

THE MACHINE MOTIF IN DESCARTES

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Abstract. The paper analyses the machine motif in Descartes' work as it appears within the mind-body dualism. As we know, only the body is conceived by Descartes as machine – special organisation of *res extensa* as *mechanè* –, the mind with its ideas and passions being a different substance, *res cogitans* that would be the origin of freedom, so difficultly reducible to a machine. However, in his theory about the unity of the body and mind, Descartes emphasized the resemblances between these two entities and the reciprocal taking over of some functions and reactions. As a consequence, the mind itself and the soul could be described, to some extent, with the model of a machine. But Descartes' view is more non-conformist than one could suppose. Only this view is analysed here: the grasping by Descartes of the limits of the machine metaphor, as well as some present development of this prefiguring.

MIND-BODY DUALISM, NOT EQUIVALENCE

By tending to underline some significances of the Cartesian dualism, the hypothesis of the present paper is that the distinction mind-body in Descartes is not absolute as someone would think.

Dualism means that – as Descartes stated – there would be two natures/substances² within the man: the body – that generates the movement, the heat, and even the death is the result of the corruption of its parts – and the mind/spirit, that issues the thoughts. The unification of these two substances gives the appetite, the passions. But, more important, only their *unification* gives the human character, and is made through a material unit, the pineal gland between the two hemispheres of the brain. Thus, although the nature of mind or consciousness³, as Descartes assumed⁴, is different from the material substance of the body, the gland itself is first of all material too, though it is “the seat of the soul”⁵, when nor the body is “a subtle penetrating air distributed throughout all these members; I am not a wind, a fire, a vapor, a breath or anything at all that I can image”⁶.

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² Instead of Aristotle's prime substance.

³ Named by Descartes spirit (*l'esprit*) or, in Latin, *mens*. when, as Norman Kemp Smith observed – see *infra* – p. 119, Descartes wants to point the distinction mind – body. When the philosopher aims to show the union of these two substances, he uses the word soul, *l'âme* and *anima*.

⁴ R. Descartes, 1958, Meditation II, p. 186: “What is a thinking thing? It is a thing that doubts, understands, affirms, denies, wills, abstains from willing, that also can be aware of images and sensations”; see also [descartesphiloso010838mbp\[1\].pdf](#)

⁵ R. Descartes, 1909, p. 129; see also http://classiques.uqac.ca/classiques/Descartes/extraits/traite_de_l_homme/l_homme.pdf

⁶ R. Descartes, 1958), Meditation II, p. 185; see [descartesphiloso010838mbp\[1\].pdf](#)

The *unity* of mind and body is difficult to be understood, but the daily experiences show us that if, for example, we go out in the winter without warm clothes, we feel cold and this is a mental status.

Both the body and the mind give cognitive signs⁷. More: the nature of the human mind is more easily known than the body⁸, i.e. by judging with our mind what we are seeing, for example⁹, we judge not only the objects (through them, the body too), but also our faculty to see through our judging. So we see what we are made to do this, by the means of the cultural influences that develop our sensitiveness, i.e. our ability to grasp the significances of the multicoloured world.

The human mind and human body are *interdependent*¹⁰ but, even though the consciousness is what gives the specificity of the man¹¹ and could be understood without any reference to the material, to the body¹², a certain mind cannot be separated from a correspondent certain body: “Nature also teaches me by these sensings of pain, hunger, thirst, etc., that I am not lodged in my body merely as a pilot in a ship, but so intimately conjoined, and as it were intermingled with it, that

⁷ R. Descartes, 1958, Meditation II, p. 183: “Am I so dependent on the body and senses that without them I cannot exist?”; p. 185: “I am therefore [taking myself to be] only a *thinking thing*, that is to say, a mind, an *understanding* or *reason* terms the significance of which has hitherto been unknown to me”; p. 186: “Already I know with certainty that I exist, and that all these imaged things, and in general whatever relates to the nature of body, may possibly be dreams merely or deceptions”; AND p. 189: “I must, therefore, admit that I cannot by way of images comprehend what this wax is, and that it is by the mind alone that I [adequately] apprehend it”; AGAIN p. 189: And what has especially to be noted is that our [adequate] apprehension of it is not a seeing, nor a touching, nor an imaging, and has never been such, although it may formerly have seemed so, but is solely an inspection of the mind which may be imperfect and confused, as it formerly was, or clear and distinct, as it now is, according as my attention is directed less or more to the constituents composing the body”; p. 190: “what I have been supposing myself to see with the eyes I am comprehending solely with the faculty of judgment, a faculty proper not to my eyes but to my mind”; and Meditation IV, p. 212: “the idea I have of the human mind, in so far as it is a thinking thing, not extended in length, breadth or depth, and not characterized by anything that appertains to body, is incomparably more distinct than the idea of any corporeal thing”; p. 239 (Meditation VI): “Now there is nothing which nature teaches me more expressly, or more sensibly, than that I have a body which is adversely affected when I sense pain, and stands in need of food and drink when I suffer hunger or thirst, etc.”; see [descartesphiloso010838mbp\[1\].pdf](#)

⁸ R. Descartes, 1958, Meditation II, p. 182.

