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## Two Views of Soul: Aristotle and Descartes\*

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In the fourth century B.C. Aristotle rejected the tripartite psychology of Plato in favor of his own hylomorphic theory of the body-soul relationship. In the seventeenth century A.D. René Descartes rejected the prevailing Aristotelian psychology in favor of what he considered a more scientific notion of body controlled by an immortal, spiritual soul or mind. Comparisons between the Platonic and Aristotelian views of soul, their similarities and differences, are commonplace, going back to the works of Aristotle himself. Comparisons between the Aristotelian and Cartesian views are perhaps not so commonplace. In this paper I should like to draw attention to a few of their similarities and differences. I cannot claim to add anything new to our knowledge of either Aristotle's or Descartes' views of soul. But perhaps the juxtaposition of the two may highlight some interesting features of both.

What first attracted my interest to a possible comparison was the realization that, unlike Plato, both Aristotle and Descartes shared the view that, first, there is but a *single* soul and, second, that this soul operates principally through a single specific bodily organ. Given his own understanding, I believe Descartes could agree totally with Aristotle's statement that the soul's "essential nature cannot be

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corporeal; yet it is also clear that soul is present in a particular bodily part, and this one of the parts having control over the rest":<sup>1</sup>

δῆλον ὅτι οὐχ οἷον τ' εἶναι σῶμα τὴν οὐσίαν αὐτῆς, ἀλλ' ὁμοῦς ὅτι γ' ἐν τινι τοῦ σώματος ὑπάρχει μορίῳ φανερόν, καὶ ἐν τούτῳ τινὶ τῶν ἐχόντων δύναμιν ἐν τοῖς μορίοις. (*Parva Naturalia* 467b13–16)

For Aristotle, as we know, that particular controlling organ is the heart. In his treatise *On Memory*, for example, Aristotle declares that in blooded animals, including man, "the source and control center (ἀρχή)<sup>2</sup> of both the sensitive and nutritive soul must be in the heart":

ἀνάγκη καὶ τῆς αἰσθητικῆς καὶ τῆς θρεπτικῆς ψυχῆς ἐν τῇ καρδίᾳ τὴν ἀρχὴν εἶναι. (*PN* 469a5–7)

Again, in the *De Partibus Animalium*, the heart is designated as the control center of sense perception and emotional response: "For it is in the front and center of the body that the heart is situated, in which we say is the source and control center of life and of all motion and sensation":

ἡ μὲν γὰρ καρδία ἐν τοῖς ἔμπροσθεν καὶ ἐν μέσῳ κείται, ἐν ᾗ τὴν ἀρχὴν φαμεν τῆς ζωῆς καὶ πάσης κινήσεως τε καὶ αἰσθήσεως. (*De Partibus Animalium* 665a11–13)

Later, Aristotle adds: "Moreover, the motions of pain and pleasure, and generally of all sensation, plainly have their source in the heart, and find in it their ultimate termination":

ἔτι δ' αἱ κινήσεις τῶν ἡδέων καὶ τῶν λυπηρῶν καὶ ὅλων πάσης αἰσθήσεως ἐντέθεν ἀρχόμεναι φαίνονται καὶ πρὸς ταύτην περαίνουσαι. (666a12–13)

In the *De Anima*, in a context emphasizing the bodily aspects of psychic states, Aristotle specifies: ". . . We may regard anger or fear

<sup>1</sup> The following are the sources for the text of the Greek, French and Latin passages quoted. From Aristotle: *De Anima*, edited with introduction and commentary by Sir David Ross (Oxford 1961); *Parva Naturalia*, edited with introduction and commentary by Sir David Ross (Oxford 1957); *De Generatione Animalium* (*Generation of Animals*, with an English translation, by A. L. Peck [Cambridge, Mass. 1953]); *De Partibus Animalium* (*Parts of Animals*, with an English translation, by A. L. Peck [Cambridge, Mass. 1955]); *De Motu Animalium*, with translation, commentary, and essays by Martha Craven Nussbaum (Princeton 1978). From Descartes: *Oeuvres de Descartes*, publiées par Charles Adam et Paul Tannery (Paris 1899) (= A-T).

The translations from Aristotle are adapted from Ross, Peck and Nussbaum, and in the case of the *De Anima* from R. D. Hicks, *Aristotle: De Anima* (Cambridge 1907). The translations from Descartes are from *The Philosophical Works of Descartes*, rendered into English by E. S. Haldane and G. R. T. Ross, 2 vols. (Cambridge 1967) (= H-R).

<sup>2</sup> On the notion of ἡ ἀρχή as "source and control center," see *Metaphysics* 1012b34–1013a14.

as such and such movements of the heart, and thinking (*διανοεῖσθαι*) as such and such another movement of that organ. . . .<sup>3</sup>

. . . οἶον τὸ ὀργίζεσθαι ἢ φοβεῖσθαι τὸ τὴν καρδίαν ὡδὶ κινεῖσθαι, τὸ δὲ διανοεῖσθαι ἢ τι τοιοῦτον ἴσως ἢ ἕτερόν τι. . . . (408b8–9).

Clearly, then, for Aristotle the psychic functions of sense perception, consciousness of pleasure and pain, emotional response, initiation of external movement, even thinking or reasoning (*διανοεῖσθαι*) are centered in the heart, the control center of the human organism.

For Descartes, the soul is principally present in, and operates through, the *pineal gland*, which he situates inside the cavity of the brain. In his treatise *On the Passions of the Soul*, for example, describing how soul and body act on one another, Descartes begins: "Let us then conceive here that the soul has its principal seat (*son siège principal*) in the little gland which exists in the middle of the brain" ("Concevons donc icy que l'ame a son siège principal dans la petite glande qui est au milieu du cerveau . . .", *Passions*, Art. XXIV; H-R I, 347; A-T XI, 354). Again, he refers to the pineal as "the small gland which is the main seat of the soul" (" . . . la petite glande qui est le principal siège de l'ame, . . ." *ibid.*) and maintains that "the soul cannot have any other seat in all the body than this gland wherein to exercise its functions immediately" (" . . . l'ame ne peut avoir en tout le corps aucun autre lieu que cette glande, où elle exerce immédiatement ses fonctions, . . ." *Passions*, Art. XXXII; H-R I, 346; A-T XI, 352).

