members like that of the animals, and that it is more surprising that there should be a soul in every human body than that there should be none at all in the brutes.

But the principal argument, to my mind, which may convince us that the brutes are devoid of reason, is that, although among those of the same species, some are more perfect than others, as among men, which is particularly noticeable in horses and dogs, some of which have more capacity than others to retain what is taught them, and although all of them make us clearly understand their natural movements of anger, of fear, of hunger, and others of like kind, either by the voice or by other bodily motions, it has never yet been observed that any animal has arrived at such a degree of perfection as to make use of a true language; that is to say, as to be able to indicate to us by the voice, or by other signs, anything which could be referred to thought alone, rather than to a movement of mere nature; for the word is the sole sign and the only certain mark of the presence of thought hidden and wrapped up in the body; now all men, the most stupid and the most foolish, those even who are deprived of the organs of speech, make use of signs, whereas the brutes never do anything of the kind; which may be taken for the true distinction between man and brute. I omit, for the sake of brevity, the other arguments which deny thought to the brutes. It must, however, be observed that I speak of thought, not of life, nor of sensation; for I do not deny the life of any animal, making it to consist solely in the warmth of the heart. I do not refuse to them feeling even, in so far as it depends only on the bodily organs. Thus, my opinion is not so cruel to animals as it is favorable to men; I speak to those who are not committed to the extravagances of Pythagoras, which attached to those

who ate or killed them the suspicion even of a crime.... [AT v, 275-279.]

Letter to Mersenne, July 30, 1640.

As for the brute beasts, we are so accustomed to persuade ourselves that they feel just as we do, that it is difficult to rid ourselves of this opinion; but, if we were also accustomed to see *automata* which should imitate perfectly all those of our actions which they could imitate and remain *automata*, we should have no doubt whatever that all animals without reason are also *automata*, because we should find just the same differences between ourselves and them as between ourselves and *automata*, as I have written on page 56 of the Method [AT vi, 55] and I have very particularly shown in my World how all the organs which are required to produce all those actions which occur in *automata* are found in the bodies of animals. [AT iii, 121.]