⁹ R. Descartes, 1958, Meditation II, p. 190: “what I have been supposing myself to see with the eyes what I am comprehending solely with the faculty of judgment, a faculty proper not to my eyes but to my mind”.

¹⁰ R. Descartes, 1958. Part VI, p. 131: “For the mind is so dependent on the temper and disposition of the bodily organs that if any means can ever be found to render men wiser and more capable than they have hitherto been, I believe that it is in the science of medicine that the means must be sought”.

¹¹ R. Descartes, 1958, p. 233 (Meditation VI).

¹² R. Descartes, 1958, Part IV, p. 119.

with it I form a unitary whole”¹³. Only the *ontological difference* between the two substances – mind and body – gives the asymmetry between them¹⁴; in fact, the mind and body are equally important for a human being.

This interdependence manifests through the memory of the body – for example, the fiddler has the memory of his occupation within his fingers –: “The image of corporeal things is apprehended by the senses (by the mediation of which and of memory they seem to have reached the imagination)”¹⁵. Memory is a collection of ideal facts, ideas, parts of ideas, feelings, and it is related to imagination, both of them “by-products” of the mind as such¹⁶. For this reason, one can estimate the distance between my hand and the wall without measure it.

Two remarks here. 1) With the entire rehabilitation of the body – against an entire medieval tradition –, the essence of man is however the spirit/reason/mind. Why this? Because of an old idea about the characteristic of the human person to be a *subject*: the subject is the one who detains the possibility to be identified and re-identified – in front of other subjects as well as in front of his/her acts –. For this reason, our body could be an illusion given by an evil genius (*malin genie*) – at the best, a beautiful and changing illusion given by the present medicine and cosmetics – but not our mind, however changing it would be.

Nevertheless, a concrete person is the unity of a concrete mind and a concrete body; I feel *my* body (as it was showed from the Meditation VI), thus *I* am the unity of *my* mind and *my* body¹⁷.

2) Although the body could be understood without the spirit it incorporates – as material object, knowable through the operations of the mind: separation of the

¹³ R. Descartes, 1958, p. 239 (Meditation VI). But also, ((4) R. Descartes, 1958), Part V, p. 128.

By interpreting the problem of mind-body unity, (M. Terestchenko, 2004), p. 453, observed that the arguments from the Meditation VI are based on a phenomenological view – working the thought as feeling of the soul – that opens the path to critique his own supposed intellectualism, annulling in this way the classical interpretation of Descartes as intellectualist.

¹⁴ R. Descartes, 1958, (Meditation VI), p. 237: “it is certain that I am truly distinct from my body, and can exist without it”, i.e. without parts of it.

¹⁵ R. Descartes, 1958, (Meditation VI), p. 233.

¹⁶ *Ibidem*, p. 230: “I cannot, however, image the thousand sides of a chiliagon as I do the three sides of a triangle, *nor intuit them as present*, as it were, with the eyes of the mind (*tanquam praesentia intueor*; Fr. *les regarder comme presents avec les yeux de mon esprit*)”; p. 231: “I also note that this power of imaging which is in me, in so far as it differs from the power of understanding, is no wise necessary to my essential being, that is to say, to the essence of my mind. For even if I did not have it, I should undoubtedly none the less remain the same as I now am; and from this, it seems, we may conclude that my power of imaging depends on something different from me, i.e., from my mind”; p. 232: “the mind, in intellection, is turning in some way in upon itself, taking note of some one of the ideas which it possesses in itself, whereas when imaging it is turning itself toward the body and is intuiting in it something conformed to the idea which it has formed for itself or has apprehended by way of the senses”; p. 236: “I rightly conclude that my essence consists in this alone, that I am a thinking thing (i.e., a substance, the whole nature or essence of which consists in thinking)”.

¹⁷ See Descartes’ influence on Merleau-Ponty.

parts, emphasis of the physical laws – the soul is present in every movement, accident, chance, reaction (to will, to imagine etc.)¹⁸. As later the psychologists, phenomenologists (Merleau-Ponty) and philosophers of mind explained: to every mental event corresponds a physical description (D. Davidson, 1980).

If so, videlicet the unity of the human person is given by the unique unity of the body and mind, and if the body is not only understandable with the help of material and physical laws but also transformable, the consequence is that the entire human being is *cognoscible, predictable, subjected to manipulation*. Descartes' comparison of the body with a machine leads just to this conclusion. For the peculiarities of the machine are just these ones: it is cognoscible, predictable and could be manipulated.

Would this Cartesian conclusion be real? The philosopher himself warned us to not be hurried with it: with their entire intertwining, the body and mind are two different substances; they are not identical. More, the human person is the result of many *encounters* between the body as machine/repeatable automate *and* the mind as centre of spontaneity and creativity. The passions themselves are the result of these encounters and, at the same time, the source of the infinite attitudes and thus creativity. But, finally here, in *Discourse*, Part V, Descartes described the human reason as universal instrument that could serve to all the *encounters*¹⁹ – keep attention By insisting on this idea, Descartes proves to be more profound than Machiavelli. Therefore a human person in his/her integrity could not be multiplied: for example, the physical cloning is possible, but not the spiritual one; the subjective experiences are unique.

