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DESCARTES AND HENRY MORE ON THE BEAST-MACHINE—A TRANSLATION OF THEIR CORRESPONDENCE PERTAINING TO ANIMAL AUTOMATISM [1].

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The Background.

The correspondence between Descartes and More contains much that is instructive to students of these philosophers. Of special interest, however, is the controversy as to the nature of animals. Through its connections with other problems—metaphysical, theological, and scientific—it presents to us some of the major intellectual interests of the times.

The question, Do beasts possess souls or are they machines ?, did not, of course, originate with either Descartes or More. But Descartes' formulation of strict animal automatism aroused widespread opposition and defence among philosophers and litterateurs throughout the seventeenth and part of the eighteenth centuries [2]. It is rather difficult to pick up a general philosophical work of the period without finding some allusion to the topic, both in England and on the Continent.

Moreover, adherence to Descartes' principle of the beast-machine was considered the test of orthodox affiliation with his school, according

[1] From the Adam-Tannéry edition of Descartes (hereafter referred to as A.T.), v., extracts from Letters 531 [Dec. 11, 1648], 536 [Feb. 5, 1649], 544 [Mar. 5, 1649], 554 [Apr. 15, 1649]. The entire correspondence between More and Descartes, consisting of four letters of More, two of Descartes, and a fragment of a Descartes reply never finished (discovered after his death among his papers), was first published in 1657 by Claude Clerselier at Paris, in the first volume of *Lettres de Mr. Descartes*, Letters 66–73. In London it was included in *A Collection of several Philosophical Writings of Dr. Henry More*, 2nd edition, 1662, in folio.

This correspondence has never been translated into English to the knowledge of the author, except for small extracts in Tulloch (*Rational Theology and Christian Philosophy in England in the 17th Century*, ii, pp. 369–70) and in Burtt (*Metaphysical Foundations of Modern Physical Science*, pp. 131, 137, 138). The latter, however, quotes as source the French translation in the Cousin edition, x, pp. 178–297.

[2] In 1770 the Abbé Joannet wrote : " Quelqu'ancienne, quelqu'oubliée qu'on la suppose cette question n'est cependant encore, ni décidée, ni bannie des conversations. On écrit encore pour et contre le principe d'où partent les actions des bêtes ; et il est bien peu de jours, à la Campagne surtout, où l'on ne céde à l'occasion qu'elles fournissent d'en parler " (*Avis au Lecteur*, pp. ix, x, from *Les Bêtes mieux connues, ou Le Pour et Contre L'Ame des Bêtes, Entretiens par M. l'Abbé (Claude) Joannet*: Paris, chez Costard, 1770, 2 vols. in 1).

to the testimony of Daniel and Dilly [3]. Repeatedly, throughout his lifetime, Descartes advocated animal automatism. We find it suggested in embryonic form in the *Pensées* of the twenty-three-year-old Descartes, " La perfection absolue qu'on remarque dans certaines actions des animaux, nous fait soupçonner qu'ils n'ont pas de libre-arbitre " [4]. The theory takes definite shape in the *Discourse* and the replies to the objections appended to the *Meditations*, as well as throughout the philosopher's general correspondence. The More letters constitute one of the most complete and interesting accounts of the doctrine, and certainly the one couched in the most moderate terms [5].

Readers of More would naturally expect that he would take issue with Descartes on the latter's theory of the beast-machine. More, who kept the portrait of Descartes in his chamber [6], was one of the first to mention, teach, and propagate Cartesianism in England [7]. Upon the appearance of the first Clerselier volume in 1657 he writes to Lady Conway that he is prevented in his " designe concerning Descartes' letters " [8]. But the would-be editor of Descartes, albeit in agreement with the Cartesian doctrine on certain points, would naturally turn with aversion from the mechanization of any form of life, even animal life. For More, the Neo-Platonist, the universe was full of world-soul—seminal forms, in plants, animal souls, human souls, and the souls of angels. Thus, although he so enthusiastically admired Descartes, in 1648, as to write on the first page of his correspondence, " all the masters of the secrets of nature who have ever existed or now exist seem simply dwarfs or pygmies when compared with your transcendent genius ", the doctrine of animal automatism was more repugnant to him than any other feature of the Cartesian system [9]. Throughout More's writings a defence of the souls of brutes appears as a not infrequent theme. This very clash may be one of the reasons for More's later vehement revulsion against his former idol.

