

Man a Machine (1748)

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It is not enough for a wise man to study nature and truth; he should dare state truth for the benefit of the few who are willing and able to think. As for the rest, who are voluntarily slaves of prejudice, they can no more attain truth, than frogs can fly.

I reduce to two the systems of philosophy which deal with man's soul. The first and older system is materialism; the second is spiritualism.

The metaphysicians who have hinted that matter may well be endowed with the faculty of thought have perhaps not reasoned ill. For there is in this case a certain advantage in their inadequate way of expressing their meaning. In truth, to ask whether matter can think, without considering it otherwise than in itself, is like asking whether matter can tell time. It may be foreseen that we shall avoid this reef upon which Locke had the bad luck to shipwreck.

The Leibnizians with their monads have set up an unintelligible hypothesis. They have rather spiritualized matter than materialized the soul. How can we define a being whose nature is absolutely unknown to us?

Descartes and all the Cartesians, among whom the followers of Malebranche have long been numbered, have made the same mistake. They have taken for granted two distinct substances in man, as if they had seen them, and positively counted them.

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... Experience and observation should therefore be our only guides here. Both are to be found throughout the records of the physicians who were philosophers, and not in the works of the philosophers who were not physicians. The former have traveled through and illuminated the labyrinth of man; they alone have laid bare those springs [of life] hidden under the external integument which conceals so many wonders from our eyes. They alone, tranquilly contemplating our soul, have surprised it, a thousand times, both in its wretchedness and in its glory, and they have no more despised it in the first estate, than they have admired it in the second. Thus, to repeat, only the physicians have a right to speak on this subject. What could the others, especially the theologians, have to say? Is it not ridiculous to hear them shamelessly coming to conclusions about a subject concerning which they have had no means of knowing anything, and from which on the contrary they have been completely turned aside by obscure studies that have led them to a thousand prejudiced opinions, - in a word, to fanaticism, which adds yet more to their ignorance of the mechanism of the body?

But even though we have chosen the best guides, we shall still find many thorns and stumbling blocks in the way.

Man is so complicated a machine that it is impossible to get a clear idea of the machine beforehand, and hence impossible to define it. For this reason, all the investigations have been vain, which the greatest philosophers have made à priori, that is to say, in so far as they use, as it were, the wings of the spirit. Thus it is only à posteriori or by trying to

disentangle the soul from the organs of the body, so to speak, that one can reach the highest probability concerning man's own nature, even though one can not discover with certainty what his nature is.

Let us then take in our hands the staff of experience, paying no heed to the accounts of all the idle theories of the philosophers. TO be blind and to think one can do without this staff is the worst kind of blindness. How truly a contemporary writer says that the only vanity fails to gather from secondary causes the same lessons as from primary causes! One can and one even ought to admire all these fine geniuses in their most useless works, such men as Descartes, Malebranche, Leibnitz, Wolff and the rest, but what profit, I ask, has any one gained from their profound meditations, and from all their works? Let us start out then to discover not what has been thought, but what must be thought for the sake of repose in life.

There are as many different minds, different characters, and different customs, as there are different temperaments. Even Galen knew this truth which Descartes carried so far as to claim that medicine alone can change minds and morals, along with bodies. (By the write of L'histoire de l'âme, this teaching is incorrectly attributed to Hippocrates.) It is true that melancholy, bile, phlegm, blood etc., - according to the nature, the abundance, and the different combination of these humors - make each man different from another.

In disease the soul is sometimes hidden, showing no sign of life; sometimes it is so inflamed by fury that it seems to be doubled; sometimes, imbecility vanishes and the convalescence of an idiot produces a wise man. Sometimes, again, the greatest genius becomes imbecile and loses the sense of self. Adieu then to all that fine knowledge, acquired at so high a price, and with so much trouble! Here is a paralytic who asks if his leg is in bed with him; there is a soldier who thinks that he still has the arm which has been cut off. The memory of his old sensations, and of the place to which they were referred by his soul, is the cause of this illusion, and of this kind of delirium. The mere mention of the member which he has lost is enough to recall it to his mind, and to make him feel all its motions; and this causes him an indefinable and inexpressible kind of imaginary suffering.

This man cries like a child at death's approach, while this other jests. What was needed to change the bravery of Caius Julius, Seneca, or Petronius into cowardice or faintheartedness? Merely an obstruction in the spleen, in the liver, an impediment in the portal vein. Why? Because the imagination is obstructed along with the viscera, and this gives rise to all the singular phenomena of hysteria and hypochondria.