THE BODY AS MACHINE: WHAT DOES IT MEAN?

Descartes considered the body, composed of “face, hands, arms” as a machine: “toute une machine composée d’os & de chair”, in original²⁰, and translated into English as “that whole *structure* to which I was giving the title ‘body’, composed as it is of the limbs discernible in a corpse”²¹, or as „all that *system* of members composed of bones and flesh as seen in a corps which I

¹⁸ R. Descartes, 1958), Article 30., p. 274: “the soul is really joined to the whole body, and that we cannot, properly speaking, say that it is in any one of its parts to the exclusion of the others the body being unitary, i.e., in some fashion indivisible”.

¹⁹ In original: “Car, au lieu que la raison est un instrument universel qui peut servir en toutes sortes de *rencontres*, ces organes ont besoin de quelque particulière disposition pour chaque action particulière”, in ((3) R. Descartes, 1902), p. 57; in English, ((5) R. Descartes, 2000), Part. V, p. 20 (“For while reason is a universal instrument that can be of help in all sorts of circumstances, these organs require some particular dispositions for each particular action”).

²⁰ R. Descartes, 1904), p. 20.

²¹ R. Descartes, 1958), Meditation II, p. 184 (with my underline, A.B.).

designated by the name of body²². The English translations do not annul the sense of Descartes' idea – that of mechanism or system functioning following precise rules and division of attributes – since the structure and the system imply interdependence of the parts, rules and functions.

As *machine*²³, the body is a model which assimilates the order and the movement as well, and which allows the distinction of the parts. It is an ensemble of pieces. The machine is a system which operates the production and transformation of the movement and answers to an end. The biggest finality of the machine (watches, water machines, organs) is the first cause of Descartes' analogy with the human body: but through the mediation of the animal bodies dissected by the philosopher²⁴. The way of thinking is from the machine to the animal body and from this one to the human body. All of these ones seem to be “machines, extremely powerful, very strange and rare automata”²⁵, but that could be good or damaged²⁶. These states and, generally, the movements of the body are the result of the movement and functioning of its parts. Thus as the machine that is a mechanism which moves from its own power, the body also moves and could be explained starting from precise movements of the parts, but as the machine, the human body also has its *finality* from the global movement of the corpse and not from the ones of the parts. At the same time, as the machine is machine only as such, not as different and isolate parts of it, as the body is a unity of composition: the change of the parts leads to the change of the body itself.

The machine model is the development of the simplest model of the human reason: as set of reactions to parameters of inputs. From this standpoint, reason – i.e. the machine – is opposed to the cunning of non-rational beings. Reason is rational in that it does not substitute a rational and clear representation with an unclear one, cunning: it can derivate, deduce and operate only from a clear anterior representation: that not means, of course, that reason does not use and generate cunning. But it does it for purpose and in a rational and clear representation about. We can imagine automata that make cunning: but they do them in a perfectly rational programme. (From this standpoint, it's interesting that the Greek word *mekanè* means at the same time machine – i.e. a rational artificial entity – and cunning. Why that? Because the machine itself was created with human art, ingeniously, by cunning. But what means here cunning? The stratagems to realise one's own ends making the things to action each on other accordingly to their own nature. And just this is the machine: it uses

²² R. Descartes, 1993), p. 52 (with my underline, A.B.).

²³ R. Descartes, 1909) p. 120 (“a statue or a machine of earth”); see also http://classiques.uqac.ca/classiques/Descartes/extraits/traite_de_l_homme/l_homme.pdf

²⁴ At that time the dissection of the humans was forbidden.

²⁵ R. Descartes, 1958, p. 300.

²⁶ R. Descartes, 1958, Meditation IV, p. 243: “mentally comparing a sick man and an ill-constructed clock with the idea I have of a healthy man and a well-made clock”.

the physical laws that “push” his parts/resorts to action, for the man. The machine is mediation between our reason and the world – as our body is mediating between our reason²⁷ and the world –, a device that makes, communicates and command. For Descartes, the machine – as the human body or even the mind are– is not perfect concretely, but as abstract model. For him, only *homo is sapiens*, the machine is only a model and a humanly made artefact.

The machine model is productive only for it could be explained (and not only understood) through physical laws. But the machine is for Descartes a metaphor, an analogy, a tool of explanation. For this reason, he criticises the attempt to mechanically imitate the human reason and the human being. In *Discourse on the method*, Part V, Descartes insists that even though many animals manifest in some of their actions more skill than do the man, they do it as natural mechanisms “according to the disposition of their organs, just as a clock, which is composed only of wheels and weights, can number the hours and measure time more exactly than we can with all our knowledge”²⁸. In the same manner, the inference from the model of the machine and the animal and the man leads to the idea of essential difference between the rational man and, on the other hand, the beasts which are like machines in their instinctual and efficient reactions. Animals do not have the significances of the words, if one could give the examples of parrots. They are like machines. But, if “one can well conceive of a machine being so made that it utters words appropriate to the bodily actions that will cause some change in its organs and even that it emits some correspondent to the action upon it of external objects which cause a change in its organs...it could not arrange its words differently so as to respond to the sense of all that will be said in its presence, as even the dullest man can do”²⁹.