A closer examination of the psychology of both Aristotle and Descartes reveals, of course, that neither conceived the soul as locally confined to a single organ, but united with the *entire* body. In the *De Anima*, you recall, Aristotle defines soul as "the first actuality of a natural body furnished with organs:"

ἐντελέχεια ἢ πρώτη σώματος φυσικοῦ ὀργανικοῦ (412b5–6).

Then, after comparing the unity of soul and body to that of eyesight and eye, he continues: "What has been said of the part must be understood to apply to the whole living body; for as sensation of a part of the body is to that part, so is sensation as a whole to the whole sentient body as such":

δεῖ δὴ λαβεῖν τὸ ἐπὶ μέρος ἐφ' ὅλου τοῦ ζῶντος σώματος. ἀνάλογον γὰρ ἔχει ὡς τὸ μέρος πρὸς τὸ μέρος, οὕτως ἢ ὅλη αἰσθησις πρὸς τὸ ὅλον σῶμα τὸ αἰσθητικόν, ἢ τοιοῦτον. (412b22–25; cf. 414a14–19)

Since the soul is the first actuality of a natural body *furnished with*

<sup>3</sup> Oxford translation, and cf. Hicks, p. 274 *ad* b9; also 403a31, 432b31.

*organs*, however, it can be conceived to be especially present and operating in a *principal* or controlling organ of the body, as is the case for the heart in Aristotle's psychology.

Likewise, Descartes maintains clearly that

the soul is really joined to the whole body, and . . . we cannot, properly speaking, say that it exists in any one of its parts to the exclusion of the others, because it is one and in some manner indivisible.

. . . l'ame est veritablement jointe à tout le corps, & . . . on ne peut pas proprement dire qu'elle soit en quelcune de ses parties, à l'exclusion des autres, à cause qu'il est un, & en quelque façon indivisible . . . (*Passions*, Art. XXX; H-R I, 345; A-T XI, 351).

However, he also maintains:

It is likewise necessary to know that although the soul is joined to the whole body, there is yet in that a certain part in which it exercises its functions more particularly than in all the others. . . .

Il est besoin aussi de sçavoir que, bien que l'ame soit jointe à tout le corps, il y a neantmoins en luy quelque partie, en laquelle elle exerce ses fonctions plus particulièrement qu'en toutes les autres. (*Passions*, Art. XXXI; H-R I, 345; A-T XI, 351-52)

That part is, of course, the pineal gland.

How do Aristotle and Descartes conceive the soul as operating especially in or through this central organ? The process is, of course, far too complex for detailed description here. However, the sensory-motor mechanism in Descartes can be summarized broadly in his own words as follows:

Let us then conceive here that the soul has its principal seat in the little gland which exists in the middle of the brain, from whence it radiates forth through all the remainder of the body by means of the animal spirits, nerves, and even the blood. . . .

Concevons donc icy que l'ame a son siège principal dans la petite glande qui est au milieu du cerveau, d'où elle rayonne en tout le reste du corps par l'entremise des esprits, des nerfs, & mesme du sang. . . . (*Passions*, Art. XXXIV; H-R I, 347; A-T XI, 354)

This gives us the general structure. He then provides for reflex or instinctive reaction as follows:

And recollecting what has been said about the machine of our body, i.e., that the little filaments of our nerves are so distributed in all its parts that on the occasion of the diverse movements which are there excited by sensible objects, they open in diverse ways the pores of the brain, which causes the animal spirits contained in these cavities to enter in diverse ways into the muscles. . . .

Et nous souvenant de ce qui a esté dit cy-dessus de la machine de nostre corps, à sçavoir que les petits filets de nos nerfs sont tellement distribuez en toutes se parties, qu'à l'occasion des divers mouvemens qui y sont excitez par les objets sensibles, ils ouvrent diversement les pores du cerveau, ce qui fait que les esprits animaux contenus en ses cavitez entrent diversement dans les muscles. . . . (*Pass.* XXXIV; H-R I, 347; A-T XI, 354)

Sense perceptions from external and internal stimuli are accounted for thus:

. . . let us here add that the small gland which is the main seat of the soul is so suspended between the cavities [of the brain] which contain the [animal] spirits that it can be moved by them in as many different ways as there are sensible diversities in the object; but that it may also be moved in diverse ways by the soul whose nature is such that it receives in itself as many diverse impressions,—that is to say, that it possesses as many diverse *perceptions* as there are diverse movements in this gland.

Adjoustrons icy que la petite glande qui est le principal siège de l'ame, est tellement suspenduë entre les cavitez qui contiennent ces esprits, qu'elle peut estre meüë par eux en autant de diverses façons, qu'il y a de diversitez sensibles dans les objets; mais qu'elle peut aussi estre diversement meüë par l'ame, laquelle est de telle nature qu'elle recoit autant de diverses impressions en elle, c'est à dire, qu'elle a autant de diverses perceptions, qu'il arrive de divers mouvemens en cette glande. (*Pass.* XXXIV; H-R I, 347; A-T XI, 254–55)

Motor responses are provided for as follows:

Reciprocally, likewise, the machine of the body is so formed that from the simple fact that this gland is diversely moved by the soul . . . it thrusts the [animal] spirits which surround it towards the pores of the brain, which conduct them by the nerves into the muscles, by which means it causes them to move the limbs.