What can I add to the stories already told of those who imagine themselves transformed into wolf-men, cocks or vampires, or of those who think that the dead feed upon them? Why should I stop to speak of the man who imagines that his nose or some other member is of glass? The way to help this man to regain his faculties and his own flesh-and-blood nose is to advise him to sleep on hay, lest he beak the fragile organ, and then to set fire to the hay that he may be afraid of being burned - a far which has sometimes cured paralysis. But I must touch lightly on facts which everybody knows.

Neither shall I dwell long on the details of the effects of sleep. Here a tired soldier snores in a trench, in the middle of the thunder of hundreds of cannon. His soul hears nothing; his sleep is as deep as apoplexy. A bomb is on the point of crushing him. He will feel this less perhaps than he feels an insect which is under his foot.

On the other hand, this man who is devoured by jealousy, hatred, avarice, or ambition, can never find any rest. The most peaceful spot, the freshest and most calming drinks are alike useless to one who has not freed his heart from the torment of passion.

The soul and the body fall asleep together. As the motion of the blood is calmed, a sweet feeling of peace and quiet spreads through the whole mechanism. The soul feels itself little by little growing heavy as the eyelids droop, and loses its tenseness, as the fibres of the brain relax; thus little by little it becomes as if paralyzed and with it all the muscles of the body. These can no longer sustain the weight of the head, and the soul can no longer bear the burden of thought; it is in sleep as if it were not.

Is the circulation too quick? the soul cannot sleep. Is the soul too much excited? the blood cannot be quieted: it gallops through the veins with an audible murmur/ Such are the two opposite causes of insomnia. A single fright in the midst of our dreams makes the heart beat at double speed and snatches us from needed and delicious repose, as a real grief or an urgent need would do. Lastly as the mere cessation of the functions of the soul produces sleep, there are, even when we are awake (or at least when we are half awake), kinds of very frequent short naps of the mind, vergers' dreams, which show that the soul does not always wait for the body to sleep. For if the soul is not fast asleep, it surely is not far from sleep, since it cannot point out a single object to which it has attended, among the uncounted number of confused ideas which, so to speak, fill the atmosphere of our brains like clouds.

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The human body is a machine which winds its own springs. It is the living image of perpetual movement. Nourishment keeps up the movement which fever excites. Without food, the soul pines away, goes mad, and dies exhausted. The soul is a taper whose light flares up the moment before it goes out. But nourish the body, pour into its veins life-giving juices and strong liquors, and then the soul grows strong like them, as if arming itself with a proud courage, and the soldier whom water would have made to flee, grows bold and runs joyously to death to the sound of drums. Thus a hot drink sets into stormy movement the blood which a cold drink would have calmed.

What power there is in a meal! Joy revives in a sad heart, and infects the souls of comrades, who express their delight in the friendly songs in which the Frenchman excels. The melancholy man alone is dejected, and the studious man is equally out of place [in such company].

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In general, the form and the structure of the brains of quadrupeds are almost the same as those of the brain of man; the same shape, the same arrangement everywhere, with this essential difference, that of all the animals man is the one whose brain is largest, and, in proportion to its mass, more convoluted than the brain of any other animal; then come the monkey, the beaver, the elephant, the dog, the fox, the cat. These animals are most like man, for among them, too, one notes the same progressive analogy in relation to the corpus callosum in which Lancisi - anticipating the late M. de la Peyronie - established the seat of the soul. The latter, however, illustrated the theory by innumerable experiments.

Next after all the quadrupeds, birds have the largest brains. Fish have large heads, but

these are void of sense, like the heads of many men. Fish have no corpus callosum, and very little brain, while insects entirely lack brain.

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If, as is ordinarily observed, the imbecile does not lack brain, his brain will be deficient in its consistency - for instance, in being too soft. The same thing is true of the insane, and the defects of their brains do not always escape our investigation. But if the causes of imbecility, insanity, etc., are not obvious, where shall we look for the causes of the diversity of all minds? They would escape the eyes of a lynx and of an argus. A mere nothing, a tiny fiber, something that could never be found by the most delicate anatomy, would have made of Erasmus and Fontenelle two idiots, and Fontenelle himself speaks of this very fact in one of his best dialogues.

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The transition from animals to man is not violent, as true philosophers will admit. What was man before the invention of words and the knowledge of language? An animal of his own species with much less instinct than the others. In those days, he did not consider himself king over the other animals, nor was he distinguished from the ape, and from the rest, except as the ape itself differs from the other animals, i.e., by a more intelligent face. Reduced to the bare intuitive knowledge of the Leibnizians he saw only shapes and colors, without being able to distinguish between them: the same, old as young, child at all ages, he lisped out his sensations and his needs, as a god that is hungry or tired of sleeping, asks for something to eat, or for a walk.