More seems to have been the first Englishman to take issue with Descartes on the latter's theory of the beast-machine. With the exception of Sir Kenelm Digby, who, as early as 1645, struck a good Cartesian stand

[3] Cited in the penetrating study of Professor Balz, *Cartesianism and the Animal Soul* in *Columbia University Studies in the History of Ideas*, 1935, iii, pp. 117–177.

[4] Foucher de Careil, *Œuvres inédites de Descartes*, p. 17.

[5] *Cf.* note (7) to the translation below.

[6] *Conway Letters*, edited by Dean Marjorie Nicolson, p. 334, Letter 208, More to Lady Conway, May 1671.

[7] For further development of this subject, see the excellent accounts in Dean Nicolson, *The Early Stage of Cartesianism in England* (*Studies in Philology*, 1929, vol. xxvi, no. 3, pp. 356–374), and Professor Sterling Lamprecht, *The Rôle of Descartes in Seventeenth Century England* (*Columbia University Studies in the History of Ideas*, 1935, iii, pp. 181–240).

[8] *Conway Letters*, p. 143, Letter 82 (May 11).

[9] *Cf.* Letter 531 below.

on the question[10], and Anthony Le Grand[11], the exponent of Cartesianism in England, English writers are aligned against strict animal automatism[12]. On the Continent the doctrine was to be extended to include human mechanism, with La Mettrie's *L'Homme-Machine*. The controversy may be termed the first modern battleground for the war between mechanists and vitalists.

MORE TO DESCARTES—Cambridge, December 11, 1648.
(A.T. v, Letter 531, p. 243, l. 15–p. 245, l. 14.)

" For the rest, my spirit, through sensitivity and tenderness, turns not with abhorrence from any of your opinions so much as from that deadly and murderous sentiment which you professed in your *Method*(1), whereby you snatch away, or rather withold, life and sense from all animals, for you would never concede that they really live. Here, the gleaming rapier-edge of your genius arouses in me not so much mistrust as dread when, solicitous as to the fate of living creatures, I recognize in you not only subtle keenness, but also, as it were, the sharp and cruel blade which in one blow, so to speak, dared to despoil of life and sense practically the whole race of animals, metamorphosing them into marble statues and machines.

" But let us examine, I pray, what it be that causes you to judge so severely of animals. To be sure, they are not able to speak, nor can they plead their cause before a judge, and since, that which does but aggravate their crime, they are satisfactorily provided with speech organs, as is apparent in magpies and parrots, hence you strip them of life and sense.

" Yet forsooth, how could it be that either parrots or magpies imitate our voices if they did not hear and perceive through their sense that which we say ? But, you would have it, they are ignorant of the meaning of those very sounds which they imitate in their prattling way. Still, why deny that they are quite aware of what they want, viz., the meal which by this device they acquire from their masters ? Wherefore they judge that they are begging for their food, since, thanks to such sounds,

[10] I should like to amend Prof. Lamprecht's statement in the work cited above to the effect that no one in England, except Le Grand, seems to have sided with Descartes in this controversy. Digby shows how " even those actions of beasts that seem to be formall acts of reason " are due to their bodily configuration and motions and to the heat of their passions. His language, as well as theory, is reminiscent of Descartes (*cf.* part I, chapters 36–38, in *Two Treatises : in the One of Which the Nature of Bodies ; in the Other, the Nature of Mans Soule is Looked into* : London, 1645).

[11] *De carentia sensus et cognitiones in brutis* : Norimbergae, 1679.

[12] Such men as Thomas Willis, John Locke, John Keill, John Ray, David Hartley, and David Hume, although expressing varying views on the question of the souls of brutes, are united in disliking the term *machine* as applied to animal life.

their desires are gratified. And otherwise, I ask, would the song-birds listen so attentively as they do if there were but a total void in their sense and reflexion? From whence that astuteness and sagacity of foxes and dogs? Why do threats and words restrain the ferocity of wild beasts? The famished dog, when he has furtively snatched a morsel, why does he steal off secretly as if conscious of his deed, and show joy to no one as he passes timidly and shyly in retreat, but with cringing lowered head pursue his way into the distance, suspiciously on guard lest he be punished for the crime committed? How could he do all this unless through an inner consciousness of his misdeed? There are a great number of similar anecdotes by which some endeavour to demonstrate that reason resides in brute animals [2]. This is evidence for the fact that the latter possess at the very least sense and memory. But it would be an infinite task to go on now weaving such tales. From them I know well that there are many stories in this pattern, so that it is hardly possible to deny the power and exceedingly subtle shrewdness of animals [3].