Comme aussi reciproquement la machine du corps est tellement composée, que de cela seul que cette glande est diversement meüë par l'ame . . . elle pousse les esprits qui l'entourent vers les pores du cerveau, qui les conduisent par les nerfs dans les muscles, au moyen de quoy elle leur fait mouvoir les membres. (*Pass.* XXXIV; H-R I, 347; A-T XI, 355)

The process is that sense impulses, transmitted through the nerves, are mediated by "animal spirits" to the pineal gland, where they cause the conscious experience of sense perception in the soul. Likewise, the soul can move the pineal gland, setting up movement of the surrounding "animal spirits" which is thus transmitted to nerves and muscles as motor impulses.

In this the critical role of the pineal gland and what Descartes calls "animal spirits" must be evident. He goes on to describe how the visual perception of an object takes place through images in the optic nerves ultimately transmitted by the animal spirits in the surrounding brain cavities to the pineal gland which, he says, "acting immediately upon the soul, causes it to see" ("agissant immediatement contre l'ame, luy fait voir . . .," *Passions*, Art. XXXV; H-R I, 347-48; A-T XI, 356). Awareness of interior passion also,—fear, for example—comes about by reaction of the animal spirits "to give movement to the gland by which fear is placed in the soul" ("donner le mouvement à la glande, par lequel la peur est mise dans l'ame . . .," *Passions*, Art. XXXVIII; H-R I, 349; A-T XI, 358).

Descartes conceives these animal spirits as "a certain very subtle air or wind" (" . . . un certain air ou vent tres-subtil, qu'on nomme les esprits animaux . . .," *Passions*, Art. VII; H-R I, 334; A-T XI, 332); and again, "material bodies of extreme minuteness. . . they move very quickly like the particles of the flame which issues from a torch" (" . . . ce sont des corps tres-petits, & qui se meuvent tres-viste, ainsi que les parties de la flame qui sort d'un flambeau . . .," *Passions*, Art. X; H-R I, 336; A-T XI, 335); elsewhere, "a very subtle wind, or rather a flame which is very pure and very vivid" (" . . . un vent tres subtil, ou plutost comme une flame tres pure & tres vive . . .," *Discourse on Method* V; H-R I, 115; A-T VI, 54). He explains that animal spirits are the product of "the most animated and subtle portions of the blood which the heat has rarefied in the heart" (" . . . les plus vives & plus subtiles parties du sang, que la chaleur a rarefiées dans le coeur . . .") and sent up to fill the cavities of the brain (*Passions*, Art. X; H-R I, 335; A-T XI, 334). Incidentally, Descartes, like Aristotle, considers the heart to be the center of vital heat in the body. He says that

so long as we live there is a continual heat in our heart . . . a species of fire which the blood of the veins maintains, and . . . this fire is the corporeal principle of all the movements of our members.

. . . pendant que nous vivons, il y a une chaleur continuelle en nostre coeur, . . . une espece de feu que le sang des venes y entretient, & . . . ce feu est le principe corporel de tous le mouvemens de nos membres. (*Passions*, Art. VIII; H-R I, 335; A-T XI, 333)

Descartes' "animal spirits" reminds us immediately of the mysterious *σύμφυτον πνεῦμα*—the "connate spirit" or "breath"—which is for Aristotle the principal medium by which the soul present in the heart is affected by sensory impulses and emotional reactions, and by which it initiates external response. Like Descartes' "animal spirits,"

the *σύμφυτον πνεῦμα*, as the term implies, is a kind of breath or *air*; but *warm* air, involving an element of heat that is, as Aristotle says, “analogous to the element of the stars” (*ἀνάλογον οὐσα τῷ τῶν ἄστρων στοιχείῳ*, *De Gen. Animalium* 736b38–737a1), giving it special capacities for the communication of life and vital functions (*ibid.* 736b30 ff.)<sup>4</sup>

As Descartes’ animal spirits surround the pineal gland, so Aristotle’s *σύμφυτον πνεῦμα* operates within and around the heart especially, which at one point he calls the “pneumatic member” (*ἐπὶ τῷ πνευματικῷ μορίῳ*, *De Gen. An.* 781a31). The *σύμφυτον πνεῦμα* mediates sensory impulses coming from the sense organ to the soul present in the heart (e.g., *De Gen. An.* 781a21–33); and mediates motor impulses from the soul in the heart to the joints and sinews. Aristotle says:

All animals both possess *symphyton pneuma* and derive their strength from this. . . . This [*pneuma*] seems to bear a relation to the soul-source similar to that which the point in the joints,—the one which imparts movement and is itself moved—has to the unmoved. And since the soul-source is . . . situated in the heart, it is clear that the *symphyton pneuma* is also there” (*De Motu An.* 703a9–16 Nussbaum, adapted).

πάντα δὲ φαίνεται τὰ ζῶα καὶ ἔχοντα πνεῦμα σύμφυτον καὶ ἰσχύοντα τούτῳ. . . . τοῦτο δὲ πρὸς τὴ ἀρχὴν τὴν ψυχικὴν ἔοικεν ὁμοίως ἔχειν ὥσπερ τὸ ἐν ταῖς καμπαῖς σημεῖον, τὸ κινεῖν καὶ κινούμενον, πρὸς τὸ ἀκίνητον. ἐπεὶ δ’ ἡ ἀρχὴ τοῖς μὲν ἐν τῇ καρδίᾳ . . . διὰ τοῦτο καὶ τὸ πνεῦμα τὸ σύμφυτον ἐνταῦθα φαίνεται ὄν.

Thus in Aristotle the *σύμφυτον πνεῦμα* functions as immediate agent of the life processes originating in the soul operating through the heart. The details can be found summarized elsewhere.<sup>5</sup> I only mean to suggest here that there seems to be a close analogy between Descartes’ “animal spirits” and Aristotle’s *σύμφυτον πνεῦμα* with relation to the central organ (pineal gland or heart) through which soul principally operates. Although Descartes’ knowledge of anatomy and physiology, especially that of the central nervous system, represents a considerable advance over Aristotle, when it comes to explaining the body-soul relationship he is still left with Aristotle’s basic model: soul operating in a central organ through the medium of a

<sup>4</sup> M. Nussbaum, *Aristotle’s De Motu Animalium* (Princeton 1978), p. 162: “We can only say that *pneuma* is, apparently, air with a special kind of heat in it that makes it behave unlike ordinary air, more like a different element.”