Thus the machine that is similar to the man is not a man. And this happens for two reasons. One is that the machines cannot use the words in original and spontaneous arrangements; if nevertheless the machines use the words, they do it after a programme – as we say today – so in artificial and monotone regularity, as the dull. The second is that even they may perform many tasks better than the men, they do that not by knowledge, but “through the disposition of theirs organs”³⁰. And, for “these organs require some particular disposition for each particular action, consequently it is for all practical purposes impossible to there to be enough different organs in a machine to make it in all the contingencies of life in the same way as our reason makes us act”³¹. Descartes prefigures here the problems of the AI. The ways and the dispositions are the *programmes* of the cybernetic machine that have to be more and more perfect for the devices become more and more

²⁷ That, observed Descartes, could be understood independently from the body.

²⁸ R. Descartes, 1958, Part V, p. 128.

²⁹ R. Descartes, 2000, p. 20.

³⁰ *Ibidem*, p. 21.

³¹ *Ibidem*.

similar with the human actions. But the criterion that differentiates the humans from the machines still remains: spontaneity, the unique colour of ideas, attitudes and behaviours of the human being. The mind or the soul is his mark.

SIGNIFICANCES OF THE BODY-MACHINE METAPHOR

The model of the human body as machine helped generations of physicians to care the men. The “mechanical” reactions served for the establishment of the normalcy in front of the ill states in the functioning of the organs and the entire organism. Certainly, as later Foucault showed concerning the mental illnesses, the normalcy is also a socio-political concept, and not only a neutral bio-physiological one. But the model of machine meant that the human body can be known, described first of all with the help of quantitative parameters (numbers, measures) since the first quality of the body is his extension (being *res extensa*).

The second meaning of the model is thusly that the body can be manipulated. But here also the socio-political conditioning is fundamental. For what purposes is the body’s manipulation morally/socially/politically accepted? And which are the consequences, for the individual and for the others? Is any experience with the human body necessary? H.G. Wells’ *The Island of Doctor Moreau* (1896) and the drugs – for not reminding the Nazi experiences – show that the response is negative. At the same time, if the stem cells and cloning are means to ameliorate health and the human life and duration, the selling of the body by pieces is a graver problem for bioethics than that of abortion, for example. And if theory asks if one can do everything with his/her body, before the problem of assisted euthanasia it has to be sensitive to the suffering of the body and of the entire human being because of hunger³² and misery: more than a century, the French economist Charles Gide showed that the lower strata are iller and die earlier than the upper strata from the same area and climate (Ch. Gide, 1884).

But a logical consequence of Descartes’ dualism and metaphor of body as machine could be the conception of (relative) autonomy of the body system towards the soul/mind. Nowadays we all know that every sub-system is relatively autonomous toward the system it takes part from. But, although Descartes has insisted on the relativity of the independence of the system body toward the soul and viceversa, on dualism as such and on the profound concrete intimacy between the two substances (essences), the machine metaphor for the body system was and still is the mark of some problematic attitudes toward the human body and the human person. Even though the pozitivist wave of the 19th and somehow the 20th century brought a deep understanding of the human body just for it was conceived

³² And this happens also because of the *ersatz*, the cheap *substitutes* of the perfect aliments we all search for in order to ameliorate our health and avoid pain.

as a material system with precise functions and reactions, it could be also the theoretical basis of the practical attitudes toward the body. Much before some people sell parts of their body in order to subsist as a whole, prostitution meant to sell the entire body in order to quench the hunger of the stomach of the prostitute. Certainly, to quench the hunger of the stomach means to preserve the existence of the entire body, but on what expense? One cannot violent his body/a body without profoundly violent the human person as such, i.e. his/her conscience/soul. For the human person is body + soul, on this + insisted Descartes. Only if one considers the body as autonomous machine from the soul one could see prostitution as simple market practice and concerning the body exclusively. But sex is not a simple mechanical action, but a complex mind-body realisation. It involves movement and feeling as well, anyway the unconditioned will of the parts. If this will is conditioned by the hunger – let us use this metaphor for the various interests linked to the material aspect of existence – sex becomes a simple mechanical routine. Nevertheless, could one reproach to Descartes this unilateralisation? Certainly not. But those who are the enthusiastic partisans of the separation of sex from the deep affection use – as Monsieur Jourdain certainly, without knowing it – the machine model for the body, i.e. the absolute separation mind/soul-body. And this example is unfortunately not unique.

But the significance of Descartes' machine metaphor is the idea of the human universalisable. Every human being is the unity of *res cogitans* and *res extensa*. And if every human being faces the same challenges of this unity, he is also put in different and particular relationships/encounters with everything means human existence. He is a little, vulnerable machine – as machine would he be – unpredictable just for his encounters, but tending to be free, but even freedom worrying him. He becomes thusly nostalgic after the machinic order and, at the same time, he refuse this one (A. Bazac, 2007).