"But I perceive clearly what drives you to hold that beasts are machines. It is simply a way of demonstrating the immortality of our souls, which reasoning, since it assumes that the body is in no wise able to cogitate [4], concludes that wherever there is cogitation there must needs be substance quite distinct from body, and hence immortal. From whence it follows that brutes, if they cogitate, have annexed to themselves immortal substances.

"Nay but I beseech you, most discerning friend, since from this way of reasoning it is necessary to deprive living brutes of sense, or to bequeath to them immortality, why do you prefer to make of them inanimate machines rather than bodies activated by immortal souls? Especially since such a position, hardly harmonious with the phenomena of nature, plainly is unheard of until now [5]. The opposite view, forsooth, was established and approved among the wisest men of antiquity, as witness Pythagoras, Plato, and others. And certainly it would but bring the minds of all the Platonists to persist in their sentiment about the immortality of brutes, when such a distinguished genius as yours is reduced to this dilemma—that if it does not concede immortal souls to brutes, it necessarily makes of universal animal life insensible machines."

DESCARTES TO MORE—Egmond, February 5, 1649.
(A.T. v, Letter 537, p. 275, l. 31–p. 279, l. 3.)

"But to no prejudice are we all more habituated than to that which has persuaded us from earliest childhood that living animals think.

"No reason indeed moved us to this belief save that seeing that numerous parts of the animal body are not far different from ours in

external configuration and motion, and believing that in us there is but a single principle of motion, namely, the soul, which same substance moves the body and cogitates, we doubted not that just such a soul might be found in animals.

" However, after I had given heed that there are two different principles of our movements to be distinguished—viz., one which is plainly mechanical and corporeal, which depends upon the sole force of the animal spirits and the configuration of the various parts of the body, and which may be called the corporeal soul [6] ; the other incorporeal, that is to say, mind or, in other words, that soul which I defined as thinking substance (after this realization, I say)—I sought quite diligently whether animal movements arise from these two principles, or simply from one. When I had clearly perceived that all movement could originate from the one principle, that is to say, the corporeal and mechanical one, then I held for certain and proven that we can in no way demonstrate any rational soul in brutes. Nor do I tarry at the shrewdness and cunning of dogs and foxes, or at any other deeds performed by brutes for food, sex or fear. For I freely avow that I can most easily explain all those things as arising from the sole configuration of the parts of the body.

" However, although I hold for certain that it cannot be proven that any cogitation exists in brutes, I do not thereby judge that the absence of thought can be demonstrated, since the human mind can never penetrate into the inmost recesses of the animal being [7]. But after examining whatever seems most probable in this connection, I see no reason to claim cogitation for brutes, except that since they possess eyes, ears, a tongue and other sensory organs such as ours, it appears as if they feel as we do ; and since in our mode of feeling cogitation is included, then cogitation should be attributed to them also. Which reasoning, since it is exceedingly obvious, has impressed the minds of all men from earliest childhood. There are, however, other reasons much more numerous and far more convincing, but not so obvious to all, which plainly lead one to believe the contrary. Among them this one holds rank, that it is not so likely that all worms, gnats, caterpillars and the other animals be endowed with immortal souls, as that they move about after the fashion of machines.

" First of all, it is certain that in the bodies of animals, as in ours, there are bones, nerves, muscles, blood, animal spirits and other organs so disposed that they are capable of causing, by themselves and without any cogitation, all the motions which we observe in brutes. This is evidenced in convulsions when the bodily machine alone and involuntarily moves itself about often more vehemently and in more diverse ways than customarily with the help of the will.

" Secondly, since art is the imitator of nature, and since man is capable of fabricating various automata in which there is motion without any cogitation, it seems reasonable that nature should produce her own automata, far more perfect in their workmanship, to wit, all the brutes [8]; especially since we acknowledge no reason why cogitation also must needs be present wherever there is that configuration of parts of the body which we see in animals; and hence it is more astonishing that some mind may be discovered in every human body than that none may be found in any of the brutes.

" But of all the reasons which persuade us that beasts are destitute of cogitation, the most important, in my opinion, is that although among those of one species, just as among men, there are some more perfect than others, as one may see in the case of horses and dogs, whereof some learn much more readily than others what they are taught; and although all most easily make known to us by voice or other bodily movements their natural impulses, such as wrath, fear, hunger, and the like, notwithstanding never yet has it been observed that any brute animal became so perfected as to employ true language, that is to say to indicate either by voice or signs that which could be accounted for solely by cogitation and not by natural impulse. For language is the one certain indication of latent cogitation in a body, and all men use it, even the most stupid and mentally deranged, and those deprived of their tongue and vocal organs, whereas on the other hand not a single brute speaks, and consequently this we may take for the true difference between man and beast.