<sup>5</sup> See A. L. Peck’s *De Gen. An.* in the Loeb Series (1953), Appendix B, 576–93; F. Solmsen, *J. of Hellenic Studies* 77 (1957), 119–23; M. Nussbaum, 143–164 (Essay 3).

special subtle kind of matter (a warm air). He sums up the process as follows:

Hence in our very selves the mind [or soul] by no means moves the external limbs immediately, but merely directs the subtle fluid, styled the animal spirits, that passes from the heart through the brain toward the muscles, and determines this fluid to perform definite motions, these animal spirits being in their own nature capable of being utilized with equal facility for many distinct actions.

. . . adeo ut nequidem in nobis ipsis mens immediate moveat membra externa, sed dirigit tantum spiritus a corde per cerebrum in musculos fluentes eosque ad certos motus determinet, cum ex se isti spiritus ad multas actiones diversas aequae facile applicentur. (*Reply to Objections IV, H-R II, 103; A-T VII, 229*)

Despite these superficial similarities in their psychology, however, Descartes' view of soul differs radically from that of Aristotle. There is little need to remind this audience of the implications of Aristotle's hylomorphic view of soul and body as developed in the *De Anima* especially, where the relationship is that of form to matter in constituting the living individual organism; where soul is "the first actuation (*ἐντελέχεια*) of a natural body furnished with organs" (*ἐντελέχεια ἡ πρώτη σώματος φυσικοῦ ὀργανικοῦ*, *De An.* 412b5), and where all second actuations (even some noetic) are adequately described only as events of the body-soul compound, having both psychic and somatic aspects. As Aristotle explains, when the person experiences anger, tenderness, fear, pity, courage, joy, loving, hating, even thought ". . . simultaneously with these the body is modified in some way" (*ἄμα γὰρ τούτοις πάσχει τι τὸ σῶμα*, *De An.* 403a18). The unity between body and soul, matter and form, is as close in the living compound as that of wax and the impression in the wax; the axe and axeness; the eye and the power of sight (*ibid.* 412b6–413a3). A material eye without sight is no more an eye than a corpse is a man (*De Gen. An.* 735a7–8; and cf. 734b25–27, 726b23–25).<sup>6</sup> Body and soul are simply two inseparable aspects of the living organism.

The same kind of unity exists, by implication, between the psychic and somatic aspects of all second actuations as well. For Aristotle maintains that it is as inadequate to describe the experience of anger simply as "the desire for retaliation" (*ὁ μὲν γὰρ ὄρεξιν ἀντιλυπήσεως*, its formal aspect) as it would be to describe it simply as "a boiling of the blood around the heart" (*ὁ δὲ ζέσιν τοῦ περὶ καρδίαν αἵματος*, its

<sup>6</sup> "No part of the body will be such in more than name unless it has some Soul in it (e.g. the eye of a dead person)" (*οὔτε μόνον ἔσται μὴ μετέχον [ψυχῆς] ἀλλ' ἢ ὁμωμένως, ὥσπερ τεθνεώτος ὀφθαλμός*). A. L. Peck, *De Gen. An.* 735a7–8.

But Aristotle goes beyond this, as you recall, to describe the soul, once implanted and joined to appropriate matter, also as *efficient* cause in the development and maintenance of organs and life functions in the individual. The *De Generatione Animalium* details the process by which the implanted soul forms the *heart* first, and thereafter the rest of the organs as outgrowths and extensions from the heart (742a16 ff.). The *De Anima* generalizes on this:

Moreover, the soul is also the origin of motion from place to place. . . . Qualitative change also, and growth are due to soul. For sensation is supposed to be a sort of qualitative change. . . . The same holds of growth and decay. . . .

ἀλλὰ μὴν καὶ ὄθεν πρῶτον ἢ κατὰ τόπον κίνησις, ψυχῆ. . . ἔστι δὲ καὶ ἀλλοίωσις καὶ αὐξήσις κατὰ ψυχὴν. ἢ μὲν γὰρ αἰσθησις ἀλλοίωσις τις εἶναι δοκεῖ. . . ὁμοίως δὲ καὶ περὶ αὐξήσεώς τε καὶ φθίσεως ἔχει. (*De An.* 415b21–26)

In the *De Anima* and elsewhere Aristotle describes both psychic and somatic aspects of the nutritive, sentient, movent, and desiderative functions in man. But when he comes to grips with the problem of man's highest function, the intellectual, his hylomorphic account breaks down,—at least to the extent that one so-called “part” of the soul, the intellect (*νοῦς*; the power of comprehending non-material reality), is denied a specific bodily organ:

If the entire soul holds together the whole body, then each of its “parts” ought properly to hold together some part of the body. But this seems impossible. For it is difficult to conjecture what part the intellect will hold together or how it can hold any part together.

εἰ γὰρ ἡ ὅλη ψυχὴ πᾶν τὸ σῶμα συνέχει, προσήκει καὶ τῶν μορίων ἕκαστον συνέχειν τι τοῦ σώματος. τοῦτο δ' ἔοικεν ἀδυνάτῳ ποῖον γὰρ μόριον ἢ πῶς ὁ νοῦς συνέξει, χαλεπὸν καὶ πλάσαι. (*De An.* 411b15–18)

When he comes to analyze the intellectual function closely, however (*De An.* 429a10 ff.), Aristotle distinguishes two “parts” of intellect: (1) the *receptive* intellect, the potentiality for receiving the intelligible forms transmitted in the phantasms, and (2) the *activating* or *agent* intellect, which actuates this potency “as light brings out the colors present in a darkened room” (*τρόπον γὰρ τινα καὶ τὸ φῶς ποιεῖ τὰ δυνάμει ὄντα χρώματα ἐνεργεία χρώματα*, *De An.* 430a15–17). The receptive intellect is apparently closely involved with those faculties of soul that inform and operate through a material organ, namely, the central sense power, *φαντασία*, and memory, operating in the heart. The agent intellect alone seems to actuate no material organ, which implies for Aristotle that it actuates *itself* as pure form or act. Consequently it is capable of separate existence, for any “part” of

heart. The agent intellect alone seems to actuate no material organ, which implies for Aristotle that it actuates *itself* as pure form or act. Consequently it is capable of separate existence, for any "part" of soul not actuating material body is *separable* (*De An.* 413a3-6). Aristotle must have this aspect of *νοῦς* in mind when he says:

It would seem to be a distinct species of soul, alone capable of separate existence, something eternal (*αἰδίον*), as it were, distinct from the perishable.