Words, languages, laws, sciences, and the fine arts have come, and by them finally the rough diamond of our mind has been polished. Man has been trained in the same way as animals. He has become an author, as they have become beasts of burden. A geometrician has learned to perform the most difficult demonstrations and calculations, as a monkey has learned to take his little hat off and on, and to mount his tame dog. All has been accomplished through signs, every species has learned what it could understand, and in this way men have acquired symbolic knowledge, still so called by our German philosophers.

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All this knowledge, with which vanity fills the balloon-like brains of our proud pedants, is therefore but a huge mass of words and figures, which form in the brain all the marks by which we distinguish and recall objects. All our ideas are awakened after the fashion in which the gardener who knows plants recalls all stages of their growth at sight of them. These words and the objects designated by them are so connected in the brain that it is comparatively rare to imagine a thing without the name or sign that is attached to it.

I always use the word "imagine," because I think that everything is the work of imagination, and that all the faculties of the soul can be correctly reduced to pure imagination in which they all consist. Thus judgment, reason, and memory are not absolute parts of the soul, but merely modifications of this kind of medullary screen upon which images of the objects painted in the eye are projected as by a magic lantern.

But if such is the marvelous and incomprehensible result of the structure of the brain, if

everything is perceived and explained by imagination, why should we divide the sensitive principle which thinks in man? Is not this a clear inconsistency in the partisans of the simplicity of the mind? For a thing that is divided can no longer without absurdity be regarded as indivisible. See to what one is brought by the abuse of language and by those fine words (spirituality, immateriality, etc.) used haphazard and not understood even by the most brilliant.

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We were not originally made to be learned; we have become so perhaps by a sort of abuse of our organic faculties, and at the expense of the State which nourishes a host of sluggards whom vanity has adorned with the name of philosophers. Nature has created us all solely to be happy - yes, all of us from the crawling worm to the eagle lost in the clouds. For this cause she has given all animals some share of natural law, a share greater or less according to the needs of each animal's organs when in normal condition.

Now how shall we define natural law? It is a feeling that teaches us what we should not do, because we would not wish it to be done to us. Should I dare add to this common idea, that this feeling seems to me but a kind of fear or dread, as salutary to the race as to the individual; for may it not be true that we respect the purse and life of others, only to save our own possessions, our honor, and ourselves; like those Ixions of Christianity who love God and embrace so many fantastic virtues, merely because they are afraid of hell!

You see that natural law is but an intimate feeling that, like all other feelings (thought included) belongs also to imagination. Evidently, therefore, natural law does not presuppose education, revelation, nor legislator, - provided one does not propose to confuse natural law with civil laws, in the ridiculous fashion of the theologians.

The arms of fanaticism may destroy those who support these truths, but they will never destroy the truths themselves.

I do not mean to call in question the existence of a supreme being; on the contrary it seems to me that the greatest degree of probability is in favor of this belief. But since the existence of this being goes no further than that of any other toward proving the need of worship, it is a theoretic truth with very little practical value. Therefore, since we may say, after such long experience, that religion does not imply exact honesty, we are authorized by the same reasons to think that atheism does not exclude it.

Furthermore, who can be sure that the reason for man's existence is not simply the fact that he exists? Perhaps he was thrown by chance on some spot on the earth's surface, nobody knows how nor why, but simply that he must live and die, like the mushrooms which appear from day to day, or like those flowers which border the ditches and cover the walls.

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Let us then conclude boldly that man is a machine, and that in the whole universe there is but a single substance differently modified. This is no hypothesis set forth by dint of a number of postulates and assumptions; it is not the work of prejudice, nor even of my reason alone; I should have disdained a guide which I think to be so untrustworthy, had not my senses, bearing a torch, so to speak, induced me to follow reason by lighting the way

themselves. Experience has thus spoken to me in behalf of reason; and in this way I have combined the two.

But it must have been noticed that I have not allowed myself even the most vigorous and immediately deduced reasoning, except as a result of a multitude of observations which no scholar will contest; and furthermore, I recognize only scholars as judges of the conclusions which I draw from the observations; and I hereby challenge every prejudiced man who is neither anatomist, nor acquainted with the only philosophy which can here be considered, that of the human body. Against so strong and solid an oak, what could the weak reeds of theology, of metaphysics, and of the schools, avail, ---- childish arms, like our parlor foils, that may well afford the pleasure of fencing, but can never wound an adversary. Need I say that I refer to the empty and trivial notions, to the pitiable and trite arguments that will be urged (as long as the shadow of prejudice or of superstition remains on earth for the suppose incompatibility of two substances which meet and move each other unceasingly? Such is my system, or rather the truth, unless I am much deceived. It is short and simple. Dispute it now who will.