" I omit here, for the sake of brevity, all the other reasons for depriving brutes of cogitation. It must nevertheless be remarked that I speak of cogitation, not of life or sense; for to no animal do I deny life, inasmuch as that I attribute solely to the heat of the heart; nor do I deny sense in so far as it depends upon the bodily organism [9]. And thus my opinion is not so much cruel to wild beasts as favourable to men, whom it absolves, at least those not bound by the superstition of the Pythagoreans, of any suspicion of crime, however often they may eat or kill animals.

MORE TO DESCARTES—Cambridge, March 5, 1649.
(A.T. v, Letter 544, p. 309, l. 21–p. 311, l. 12.)

" ' *But to no prejudice, are we all more habituated, etc.*'

" Which is absolutely undisputed, as far as I am concerned; for I feel that I am in no wise able to free myself from the snares of this prejudice.

" ' *For I confess that I can most easily explain all those things as arising from the sole configuration of the parts of the body.*'

" In truth, a happy and delightful task ! If you prove it (and I believe that, as far as human capacity is able, you will prove it ; in this case in the fifth or sixth parts of your Physics which, as I hear, you have almost completed and perfected, so that I am eagerly awaiting them and earnestly beg that they see the light as soon as possible, or rather that we, in them, see the further light of nature—but I return to the subject). I repeat, if you prove this, I recognize that you have demonstrated that none can show that a soul resides in live beasts. But meanwhile you have not yet demonstrated, and you yourself admit it, that there is no soul in brutes, nor are you able in any way so to demonstrate.

" ' *Except that since they possess eyes, ears, etc.*'

" The best proof, in my opinion, is that they watch over and preserve themselves with so much acuteness, as I could illustrate, if there were time, by anecdotes as true as they are amazing. But I take it that you have come across similar stories ; although mine are not to be found in any books.

" ' *That it is not so likely that all worms, gnats, caterpillars, etc.*'

" Unless perchance we are to imagine souls so constituted—vital forces [10] of the world, as Ficinus calls them—that they are in a sense like sand and dust ; and out of a storehouse of spirits an almost infinite multitude is always slipping, by a fatal impetus, down into duly prepared matter. But I agree that this is easier to talk about than to prove [11].

" ' *That is to say to indicate either by voice or signs, etc.*'

" Do not dogs nod ' yes ' with their tails, as we do with our heads ? Do they not often by little barks beg for something to eat at table ? Nay, more, sometimes touching their master's elbow with their paw, as respectfully as they can, they remind him by this fawning sign that he has forgotten them.

" ' *Even the most stupid and mentally deranged, etc. Whereas, on the other hand, not a single brute, etc.*'

" Nor do any babies, at least for the space of a few months, although they may cry, laugh, grow angry, etc. Nevertheless, you continue to believe, I take it, that babies are alive and that they possess rational souls."

DESCARTES TO MORE—Egmond, April 15, 1649.
(A.T. v, Letter 554, p. 344, l. 15–p. 345, l. 8.)

" In Reference to the Last Instances :

" ' *This, if you state, etc.*'

" I am not sure that I will ever bring to light the rest of my philosophy, since it depends on numerous experiments, for the accomplishment of which I know not if I shall be granted the opportunity ; but I hope to put out this summer a short treatise on the passions [12], from which it will be apparent how in our very selves all movements of our members which accompany our passions spring from, not the soul, as I see it, but simply the bodily machine.

" When, however, ' dogs nod yes with their tails ', etc., these are merely motions which accompany the passions, and as such, I believe, are to be accurately distinguished from language, which alone is certain proof of latent cogitation in the body.

" ' *Nor do any babies, etc.*'

" Babies and brutes are not the same thing : nor would I judge that babies are endowed with mind unless I perceived that they are of the same nature as adults ; brutes, however, never grow up to the level where any certain sign of cogitation is to be found in them."

Notes to the Letters.

(1) The first printed exposition of Descartes' beast-machine hypothesis, with its analogy to a clock, is formulated in his *Discours de la Methode*, 5e partie. Descartes had written that speech and reason distinguish men from brutes. As for the dexterity of certain animals, " it rather shows that they have no reason at all, and that it is nature which acts in them according to the disposition of their organs, just as a clock, which is only composed of wheels and weights, is able to tell the hours and measure the time more correctly than we do with all our wisdom " (Translation from the Haldane and Ross edition of Descartes, i, p. 117.)

(2) Besides the writers of antiquity, some of whom More mentions later, he may have in mind the " moderns ", who claimed reason for beasts—Lorenzo Valla, Rorarius, Etienne Pasquier, Montaigne, and Charron.