ἀλλ' ἔοικε ψυχῆς γένος ἕτερον εἶναι, καὶ τοῦτο μόνον ἐνδέχεται χωρίζεσθαι, καθάπερ τὸ αἰδίον τοῦ φθαρτοῦ. (*De An.* 413b25-27)

If this "part" of the intellectual soul is eternal, it must have preexisted before the individual human organism was conceived. Aristotle seems to have accepted this consequence, but is vague about the manner of its joining the compound, explaining that while the nutritive and sentient "souls" with potentiality for the rational are supplied by the parents,

the *nous* alone enters, in addition, from outside and is alone divine; for bodily activity has no share in its activity.

λείπεται δὴ τὸν νοῦν μόνον θύραθεν ἐπεισέναι καὶ θεῖον εἶναι μόνον. οὐθὲν γὰρ αὐτοῦ τῆ ἐνεργείᾳ κοινωνεῖ σωματικῆ ἐέργεια. (*De Gen. An.* 736b27-29)

Likewise, since this activating *νοῦς* is eternal, it must survive the dissolution of the compound at death.

But *nous* seems to be engendered in us as a self-existing substance, and to be imperishable.

ὁ δὲ νοῦς ἔοικεν ἐγγίνεσθαι οὐσία τις οὐσα, καὶ οὐ φθείρεσθαι. (*De An.* 408b18-19)

Hence Aristotle does affirm the immortality of this part of soul. But this seems in no way to constitute *personal* immortality. For Aristotle asserts that

reasoning, love, and hatred are not attributes of the *nous* but of its individual possessor. . . . Hence, when this possessor perishes, there is neither memory or love; for these never did belong to the *nous* but to the composite whole which has perished; while the *nous* is doubtless a thing more divine and impassive.

τὸ δὲ διανοεῖσθαι καὶ φιλεῖν ἢ μισεῖν οὐκ ἔστιν ἐκείνου [νοῦ] πάθη, ἀλλὰ τοῦ δι' ἔχοντος ἐκείνο. . . . διὸ καὶ τούτου φθειρομένου οὔτε μνημονεύει οὔτε φιλεῖ· οὐ γὰρ ἐκείνου ἦν, ἀλλὰ τοῦ κοινού, ὃ ἀπόλωλεν. ὁ δὲ νοῦς ἴσως θεϊτερόν τι καὶ ἀπαθές ἐστω. (*De An.* 408b25-29)

Even the receptive *nous* perishes with memory:

. . . τοῦτο μόνον ἀθάνατον καὶ ἄδιον (οὐ μνημονεύομεν δέ, ὅτι τοῦτο μὲν ἀπαθές, ὁ δὲ παθητικὸς νοῦς φθαρτός): καὶ ἔνευ τούτου οὐθὲν νοεῖ. (*ibid.* 430a23–25)

The surviving soul is pure act, independent of matter and self-existent, without memory of previous existence, without acquired knowledge or modification of any sort (*ἀπαθές*) resulting from its operation in the living individual. This is hardly personal immortality.

On the other hand, one of the propositions that Descartes considers most important to establish is precisely the proposition that the personal soul is immortal. His *Discourse on the Method* indicates that his whole discussion of the human soul is linked with the problem of its origin and destiny. He claims to have shown that the rational soul "could not be in any way derived from the power of matter . . . but that it must be expressly created" (" . . . ne peut aucunement estre tirée de la puissance de la matiere, . . . mais qu'elle doit expressement estre créée" . . . , *Disc. V*; H-R I, 118; A-T VI, 59–60). And again, "that our soul is in its nature entirely independent of body, and in consequence that it is not liable to die with it" (" . . . la nostre [ame] est d'une nature entierement independante du cors, & par consequent, qu'elle n'est point sujette a mourir avec luy. . . , *Disc. V*, end; H-R I, 118; A-T VI, 59–60; cf. dedication to the *Meditations*, H-R I, 333–34; *Med. II*).

Descartes begins his search for truth, as you recall, not with Aristotle's attempt at objective analysis of the external universe, of living beings, and of man in the total scheme of things, but *modo geometrico*, with a clear, distinct, and undeniable proposition drawn from inner experience: *cogito; ergo sum*—"I am thinking; therefore I exist." In the *Discourse on the Method* (Pt. IV) he reasons that it is *inconceivable* that he, the "thinking thing," does not exist. But, he continues,

I saw that I *could* conceive (1) that I had no body, and (2) that there was no world nor place where I might be. . . . From that I knew that I was a *substance* the whole essence or nature of which is *to think*; and that for its existence there is no need of any place, nor does it depend on any material thing; so that this "me," that is to say, the *soul* by which I am what I am, is *entirely distinct from body*, and even more easy to know than the latter; and even if body *were not*, the soul would not cease to be what it is. . . .

. . . voyant que je pouvois feindre que je n'avois aucun cors, & qu'il n'y avoit aucun monde, ny aucun lieu ou je fusse . . . je connû de la que j'estois une substance dont toute l'essence ou la nature n'est que de penser, & qui, pour estre, n'a besoin d'aucun lieu, ny ne depend d'aucune chose materielle. En sorte que ce Moy, c'est a dire, l'Ame

par laquelle je suis ce que je suis, est entierement distincte du cors, & mesme qu'elle est plus aisée a connoistre que luy, & qu'encore qu'il ne fust point, elle ne lairroit pas d'estre tout ce qu'elle est. (*Disc. IV*; H-R I, 101; A-T VI, 32-33)

There we have the essence of the Cartesian logico-introspective method; his identification of the thinking subject with the soul; and the basic reason for soul's complete independence of body and consequent immortality.