THE MACHINE METAPHOR AND THE PASSIONS OF THE SOUL

The mind-body dualism is explained by Descartes as being the unity of two entities of different order. This not means at all that they could not be cognoscible, thus treated in the same manner: first of all, with a “mechanical” rationalism, deciphering causes and effects, as well as the logic of theirs relationships.

What is fit for this rational treatment is rust for the human reason, the mind feature from the complex *âme/raison/esprit* named by Descartes as the antithesis of the body. Reason seems to be the most adequate for analyse and educate it following its own *principia*³³, since reason is the core of the soul (as in Plato).

³³ Fundamentals.

What to do with the human reason, since, again, the majority of our human fellows are, as Dante and Machiavelli had observed, did not used to practice the inner good sense that would have determined them to follow a logical *consecutio* which would have led them to other behaviours in front of the social reality? Well, Descartes was optimistic: by prefiguring the next Enlightenment, he stated that, although the mind is not a machine like the body, it could be known by deducing from the everyday experiences the natural logic of operations. But if people do not follow the inner logic of the human mind? They could be persuaded and taught by giving them a method.

The method itself is conceived by Descartes as a programme with which the infinite wealth of *connaissances* and imagination could be used and, at the same time, saved. The method is not only an intellectual construction, but it issues from the inner *logos* of the world, i.e. of the world of human knowledge: for the knowledge units are linked with a so marvellous chain – where they could be pulled each other by the logical necessary consequences –, what is more important than to acquire a lot of *livresques* signs of culture (many, many books full of false thoughts) is just to grasp the logic of the knowledge, the reason of the relations between things/ideas³⁴. In this representation, the method seems to be the quality that governs the quantity of knowledge units. This role is as much stronger as the knowledge units are received from the others, whilst the method follows from the inner conscience of men³⁵, from “oneself as another” – if we could borrow this formula from Ricoeur (P. Ricoeur, 1990) – since “good sense is, of all things in the world (among men), the most equitably (equally) distributed”³⁶. If so, the method – easy to be understood by all in virtue of this good sense –, while it is revealed by philosophy/by a necessary education, it could develop a good conducting of reason toward the incorporation of new and new knowledge (about new and new objective facts³⁷) and toward a creative manner to treat these knowledge.

In this respect, Descartes could be considered as a forerunner of the Enlightenment technique: “For to be possessed of a vigorous mind is not enough; the prime requisite is that we rightly employ it”³⁸, i.e. to learn it or to become conscientious of the powers of the human reason, and to exercise this power.

³⁴ R. Descartes, 1958, p. 299; also ((12) R. Descartes, 1908), p. 495–497; also ((13) R. Descartes, 1958), p. 879–881.

³⁵ *Ibidem*, p. 880.

³⁶ R. Descartes, 1958), Part I, p. 93; for the words between brackets see *Discourse on the method, or rightly conducting the reason, and seeking truth in the sciences*, Part I, <http://www.gutenberg.org/files/59/59-h/59-h.htm>

³⁷ “I understand as objective reality of an idea the entity or being represented by the idea”, ((6) R. Descartes, 1904), “Raisons qui prouvent l’existence de Dieu & la distinction qui est entre l’esprit & le corps humain”, p. 124.

³⁸ René Descartes, *Discourse on the method, or rightly conducting the reason, and seeking truth in the sciences* Part I, *ibidem*.

At the same time, the insistence on a single organisation of the human, and of his mind sends us to think about the Cartesian roots of the theory of the unity of science³⁹, as well as about the Cartesian origin of the modern constructivism in epistemology⁴⁰. Just the model of the “universal science” (the method) allows the “*ordro et mensura*” – as Descartes himself named them – of the scientific universality, of the rules which are not only “strong and right”⁴¹, not only “certain and easy”⁴², but constitute the science itself.

But, before the modern Cartesian conception of method, the method of thinking – the same at all the human beings – was conceived as means to educate people and, at the same time, to help these ones to penetrate into the (apparently) hidden essence of things, by “dissecting hypotheses and ascending to first principles in order to obtain valid knowledge”. This method was called by Plato “dialectic”⁴³.

The Cartesian method allows people to get rid of useless knowledge (*Meditations*): the choking over particular aspects being the cause of the bankruptcy of the human knowledge (*Principles of Philosophy*, 1644). The expectation of “strong and right” and “certain and easy” knowledge was to give wisdom: but wisdom is the result of the internalising of the philosophical principles. People could attain wisdom not through formal knowledge – that is only the first level of wisdom, as Aristotle and Leibniz showed – nor through the testimony of the senses – this is the second level – nor through usual conversation and examples, nor through erudition, by discussing with the wises of the past: but through an epistemological purification, through a *method* for which people have to prepare. This preparation involves a provisional moral (*phronesis* – prudence), and,

³⁹ R. Descartes, p. 3: We ought to bear in mind that all the sciences are so closely interconnected that it is much easier to study them together than to isolate one from the others”. And p. 2: “No one of the sciences is ever other than [the outcome of] human discernment, which remains always one and the same, however different be the things to which it is directed”; and *ibidem*, „Nothing is so likely to divert us from adopting the true path in our pursuit of truth as the directing of our studies not to this comprehensive end but to particular topics”.