(3) The words " power " (*vim*) and " shrewdness " (*acumen*) do not commit More as would the term " reason ". As a matter of fact, More himself, in his later writings, agrees with Descartes that animals are not possessed of reason. He writes in his *Appendix to the foregoing Antidote* : " It is a mere fallacy to argue that brutes, because they do such things as are Reasonable or Mathematical, therefore they do them from notions of Logick or Mathematicks . . . " (*A Collection of Several Philosophical Writings of Dr. Henry More*, 4th edition, London, 1712, chap. ii, 8, p. 184). Again, in his *Immortality of the Soul*, he claims that brutes are devoid of " free and reflexive reason " (Bk. iii, chap. xiii, 9).

It is of interest to note here that his argument is based on the Cartesian criterion of speech ! " For if they had any such Principle (free and reflexive reason)," he states, " some of them would be able to speak. The want of which power is the only plausible presumption for *Des-Cartes* his conceit of their being mere *Machina's* " (*loc. cit.*).

(4) *Res cogitans* Descartes defines as follows : " It is a thing which doubts, understands (conceives), affirms, denies, wills, refuses, which also imagines and feels " (*Meditations*, ii, in Haldane and Ross, i, p. 153.)

(5) A doctrine of the beast-machine had been exposed as early as 1544 in *Antoniana-Margarita*, a book written by a Spanish doctor, Gomez Pereira. The work was never read by Descartes, according to his own testimony, and the assurance of his biographer, Baillet. Evidently More was not acquainted with it at all. He could, however, have seen references to animal automatism in St. Augustine, *De Quantitate animæ* (cap. 30), or among the writings of antiquity, for the Stoics and Cynics, as well as Lucretius, favoured mechanism.

(6) Descartes is not accustomed to write the expression *anima corporea*. The old Pythagorean-Platonic-Aristotelian classification of a tripartite soul was still being used in Descartes' day. But " the father of modern philosophy " prefers to reserve the word *anima* for the rational soul alone. He writes to Regius that he does not consider the " vim vegetandi et sentiendi " in animals worthy of the appelation *anima*, in the same way that *mens* is termed soul in man (A.T. iii, pp. 369–370, Letter 239, May 1641.)

In fact, because of the confusion about the word *soul*, Descartes prefers to write " mind " whenever possible. " But I, perceiving that the principle by which we are nourished is wholly distinct from that by which we think, have declared that the name soul when used for both is equivocal ; and I say that when *soul* is taken to mean the *primary actuality* or *chief essence* of man, it must be understood to apply only to the principle by which we think, and I have called it by the name *mind* as often as possible in order to avoid ambiguity ; for I consider the mind not as part of the soul, but as the whole of that soul which thinks " (*Reply to Objections*, v, in Haldane and Ross, ii, p. 210.) It is because of this identification of soul with mind that Descartes rephrases the question of whether or not beasts have souls by asking whether or not they reason.

(7) Contrast the moderation of this statement with the earlier expression of Descartes' views in his *Reply to Objections*, vi : " Not only have I asserted that plainly the brutes do not possess thought, as is there assumed, but I have given a most stringent proof of this, a proof which no one has hitherto refuted " (Haldane and Ross, ii, p. 244).

(8) Descartes includes the teleologic argument in his defence of mechanism. Nature, or God creating Nature, is quite capable of having produced the animal machine as well as the bodily machine. The highly organized perfection with which these machines function indicates the extent to which Providence looks after its creatures.

(9) Adversaries of Descartes, such as More, often claim that he denies sensation to brutes. But, as we see here, he grants them a kind of purely corporeal unconscious sensation. We must remember that in the Cartesian theory of visual sensation as propounded in *La Dioptrique*, *Le Traité de l'Homme*, and later by Pardies, there occurs in the sensory organ an image of the object which is then, but in man alone, the occasion for its mental counterpart.

Consciousness, which is the essence of the *cogito ergo sum*, and which characterizes man's rationalism, is fatally wanting among beasts.

The whole question of suffering is thus involved, to become an important issue in the controversy. Descartes believes that animals do not feel pain. He writes to his friend Mersenne, June 11, 1640 : " Ie n'explique pas sans ame le sentiment de la douleur ; car, selon moy, la douleur n'est que dans l'entendement ; mais i'explique tous les mouuemens exterieurs qui accompagnent en nous ce sentiment, lesquels seuls se trouuent aux bestes, et non la douleur proprement dite " (A.T. iii, p. 85, Lettre 192).