The same line of reasoning is found in *Meditations* VI:

And although . . . I possess a body with which I am intimately conjoined, yet because, on the one side, I have a clear and distinct idea of myself inasmuch as I am only a thinking and unextended thing, and as, on the other, I possess a distinct idea of body, inasmuch as it is only an extended and unthinking thing, it is certain that this I is entirely and absolutely distinct from my body, and can exist without it.

Et quamvis . . . habeam corpus, quod mihi valde arcte conjunctum est, quia tamen ex unā parte claram & distinctam habeo ideam mei ipsius, quatenus sum tantum res cogitans, non extensa, & ex aliā parte distinctam ideam corporis, quatenus est tantum res extensa, non cogitans, certum est me a corpore meo revera esse distinctum, & absque illo posse existere. (*Med. VI*; H-R I, 190; A-T VII, 78)

Soul, then, is for Descartes the "thinking thing" (*res cogitans*) with which I, the person, am identified. It is a *substance*, "a thinking and unextended thing . . . entirely and absolutely distinct from my body," which is another substance, "an extended and unthinking thing," as he describes them. The consequence is for him that this "I," that is, my soul, since it is entirely and absolutely distinct from my body, can exist without it. The same reasoning in extended form appears in *Meditations* II (H-R I, 149-151).

Descartes identifies soul also as "mind," or "understanding" or "reason" ("sum igitur praecise tantum res cogitans, id est, mens, sive animus, sive intellectus, sive ratio . . .," *Med. II*; H-R I, 152; A-T VII, 27). And "thinking" includes for him a range of psychic events far beyond what Aristotle would classify as functions of the rational soul, i.e., as "thought." "What is a thing that thinks?" he asks. "It is a thing which doubts, understands, conceives, affirms, denies, wills, refuses, which also imagines and feels."

Res cogitans. Quid est hoc? Nempe dubitans, intelligens, affirmans, negans, volens, nolens, imaginans quoque, & sentiens. (*Med. II*; H-R I, 153; A-T VII, 28)

In his *Principles of Philosophy* Descartes summarizes his position on what thought (*cogitatio*) is:

By the word *Thought* I understand all that of which we are conscious as operating in us. And that is why not alone understanding, willing, imagining, but also feeling, are here the same as thought. For if I say I see, or I walk, I therefore am, and if by seeing and walking I mean the action of my eyes or my legs, which is the work of my body, my conclusion is not absolutely certain; because it may be that, as often happens in dreams, I think I see or walk, although I never open my eyes or move from my place. . . . But if I mean only to talk of my *sensation (sensu)* or my consciously seeming to see or to walk, it becomes quite true, because my assertion now refers only to my mind, which alone is concerned with my feeling or thinking that I see and I walk.

Cogitationis nomine, intelligo illa omnia, quae nobis consciis in nobis fiunt, quatenus eorum in nobis conscientia est. Atque ita non modo intelligere, velle, imaginari, sed etiam sentire, idem est hîc quod cogitare. Nam si dicam, ego video, vel ego ambulo, ergo sum; & hoc intelligam de visione, aut ambulatione, quae corpore peragitur, conclusio non est absolute certa; quia, ut saepe fit in somnis, possum putare me videre, vel ambulare, quamvis oculos non aperiarn, & loco non movear. . . . Sed si intelligam de ipso sensu sive conscientia videndi aut ambulandi, quia tunc refertur ad mentem, quae sola sentit sive cogitat se videre aut ambulare, est plane certa. (*Princ. Part I, IX; H-R I, 222; A-T VIII, 7-8*)

Descartes considers all the data of consciousness, then, as "thought" belonging to the soul, assuring the conscious subject of his existence.

What of the *body*? And the external world? Descartes is assured of their existence only through the veracity of God, the Creator, whose existence is known with a certainty second only to that of his own existence. For Descartes discovers within his consciousness the "idea of a Being who is omniscient, omnipotent, and absolutely perfect" (" . . . unam [ideam] esse entis summe intelligentis, summe potentis & summe perfecti . . .", *Princ. Part I, XIV; H-R I, 224; A-T VIII, 10*). And from the fact that his mind "perceives that necessary and eternal existence is comprised in the idea which it has of an absolutely perfect Being, it has clearly to conclude that this absolutely perfect Being exists" (" . . . ita ex eo solo quod percipiat existentiam necessariam & aeternam in entis summe perfecti ideâ contineri, plane concludere debet ens summe perfectum existere," *Princ. Pt. I, XIV; H-R, I, 225; A-T VIII, 10*). Now the first of the Creator's attributes is that He is "absolutely true and the source of all light, so that it is evidently a contradiction that He should deceive us" (" . . . summe verax, & dator omnis luminis: adeo ut plane repugnet ut nos fal-

lat . . . ,” *Princ.* Pt. I, XXIX; H-R I, 231; A-T VIII, 16). Hence it follows that “the faculty of knowledge which God has given us can never disclose to us any object which is not true, inasmuch as it comprehends it . . . clearly and distinctly” (“Atque hinc sequitur . . . cognoscendi facultatem a Deo nobis datam, nullum unquam objectum posse attingere, quod non sit verum, quatenus ab ipsâ attingitur, hoc est, quatenus clare & distincte percipitur,” *Princ.* Pt. I, XXX; H-R I, 231; A-T VIII, 16). Again, “because God is no deceiver, the faculty of knowledge that He has given us cannot be fallacious” in assenting “to things that we clearly perceive” (“ . . . cum Deus non sit fallax, facultas percipiendi quam nobis dedit, non potest tendere in falsum . . . cum tantum ad ea quae clare percipiuntur se extendit,” *Princ.* Pt. I, XLIII; H-R I, 236; A-T VIII, 21). What are some of these things “we clearly perceive”? Descartes replies: “Of this nature are mathematical demonstrations, the knowledge that material things exist, and the evidence of all clear reasoning . . . about them” (“Tales sunt Mathematicae demonstrationes; talis est cognitio quod res materiales existant; & talia sunt evidentia omnia ratiocinia, quae de ipsis fiunt,” *Princ.* Pt. IV, CCVI; H-R I, 302; A-T VIII, 328). (This is obviously a world apart from what has been called Aristotle’s “naive realism.”)