In French ((1) R. Descartes, 1908), Règle I, p. 360: “All the sciences are so related each other that it’s easier to learn them all together than to separate one of them from the others”.

⁴⁰ (A. Boboc, 1990); And Professor Boboc observed that the hidden sense is the pre-condition of the correction of truth. (Ana Bazac: This hidden sense was expressed by Heidegger who defined truth as *taking out-from-the-state-of-hiding*, and is essential in the conceiving of things as *fabricata*).

⁴¹ R. Descartes, 1908), Règle I, p. 359.

⁴² *Ibidem*, Règle IV, p. 371 (*regulas certas & faciles*).

⁴³ (Plato, 1969, 3D531c) <http://www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A1999.01.0168%3Abook%3D7%3Asection%3D531c> and (*ibidem*, <http://www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A1999.01.0168%3Abook%3D7%3Asection%3D531d>): “I said, I take it that if the *investigation* of all these studies goes far enough to bring out their community and kinship with one another, and to infer their affinities, then to busy ourselves with them contributes to our desired end, and the labour taken is not lost; but otherwise it is vain”. Investigation is *μέθοδος*, like *πραγματεία* in D, is used almost in the later technical sense of “treatise” or “branch of study.”

But see firstly *Meno*, 80d-86c; and *Phaedrus*, 249b-d, 265d-266c.

at this first moment, this one is subordinated to the method. In this way, the roots of the “tree of knowledge” are the conscience of the self (with the notion of truth and the first truths existent in our mind), the trunk is physics describing the nature, and the branches are the different applications (mechanics, medicine and morals). At this moment, morals reveal to be the highest level of wisdom.

So, if the mind itself proves to be influenced, educated, therefore manipulated, would the same be with the passions, the still unpredictable part of the soul?

Descartes proceeded with the passions as Plato: for the sentiments appear as a chaotic bloc, they have to be separated and “rationalised”, taking from them their traditional aura of ineffable and uniqueness: they have to be introduced within the quantitative (numbers, frequency) and qualitative evaluation (one has to find genres and species). Au fond, the *not foreseen* in the world of passions is due to the human encounter with so many social and moral problems. This social conditioning of the passions was very well known by Descartes: but his project within philosophy was not related to the social, but to the psychological. To show the logic, thus the rules of the human reactions – although there always happen *clinamen*/deviations because of so unforeseen facts and reactions of the others – was considered by Descartes as a normal duty after his same effort within the field of the mind. This was for him “the philosophical aim that cannot be substituted, to say the Truth about all the Truths, about all the human practices and ideas” (L. Althusser, 1994).

Therefore, how could be known the spirit? Descartes described the subjective consequences of the mental states – those called today as *qualia* – the characteristics of the sensible experiences – after the description of their visible effects, the behaviours. Thus he analysed passions with the same rational instrument as it used with the body and with the mind. The problem was for him as it is for all of us even today and as it was for Plato, Aristotle and the other ancient philosophers: that of the intertwining within the spirit of two sides of the spiritual activity, the reason or thinking *and* the passions or appetites, and thus that of the irreducibility and incommunicability *or* the communicability⁴⁴ of the spiritual statuses.

Descartes’ explicit conclusion is that the spiritual could be known – and it could be: the mind and the passions as well –, it could also be manipulated. Anyway, for we all observe its evolution, we could at least intervene in this process. And one of the first warnings of Descartes was that if the passions are not ruled from the reason, they enslave us. How takes place the directing of the reason over the passions? Through the will: if our will ought not to oppose to the feeling of passions we do, it must to not consent their effects. And if the will means self-censorship and a pragmatic view – somehow in a Kantian manner –, the soul itself could oppose to all the passions with another one: generosity (S. Malinowski-Charles, 2007).

Here, the machine, i.e. the rationalised view on the human being – not only on the body – reveals to be broader than it was conceived as concerning only the

⁴⁴ Wittgenstein was one who sustained this standpoint.

body. The machine motif signifies also the possibility of moral perfecting. Man proves to be able to think a hierarchy of values (and act upon this one). The lesser important are those which depend the lesser on our power (the goods of the body, the fortune). They have to be aimed only in so far as they do not become obstacles for the acquisition of superior values⁴⁵. These ones are those of the soul: those related to the perceptive function and especially those related to the *understanding*, *judgement*, and to *the will*. The will is the only value which could be mastered: for this reason, people could and have to aim the will to make the biggest good⁴⁶.

If even the unity of body and mind reveals to be a machine – people have good inclinations, but for the composition of the body, the irrational and the encounters – nevertheless they could err. Just for counteract this fact, the method – that means also its application to the passions of the soul – helps them to rule their natural inclinations.