Some of the opposition to the Cartesian beast-machine, especially from non-philosophic quarters, was based on the alleged cruelty of later Cartesians in their treatment of animals. Malebranche was accused of such inhumanity in the *Mémoires de l'abbé Trublet sur Fontenelle* (2nd edition, Amsterdam, 1759, p. 115).

John Ray cites as evidence against animal automatism the fact that the poor creatures do suffer, as we know by their " doleful Significations " when they are beaten or tormented. He goes on to quote Scripture : "A good Man is merciful to his Beast " (*Prov.* xii, 10). By condemning cruelty to animals, which could not exist if they were machines, the Bible admonishes us that they are not (*The Wisdom of God manifested in the works of the Creation* : London, 1722, part i, pp. 54–56).

(10) " *Vitæ mundi* " is rendered here " vital forces of the world ", out of respect for the classical tradition which distinguishes between *vita* and *anima*. It is obvious, however, that More and Ficino denote by this phrase that which was more commonly termed *anima mundi*. For their use of the plural, we must remember that both of these thinkers were pluralists in their conception of soul in the universe (*cf.* Ficino, *In Convivium Platonis de amore commentarium*, i, 2 ad fin. ; iv, 4 ; vi, 15).

More, by his natural allusion to Ficino's expression *vitæ mundi* perhaps betrays, all unconsciously, his own conception of soul, and with it the fundamental point at issue between him and Descartes. The latter, as we have seen, thinks of soul as *mens* or mind. More, however, means by soul *vita* or life. He defines the animal soul as that very " *vim vegetandi et sentiendi* " which Descartes scorned to call soul (*cf.* note 6, *supra*). " A Subject, therefore, from whence is both Vegetation and Sensation ", writes More, " is the general notion of the Soul of a Brute " (*Immortality of the Soul*, Bk. i, chap. viii, 4).

The identification of *vita* with *anima* is not peculiar to More. See, for instance, Agrippa, who defines the *anima mundi* as " vita quædam unica, omnia replens, omnia perfundens, omnia colligens et connectens, ut unan reddat totium mundi machinam " (*De occ. phil.*, ii, 57). Indeed, if we go back to Aristotle's *περὶ ψυχῆς*, the source of all classical discussion on this point, we see that the Stragyrite's analysis of the vegetative and sensitive *ψυχή* is identical with what we should call today the life or vital principle of an organism. It is thus that he defines the difference between the *ἔμψυχον* (animated) and *ἀψύχον* (inanimated) as lying in " eo quod vivit " (*De Anima*, ii, 2, 2). But since Aristotle used the same word *ψυχή* to mean *νοῦς*, or rational soul, his translators were confronted with a problem : and *vita* or *anima* were used to a certain extent interchangeably for soul. Modern translations of the *περὶ ψυχῆς* bear the titles *De l'Ame*, *Uber die seele*, or *On the Vital Principle*, *On the Principle of Life*.

(11) More was indebted for his theory of world-soul to Marsilio Ficino,

who seems to have combined elements from Plato and Plotinus (*cf. Timæus*, 30, 34 ; *Enneads*, v, 1, 2, and vi, 4, 12), both of whom he translated into Latin. More adopts world-soul as a weapon against the complete mechanization of nature. The soul of the world represents the vicarious power of God on earth, acting as an intermediary, just as the animal spirits serve as intermediaries between man's soul and his body. This world-soul possesses life, but not reason. Although everywhere manifest, it is not a unity, as with Agrippa. It is rather a multitude of " Spiritual Essences " (*Immortality of the Soul*, Bk. iii, chap. xvi, 9). The Spirit of Nature, which is synonomous with the soul of the world (*cf. op. cit.*, Bk. iii, chap. xii, 5), chooses from an array of pre-existing souls the fitting one to place in each material body. " The most notable of those offices that can be assigned to *The Spirit of Nature* ", writes More, " is the Translocation of the Souls of Beasts into such matter as is most fitting for them " (*op. cit.*, Bk. iii, chap. xiii, 10). " To place " is not a figure of speech when referring to these souls, for all soul is extended, according to More.

We note that More does *not* believe in the transmigration of human souls into animal bodies.

(12) Descartes had been working since 1645 on his *Traité des Passions de l'Ame*, which appeared in November 1649, at Amsterdam.

THE IMPLICATIONS.