Descartes asserts the existence of only two created substances<sup>7</sup> (*Princ.* Pt. I, XLVIII; H-R I, 238; A-T VIII, 23): “. . . the one is intellectual things . . . pertaining to the mind or to thinking substance; the other is material things, or that pertaining to extended substance, i.e., to body” (“ . . . unum est rerum intellectualium . . . ad mentem sive ad substantiam cogitantem pertinentium; aliud rerum materialium, sive quae pertinent ad substantiam extensam, hoc est, ad corpus”); for we have “two clear and distinct ideas, the one of created substance that thinks, the other of corporeal substance” (“ . . . possumus duas claras & distinctas habere notiones, sive ideas, unum substantiae cogitantis creatae, aliam substantiae corporeae . . . ,” *Princ.* Pt. I, LIV; H-R I, 241; A-T VIII, 25). Each has its principal attribute: “. . . extension in length, breadth, and depth constitutes the nature of corporeal substance; and thought constitutes the nature of thinking substance” (“Nempe extensio in longum, latum & profundum, substantiae corporeae naturam constituit; & cogitatio constituit naturam substantiae cogitantis,” *Princ.* Pt. I, LIII; H-R I, 240; A-T VIII, 25).

<sup>7</sup> “By substance we can understand nothing else than a thing which so exists that it needs no other thing in order to exist” (“Per substantiam nihil aliud intelligere possumus, quam rem quae ita existit, ut nullâ aliâ re indigeat ad existendum,” *Princ.* Pt. I, LI, H-R I, 239; A-T VIII, 24). Descartes clearly understands that this definition cannot be applied univocally to God and created substances.

Functions of the soul, of the body, and of the compound are described thus (*Princ.* Pt. I, XLVIII; H-R I, 238; A-T VIII, 23):

Perception, volition, and every mode of knowing and willing pertain to thinking substance; while to extended substance pertain magnitude, or extension in length, breadth, and depth, figure, movement, situation, divisibility into parts themselves divisible, and such. Besides these there are, however, certain things we experience . . . which should be attributed neither to mind nor body alone but to the close and intimate union that exists between the body and mind. . . . Such are the appetites of hunger, thirst, etc., and also the emotions or passions of the mind which do not subsist in mind or thought alone, as the emotions of anger, joy, sadness, love, etc.; and finally all the sensations such as pain, pleasure, light and color, sounds, odors, tastes, heat, hardness, and all other tactile qualities.

Perceptio, volitio, omnesque modi tam percipiendi quam volendi, ad substantiam cogitantem referuntur; ad extensam autem, magnitudo, sive ipsamet extensio in longum, latum & profundum, figura, motus, situs, partium ipsarum divisibilitas, & talia. Sed & alia quaedam in nobis experimur, quae nec ad solam mentem, nec etiam ad solum corpus referri debent, quaeque . . . ab arctâ & intimâ mentis nostrae cum corpore unione profiscuntur; nempe appetitus famis, sitis, &c.; itemque, commotiones, sive animi pathemata, quae non in sola cogitatione consistunt, ut commotio ad iram, ad hilaritatem, ad tristitiam, ad amorem, &c.; ac denique sensus omnes, ut doloris, titillationis, lucis & colorum, sonorum, odorum, saporum, caloris, duritiei, aliarumque tactilium qualitatum.

We have already seen the broad outline of Descartes' physiological psychology by which soul and body were described as interacting through the nervous system, the animal spirits, and the pineal gland, the "principal seat" of the soul, where soul receives and reacts to material impulses from inside and outside the organism, and sets up physical changes relayed to the muscles that control bodily motion. What we now appreciate, however, is that soul and body are conceived basically as two *completely distinct and independent substances* which somehow join to cooperate in this manner.

The body is, in fact, conceived by Descartes as a *machine*, created in such a way that it could exist independently of soul, operating by purely mechanical principles, principally through the vital heat centered in the heart. Descartes considered all material substances, even heat, to be composed of minute bodies or corpuscles having only those attributes he mentions,—extension in length, breadth, depth, figure or shape, movement, situation, and divisibility. The sole type of change or motion is mechanical—by impact or collision of particles,

by pushing or pulling in larger structures. Descartes compares the body specifically to "a watch or other automaton (i.e., a machine that moves itself)" which is "wound up and contains in itself the corporeal principle of those movements for which it is designed along with all that is requisite for its action" ("... une montre, ou autre automate (c'est à dire, autre machine qui se meut de soy-mesme) . . . est montée, & . . . a en soy le principe corporel des mouvemens pour lesquels elle est instituée, avec tout ce que est requis pour son action . . .," *Passions of the Soul* Pt. I, Art. VI; H-R I, 333; A-T XI, 331). Unlike Aristotle, Descartes does not consider soul to be cause of the ordinary life-processes of the body "since they do not depend on thought at all" ("... en tant qu'ils ne dépendent point de la pensée . . .," *Pass.*, Pt. I, Art. IV; H-R I, 332; A-T XI, 329).

... I consider the body of a man as being a sort of machine so built up and composed of nerves, muscles, veins, blood and skin that though there were no mind in it at all, it would not cease to have the same motions as at present, exception being made of those movements which are due to the direction of the will, and in consequence depend upon the mind. . . .