But passions are not inferior to the reason and they have not to miss from the model of man. On the contrary, they are elements that incite the soul to will. From this standpoint, Descartes' human model – although it contains the machine motif – seems to be larger than that of Kant. In fact, Kant's moral is normative and for this reason it “brackets” the passions, taking them out from the model as such. On his turn, Descartes' model has also a normative characteristic: the reason and the method are the factors that convince the conscience, i.e. sustain the good will. The human unity means that it's impossible to live without passions but, at the same time, one has to not let them free, without the brake and direction of the will.

INSTEAD OF CONCLUSION

The machine motif seems to overlap the entire model of man. The body is a machine, the reason could be directed by a formal method and the passions could be at least described by taking from them their aura of unpredictable spontaneity. And, before everything, for the essence of man is the conscience, and if this one could be directed – by unveiling it's deep functioning “as a machine” au fond –, so if conscience could be seen as machine, the man as such is a machine.

In fact, as we saw, Descartes put many nuances and emphasised the complexity and feed-backs between the body and the soul. He was not a naïve, even if we think about him as “father of the modern philosophy”, so as an initial moment, full of unrealised attempts. On the contrary, he could not but observe the

⁴⁵ The present situation when there are useless and risible “desirable” models for mass consumption – artificial and similar starlets, men swollen with steroids, not to speaking about the fortune rush – constitutes a very didactic counter-model to Descartes' moral perspective.

Another observation concerns the scale made by Descartes and followed by many thinkers: from Kant to Maslow.

⁴⁶ Here we remember John Stuart Mill.

human complexity and its zones of shadow. His temperate optimism followed from the coherence of man generated by the universal mind-body dualism and from the universal human good sense. In this manner, instead of the traditional great deist narratives, Descartes constructed the modern humanist narrative.

Mind is a machine, let us convene to use this metaphor, but the *method* to grasp the mind and its traps and liberties could never create a machine. If the human intelligence is the capacity to relate spontaneously and unpredictably, the problem is to programme/to include spontaneity and creativity. How much could one to programme for controlling the mind? Technically, as today the AI researchers show that it's impossible to formalise all the reactions and human solutions, as Descartes put the method as openness of the mind, as manner to discover its *potentialities*, and not as manner of formal encircling. And even though the mind/reason is the part of the soul which conducts, the method is subordinated to the moral of the "good will", for use once again Kant's term.

Not even in front of the absurdities of the human reasoning and consequences, aimed Descartes to make the man as automate. As Wittgenstein later, Descartes did not have a "calculating prejudice". The mind and the passions are influenced also from outwards: the man is not a machine moved only from its own individual tendencies.

If for Descartes the machine motif was only an efficient metaphor, there was an entire line of thinking which proposed the *myth* of the human being as the perfect machine. Or, neither the body nor the soul could be absolutely fabricated. But the possibility of controlling them exists. This control is obviously a socio-political idea and fact⁴⁷. The infinity of the human spontaneity is certainly a problem for the technique of control. But people could be controlled not only with sophisticated means, but with the brutal force and hunger. Letting this apart, we have to be sensitive to the present tendencies to use the scientific means – that start from the supposition of man as machine – for the psychological wars and for the controlling of the thinking.

The distinction mind-body appeared, on the one hand, to fortify the generalisation of the machine motif. But on the other hand, it just weakens it: for the thinking is the possibility to invent and the soul as siege of the passions – the place of the freedom and unforeseeable.

But if for Descartes the machine metaphor signifies an *intelligible model* – like Plato's *forms*⁴⁸ – we could understand how capital is the machine motif itself

⁴⁷ If in the Cartesian model the mind could be assimilated to a machine, whilst the passions pertain to the domain of privacy – but that has not to be exterior to the commandment of reason –, there were political regimes which erased any difference between the public and private, between which could be controlled and which ought not to be. But we also have to be sensitive to the political continuity between so-called opposed political regimes.

⁴⁸ (Plato, 2004), 31d: "when the harmony in animals is dissolved, there is also a dissolution of nature"; 51a: „I do not mean by beauty of form such beauty as that of animals or pictures, which the

(B. Mazlich, 1995): in Descartes and in his perspective. Machine is a form that seeks to introduce within the world of man order, rationality, harmony, intelligibility. Machine tends to put the world of man within the register of the order and intelligible. For Plato, the functioning of the human body was of far lesser interest and significance than the functioning of mind, a mirror of the universal form of the soul. This was the entire pre-modern tradition.

By starting with which is most obvious, Descartes compared the body with a machine not only for ameliorate the study of the human corpse, but especially for showing the inner logic of the living human organism. From this standpoint, “every machine is a spiritualisation of an organism...The machine is, *par excellence*, a phenomenon of spiritual discipline” (T. van Doesburg, 2000). Therefore, Descartes’ dualism itself, concerning the two substances – i.e. explaining the specific attributes of the mind and soul through the ontological difference between them and body –, is softened by their some common functions and by their intertwining: not by doing away with the comparison body-machine because of the cognitive signs promoted by the body as it would be of the same nature as the mind, but, on the contrary, by suggesting that the mind and even the passions – so the entire soul – could be seen, for knowing them, as structures with an inner order and logic.