> "Ainsi, quand même la découverte du principe qui produit les mouvemens des brutes seroit peu essentielle à l'homme (peu lui importe en effet, la connoissance isolée du pourquoi et du comment elles agissent) vous comprenez cependant que cette discussion peut devenir très intéressante par les accessoires, et vous conviendrez sûrement après la lecture de ces Entretiens, qu'il n'est ni indifférent, ni sans conséquence, de s'attacher, par principes, à l'hypothèse de l'ame des bêtes. (*Avis au Lecteur*, p. xxx, in Joannet, *op. cit.*)

As so often happens in disputes, neither More nor Descartes can see things through the other's eyes, and both parties end up at the place from which they started. Be that as it may, for us, at any rate, the controversy is not fruitless.

In the first place, it is to be observed that More does not try to refute his opponent's argument that the weight of evidence tends to show that thought is lacking in brutes. On this point, at least, More sides with Descartes. Indeed, More would have been as horrified as his French correspondent at the suggestion that beasts possess immortal souls on a par with man's. In his *Psychathanesia*, he writes :

> " Soul sensitive, I'll call't form bestiall,
> It makes a beast added to plantall sperm ;
> Adde rational form, it makes a man as men affirm."
>
> Bk. I, Cant. 2, 25.

and again :

> " This was the Image of the highest God,
> Which brutes partake not of . . . "
>
> *Ibid.*, 19.

Nevertheless, this single point of agreement by no means settled the quarrel; for More, unlike Descartes, does not identify the realm of soul with thought [13]. A difference of definition stands as an unbridgeable chasm between the two opponents.

The controversy between mechanists and vitalists is still alive today. But the inquiry has assumed a more scientific nature and, we strongly suspect, it concerns itself more disinterestedly with animals than it did the seventeenth century. The debate was of importance to men then because of " la liaison estroite, que ce point particulier a avec les principaux fondemens de leur Métaphysique et de leur Physique " [14]. Dilly does not mention its theological significance, for his was still an age that took for granted the mingling of theology with everything else. But we can see that the theological element was in control. It is in the eighteenth century that the controversy begins to shake itself free from the weight of theological considerations.

From the foregoing Correspondence we may gather that the dispute involves implications in three fields.

A. METAPHYSICAL.

Descartes' dualism is, of course, at the basis of his doctrine of animal mechanism. Disagreement with his rigid cleavage between matter and mind, as well as with his definitions of the two substances, would readily entail disagreement with his conclusion about the nature of brutes. More does not accept the Cartesian identification of extended substance with matter, soul with thought. For him, spirit is extended and matter " sentient ". His mystical world-soul is then fundamentally, or shall we say metaphysically, at variance with the Cartesian dichotomy. No wonder he disagrees with Descartes about animals !

B. THEOLOGICAL.

However, it must not be supposed that Descartes' conclusion about beast-machines follows necessarily from his first premise. His second premise, that animal processes are all corporeal, could be, and was, changed by unorthodox Cartesians such as Bouillier and others [15].

Whatever supplementary reasons may have induced Descartes to accept the above-mentioned premise and, with it, his conclusion, the theological neatness of the doctrine of animal mechanism could not but appeal to him. The theory shelves the old discussion about brute souls and their place in the hierarchy of soul. Moreover, and herein lies its chief merit, it elevates man above the beasts and strengthens proof of the immortality of the soul. To the partisans of the brute-soul it retorts : (1) You will have to grant, as More did (Letter 531, above) that beasts, if they cogitate, have immortal souls. That would place man and beast on an equal plane, which is absurd and heretical. (2) But if beast-souls are mortal, then that which is soul is subservient to the body, not outlasting it. This is contrary to the essence of soul. And is it not a contradiction in terms to speak of mortality and soul in the same breath ? (3) Lastly, to those who would claim souls for brutes, the mechanists argue : " If animals have soul, they suffer. But suffering is the punishment for

[13] *Cf.* note (10) to the Correspondence.

[14] Preface in Dilly, *Traité de l'ame et de la connoissance des betes*, etc., Amsterdam, 1691.

[15] *Cf.* Balz, *op. cit.*

original sin. In that case, animals suffer unjustly, and your hypothesis endangers the dogma of the perfection of the Creator."

Bayle could well write, " le sentiment de Mr. Descartes . . . est d'ailleurs très-avantageux à la vraie foi et c'est l'unique raison qui empêche quelques personnes de s'en départir " [16].