... si considerem hominis corpus, quatenus machinamentum quoddam est ex ossibus, nervis, musculis, venis, sanguine & pellibus ita aptum & compositum, ut, etiamsi nulla in eo mens existeret, eosdem tamen haberet omnes motus qui nunc in eo non ab imperio voluntatis nec proinde a mente procedunt. . . . (*Meditations* VI; H-R I, 195; A-T VII, 84)

Death of the body is not caused by departure of the soul; rather, the soul departs because the body breaks down, as "a watch or other machine when it is broken and when the principle of its movement ceases to act" ("... montre, ou autre machine, lors qu'elle est rompuë & que le principe de son mouvement cesse d'agir," *Passions* Art. VI; H-R I, 333; A-T XI, 331).

Soul and body chiefly interact, as we have seen, through the pineal gland, which Descartes specifies as "the portion of the brain by which the mind is immediately affected" ("... in eã parte cerebri quae immediate mentem afficit . . .," *Med.* VI; H-R I, 197; A-T VII, 87); it receives the mechanical reactions of the body and itself acts, in Descartes words, "immediately upon the soul" ("... immediatement contre l'ame . . .," *Passions*, Art. XXXV; H-R I, 348; A-T XI, 356). Of pain perception he says "... the movement [of the nerves] passing . . . to the inmost parts of the brain, gives a sign to the mind, which makes it feel somewhat, to wit, pain" ("... ille eorum motus . . . ad intima cerebri pertingens, ibi menti signum dat ad

passing . . . to the inmost parts of the brain, gives a sign to the mind, which makes it feel somewhat, to wit, pain" (" . . . ille eorum motus . . . ad intima cerebri pertingens, ibi menti signum dat ad aliquid sentiendum, nempe dolorem . . .," *Med.* VI, H-R I, 197; A-T VII, 88). Conversely, he says that when the soul "desires something, it causes the little gland to which it is closely united to move in the way requisite . . ." (" . . . veut quelque chose, elle fait que la petite glande, à qui elle est estroitement jointe, se meut en la façon qui est requisite . . .," *Passions*, Art. XLI; H-R I, 350; A-T XI, 360).

But how does Descartes conceive these two separate and distinct substances to be "closely united"? As far as I know, his best response is contained in *Meditation* VI where he declares that nature, through the sensations of pain, hunger, and thirst, teaches

that I am not only lodged in my body as a pilot in a vessel, but that I am closely united with it, and, so to speak, so intermingled with it that I seem to compose with it one whole . . . these sensations of hunger, thirst, pain, etc. are in truth none other than certain confused modes of thought which are produced by the union and apparent intermingling of mind and body.

. . . me non tantum adesse meo corpori ut nauta adest navigio, sed illi arctissime esse conjunctum & quasi permixtum, adeo ut unum quid cum illo componam. . . . Nam certe isti sensus sitis, famis, doloris, &c., nihil aliud sunt quam confusi quidam cogitandi modi ab unione & quasi permixtione mentis cum corpore exorti. (*Med.* VI; H-R I, 192; A-T VII, 81)

"Intermingling" can be easily understood of two different *material* substances; but what does it mean when applied to the union of a material with a completely non-material substance, one incapable of physical contact or location in place? When one of his critics (Arnauld) accuses Descartes of conceiving man as "a spirit that makes use of a body" (" . . . animum utentem corpore. . .," *Objections* IV; H-R II, 84; A-T VII, 203), Descartes claims that his argument from the consciousness of pain, hunger, and thirst have "proved that mind was substantially united with the body" ("Nam in eādē sextā Meditatione, in quā egi de distinctione mentis a corpore, simul etiam probavi substantialiter illi esse unitam . . .," *Reply to Objections* IV; H-R II, 102; A-T VII, 227–28). Though he uses the expression "substantial union" of mind and body, it cannot be understood in the Aristotelian sense of form and matter uniting to constitute a single substance, since Descartes has rejected the notion of substantial form. Another critic (Gassendi) continues to press him on the point. "For there is

sine partibus commiscibilibus utriusque. . . . Quenam vero corporeae cum incorporeā intelligi potest?" *Objections V*: H-R II, 201; A-T VII, 344). Descartes replies testily: "At no place do you bring an objection to my arguments; you only set forth the doubts you think follow from my conclusions" ("Nihil ullibi in meas rationes objicis, sed tantum dubia proponis, quae tibi ex meis conclusionibus sequi videntur," *Reply to Obj. V*; H-R II, 232; A-T VII, 389-90). Finally, when his friend Princess Elizabeth asks the same questions, — how a thinking soul could move the animal spirits — Descartes can only answer: "I may truly say that what your Highness proposes seems to me to be the question people have most right to ask me in view of my published works" ("Et je puis dire, avec vérité, que la question que votre Altesse propose, me semble estre celle qu'on me peut demander avec le plus de raison, en suite des escrits que j'ay publiez," A-T III, 663; A. Kenny, *Descartes*, 1968, p. 226).

There we have it, then. Two models of human nature, soul and body, — Aristotle's hylomorphism and Descartes' dualism. Each has its problems: If body and soul are united as matter and form, how do we account for the soul's apparent power to transcend matter in conceiving the non-material, the universal? How satisfy man's almost universal longing for personal survival after death? On the other hand, if soul is a thinking substance entirely independent of matter, and body a mere machine of well-coordinated material parts, how can they possibly be united and interact in a single composite organism? We can, of course, go a step further, as did La Mettrie a century after Descartes, and discard the notion of soul altogether, settling for the bleak view that all living beings, including man, are merely quasi-machines. But that view also has its problems. Perhaps most important is that we continue to search, to think about the problem of body and soul. Or at least that we continue to think. For, as Descartes points out in the second Meditation (H-R I, 151; A-T VII, 27), "it might possibly be the case that — if I ceased entirely to think — I should likewise cease altogether to exist" (" . . . nam forte etiam fieri posset, si cessarem ab omni cogitatione, ut illico totus esse desinerem").

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