The man in his entirety could be seen as a machine, but not in La Mettrie’s mechanical representation of the influences of the matters (food, education) on the evolution of the intelligence and feelings, as well as of the similarity between the animals and the man (J.O. de La Mettrie). Indeed, there were two kinds of preoccupations concerning the body and mind of the man: that of questioning the continuity matter-spirit, thus the formation of the spirit on material ground, and that of insisting on the ontological difference, the discontinuity mind-body. The model of machine could be applied in both cases.

many would suppose to be my meaning; but, says the argument, understand me to mean straight lines and circles, and the plane or solid figures which are formed out of them by turning-lathes and rulers and measurers of angles; for these I affirm to be not only relatively beautiful, like other things, but they are eternally and absolutely beautiful”.

The forms have their own model in the world-soul, where the soul of the universe is “like a governor on a steam engine: the governor regulates the motions of the machine in such a way that the machine's self sustained and independently originated motions, which owing to unpredictable conditions of combustion tend to run off to excess, are nonetheless uniformly maintained and do not destroy the machine itself. However, the governor neither initiates the motions it regulates nor is it itself the cause of its being synchronized with the machine. And like a machine-governor, the World-Soul is capable of maintaining order only within a certain range of natural disruptions (*Statesman* 273d–e)”; and “then it is natural that he should view one of the major functions of soul to be the maintenance of order against the natural tendency of the corporeal to be chaotic, thus saving the appearance of the continuous order which we indeed do observe in the phenomenal realm. For Plato the homeostatic conditions of the observed world cannot be explained by physical theories; rather, they have to be explained in spite of physical theories (of the sort articulated at *Timaeus* 58a–c)”, (R. Mohr).

It's however more interesting to represent in an ordered view *the unity* of these two different entities, and Descartes was indeed a forerunner. If Merleau-Ponty's phenomenology accepted the mind-body unity as a fact of experience – as Descartes had also showed – but without a theoretical basis, Mihai Drăgănescu gave a complex integrated view about the human organism as unitary “machine” formed by the total mind (the mind as such + the body's mind) + the physical body (corpse + informatter). Or, the human organism is the living body formed by the physical body + the total mind.

The living body, in fact the total mind is a semantic informational processor⁴⁹ for it has the ability to understand (senses and significances). The AI is only an informational processor with significance (with formal meaning), whilst the ordinary programmes are informational processors without proper meaning⁵⁰.

Every living organism has a mind. Some minds – mental informational processors – do not have mental conscience. Many animals have mental psyche, and some people equate this one to the soul. But the man has not only mental psyche, but spirit. The spirit is the living *conscience* of the man: man is an organism + spirit⁵¹.

How and why had the man arrived at the spirit? Mihai Drăgănescu related here the problem of discontinuity, of ontological difference with the one of the relationship between the two, with the problem of continuity. The man arrives at the spirit because of the qualities of his mental processor which in turn is possible because of his brain and nervous system that exist in his living body. More, this entire “natural” system – the mental processor (the mind) + its material support (the brain and the nervous system) – is constituted and constituting within the social environment people live. “No one constitutes his spirit alone and for this reason the man could be but, at the same time, social”⁵². The individual's own effort to develop his/her spirit is already the effort of a constituted human being, thus with spirit, and takes place in cooperation with other spirits. Man is an *organism with spirit and social character*⁵³ and could be represented by a model in ring⁵⁴ suggesting the complex reciprocal interfaces and influences.

In his evolution, the man has created autonomous worlds, as Karl Popper showed: World One is the world of direct experience, as cultural experience for all but

⁴⁹ Thus it could be represented as a machine. As we saw, Descartes, au fond continuing the entire philosophical line of the logic, suggested that the mind supposes enough order for being thought as machine as well.

⁵⁰ Mihai Drăgănescu, “Corp și organism”, in (M. Drăgănescu, 1993), p. 72.

⁵¹ *Ibidem*, p. 85. This is a very convincing and attractive painting of the man, surpassing the traditional confusions manifested also through the confusion of words. In Plato and Aristotle, as we know, the soul was the name of the mind and the entire spiritual life. See (Plato, 2004), 30d: “wisdom and mind cannot exist without soul”.

⁵² (M. Drăgănescu, 1993), p. 85.

⁵³ This social character is the link between the two problems and was demonstrated by Marx.

⁵⁴ See also (M. Drăgănescu, 1989), chapter 8: Biologia și psihologia în raport cu conștiința.

also as individual unique experience; World Two is the world of of mind, or mental states, ideas, and perceptions; World Three is body of human knowledge expressed in its manifold forms, or the products of the second world (K. Popper, 1972).

For this reason, the influences on the human come from all the parts of this complex and are grasped and studied by conventional and non-conventional disciplines: the inter-disciplinary manner pertains firstly to the non-conventional searching for the truth and after becomes conventional. As Descartes spoke about animal spirits, the gland and all the connections we already showed, as the present science re-questions the problems of the human unity beyond its ontological differences, by usefully using the machine metaphor. Descartes' ideas reveal to be *open*, as the nature of the spirit is: unfinished from its own substance (C. Noica, 1936).

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