Here it may be asked—are not the views of one as concerned with the welfare of religion as More compatible with Christian doctrine ? If he could not show to the satisfaction of his opponents that they were, at least he could have drawn from the common arsenal the deadly weapon of the cry " heresy ". The opponents of automatism (not More, but others who made a stronger case) could point out the latent danger of extending automatism to the realm of human beings. The more one showed the highly organized perfection of the bodily machine, the easier it became to take the jump and proclaim that psychological processes in man and beast consist only of physiological activity. The camel in the form of a machine, at first admitted conditionally, was to crowd out the soul from the tent of the body. Descartes succeeded in getting animism out of physical nature—the eighteenth century materialistic mechanists swept all soul out of the universe. Although Descartes defends himself vigorously from the accusations that his mechanism would lead to materialism [17], these accusations were to be repeated by Daniel, Bayle, Bouillier, and others, until, finally, La Mettrie was to claim descent from Descartes. It is not fair to score a master for crimes committed in his name. Still, it must be admitted that, historically, if not logically, Cudworth was not unjustified when he wrote that the Cartesians " have an undiscerned tang of the mechanically atheistick humour hanging about them " [18].

C. Scientific.

But besides theological convenience, there was a physiological and psychological approach as well to the hypothesis of the beast-machine. Descartes' point of departure for " la bête-machine " was " la machine du corps ". The theory develops from his mechanistic physiology (which in turn grew out of his physics). As he explains in his *Discourse*, he had in his early first draft of the *Traité du Monde*, written in his youth, formulated a complete universal system. During the century of experimental work in physiology behind Descartes, various bodily processes had been shown to function involuntarily (digestion, respiration during sleep, the supposed passage of the animal spirits through the tubes of the nerves, and the circulation of the blood). Descartes, in a piercing vision, saw man's body, too, as part of the universal pattern of nature, complying with her mechanical laws of movement. If man's body was a machine, so certainly was the animal body. In the absence of evidence for a rational soul in beasts, man had a right to consider them automata, especially in view of the fact that the " sole configuration of the parts of the body " would be sufficient cause to explain all animal behaviour.

But there were other problems in the air which might have led Descartes to an examination of the nature of animals. As Professor Brett points out [19], the preoccupation of many centuries with optics and dioptrics lead in the

[16] *Dictionnaire historique et critique*, Art. Rorarius.

[17] Made by a group of theologians and philosophers (*Objections*, vi).

[18] *The True Intellectual System of the Universe*, 1678, p. 178.

[19] *History of Psychology*, ii, pp. 180–81.

seventeenth century to interest in a theory of vision and sensation. How limit the rôle of sensory organs, animal spirits, and mind in the process of sensation? Descartes, in his analysis, would naturally confront the query—what is the difference between human and animal (or mechanical) perception? Along with questions of consciousness, there were thereby involved inquiries into the nature of instinct and speech. Subsequent writings in England and on the Continent treat again and again of these topics.

Eighteenth-century thought was to be marked, particularly in England, by its interest in a theory of knowledge from a psychological point of view. What is the understanding, what is instinct, and what is reason? What is the relationship between reason and sensation? To what extent can mechanism be applied to human psychology? These and other allied matters crop up in the writings of those who engage in the beast-machine controversy [20].

To sum up, then, we may say that the whole dispute had a distinctly stimulating influence on the development of psychology. Its significance can be seen as well in its bearings on the history of medicine and biology. Descartes' use of the experimental method in physiology [21] naturally lead in the direction of mechanistic views, as can be seen in the medical works of Borelli and Franciscus Sylvius (de la Boë). Traces of this mechanism can be perceived in the eclecticism of Boerhaave. The latter's pupil, de La Mettrie, and d'Holbach gave a powerful impetus to the general movement of mechanism as a guide to human life.

Despite the sweep of the mechanistic philosophy, to which the Newtonian system added tremendous power, a marked reaction set in. Leibniz tried to combine a mechanistic view with a generally idealistic philosophy. But the strong swing in favour of vitalism may be ascribed to Stahl, whose influence extended to France through the work of Barthez and the Montpellier School [22]. By the close of the eighteenth century, we find the great philosopher Kant rejecting mechanism in the biological field, though accepting it as basic in the physical realm. In France the work of Bichat marks the triumph of vitalism.

[20] Among those not already mentioned are Gassendi, Perrault, Régis, Cordemoy, La Forge, La Chambre, Chanet, Bougeant, Du Hamel, Guer, Fontenelle, Buffon, Leibniz, Geulincx, Malebranche, Condillac, Bonnet, Gerdil and Le Roy.

[21] He had, of course, notable predecessors, among them the Paduan School and Harvey.

[22] *Cf.* Blondin, *Œuvres Médico-Philosophiques et Pratiques de G.-E. Stahl* (Paris: J. B. Baillière, 1863), ii, *Preface*, and *Dissertation du Mécanisme et de l'Organisme.*