

MEDICAL SPIRITS AND GOD AND THE SOUL

DANIEL P. WALKER

By the term 'medical spirits' I mean the vaporous, but corporeal substance which, in medical theory from antiquity till the renaissance, performed various vital functions. Of the three kinds of spirit, natural, vital and animal, we shall be concerned only with the last two. Vital spirits are manufactured in the heart out of blood and breathed air and are conveyed by the arteries; their main function is to distribute innate or vital heat to all parts of the body. Animal spirits are elaborated from these and are centred in the ventricles of the brain, whence through the nervous system they are transmitted to sense-organs and muscles; their function is nervous transmission, including motor-activity, sense-perception, and, usually, such lower psychological activities as appetite, *sensus communis*, and imagination. They are the first, direct instrument of the soul¹.

There were confusions and contaminations between medical spirits and the Christian meanings of spirit as the highest, divine part of the soul or as part of the godhead, the Holy Spirit. Also medical spirits were used in attempts to bridge the metaphysical gap between body and soul, between matter and mind. Such attempts, in which the contaminations of medical spirits with Christian meanings of spirit usually occur, produced

¹ Cf. D. P. WALKER, *Francis Bacon and Spiritus*, in *Science, Medicine and Society, Essays to honour Walter Pagel*, ed. Allen G. Debus, New York, 1972, vol. 1, pp. 121-130; *The Ancient Theology*, London, 1972, Ch. 7.

strange and philosophically audacious conceptions of man's soul, and theologically unorthodox conceptions of God. I shall first briefly outline these conceptions and then give examples of them in thinkers of the 16th and 17th centuries.

As for the human soul, medical spirits are closely linked with three important developments. First, the traditional medical theory that animal spirits perform, or are the first instrument of the soul in performing, such psychic functions as appetite, common sense and imagination, that men have in common with animals, tends to confine the function of the incorporeal soul to abstract reasoning, that which differentiates men from animals. Those who followed this path, such as Telesio, Francis Bacon and Descartes, may have intended to preserve both the normal metaphysical division between mind and matter and the orthodox Christian doctrine of an incorporeal and immortal soul. But by accepting that spirits alone could perform the lower two functions of the Aristotelian tripartite soul, i.e. the vegetative and sentient, they were moving in a dangerous direction, namely, towards a position where the soul is identified with the spirit. This theory (our second development) is highly unorthodox, since a corporeal soul, extended and having parts, loses both its unity and its immortality. And most of the thinkers who held it were extremely heterodox: Michael Servetus, Agostino Donio, Jean Bodin; but it was also held by Melanchton, a Protestant, and perhaps by Luis Vives and Antonio Persio, a follower of Telesio, who were Catholics. The third development of views on man's soul comes from the ancient association of medical spirits with the substance of the heavens. We know the importance of this association for the astrological magic of Ficino ², and how it led Fernel to compare medical spirits with the Neoplatonic astral body ³. The

² Cf. D. P. WALKER, *Spiritual and Demonic Magic*, London, 1958.

³ See D. P. WALKER, *The Astral Body in Renaissance Medicine*, in « Journal of the Warburg and Courtauld Institutes », XXI (1958), pp. 119-133.

astral body led two of the greatest of the Cambridge Platonists, Henry More and Ralph Cudworth, to strange conjectures about the afterlife of the human soul.

Medical spirits were influential on conceptions of the deity in a way analogous to their influence on conceptions of the soul, i.e. they tended to produce sensualist or materialist conceptions of God, or some kind of pantheism. But here the influence is less direct; it is usually by way of the micro-macrocosm parallel, which posited a Spirit of the World, an intermediary between the physical world and the Soul of the World, corresponding to man's spirit which is the intermediary between his body and soul. This is at least one major source for More's and Newton's space-God, for Newton's aether, and Thomas Hobbes' corporeal God⁴. The influence could also sometimes be more direct, as in Melanchthon's and Servetus' theory of the Holy Spirit's having a particular affinity to animal spirits.

I do not propose to go into the ancient sources of these theories; but I want to recall three texts, which were quoted again and again, becoming as it were mottos or emblems of the whole theories in question.

First, for the identification of medical spirits with the astral body and of both with the soul, Galen, in the *De Placitis Hippocratis et Platonis*⁵:

If we are to declare the substance of the soul, we must say one of two things: either it is the shining and aethereal body, at which conclusion the Stoics and Aristotle must logically arrive, even if unwillingly; or that it is an incorporeal substance, and that this body is its first vehicle, through which mean the soul receives communication with other bodies.

⁴ Cf. A. KOYRÉ, *From the Closed World to the Infinite Universe*, Baltimore, 1957, Ch. V-VII, IX-XI.

⁵ TH. HOBBS, *The English Works*, ed. Molesworth, London, 1840, IV, 306-307, 383.

⁶ GALEN, *Opera Omnia*, ed. Kühn, V, 643.

Secondly, for the astrological affinities of medical spirits, Aristotle, in the *De Generatione Animalium*⁷: « (what makes semen fertile is) the spirit which is contained in the foamy body of the semen, and the nature in the spirit which is analogous to the element of the stars », to which we may add his pronouncement in the *Physics*: « Man and the sun generate man ».

Thirdly, for the cosmic spirit tending towards pantheism, and for spiritual magic, Virgil, in the 6th Book of the *Aeneid*⁸:

Principio coelum, ac terras, camposque liquentes,
Lucentemque globum Lunae, Titaniaque astra
Spiritus intus alit, totamque infusa per artus
Mens agitat molem, et magno se corpore miscet.

The first author I want to discuss is Melanchthon, who in 1540 published a treatise *De Anima*, and in 1553 a revised and expanded version of it, which went through several editions⁹. From the dedications of both versions it is clear that this is an introductory text-book for students, part of Melanchthon's strenuous campaign for the improvement of education. And in the treatise itself he shows himself to be an admirably liberal pedagogue, leaving as many questions open as he can within the bounds of orthodoxy and piety, but at the same time usually making it fairly clear what are his own convictions. For example, on the question of the seat of the soul, he leaves the reader free to accept the Aristotelian doctrine that this is the heart, but leaves little doubt that he himself follows Galen in making the brain the seat of the rational soul, reserving the

⁷ ARISTOTLE, *De Gen. Anim.*, 736 B-737 A; *Physics*, II, 194 B 13.

⁸ VIRGIL, *Aeneid*, VI, 724-727.

⁹ MELANCHTHON, *Commentarius de Anima*, Vitebergae, 1540; revised version in MELANCHTHON, *Opera Omnia (Corp. Ref.)*, XIII; I shall cite from MELANCHTHON, *De Anima Liber Unus*, Lugduni, 1555.

heart for emotions¹⁰. His chief medical authority, apart from Aristotle and Galen, is Vesalius, and he is early in accepting Vesalius' denial that the *rete mirabile*, that net-work of blood-vessels at the base of the skull, where vital spirits are elaborated into animal ones, exists in man¹¹. In other respects he gives a traditional account of medical spirits, though laying great stress on the lucid, flamelike and celestial character of both vital and animal spirits, and attributing unusual importance to the former¹². What is not at all usual, I think, is his conception of the relation of medical spirits to the soul and to the Holy Ghost.

Although early in the treatise he appears to accept an incorporeal mind (*mens*), and quotes a « definition of the soul used in the Church »: « the rational soul is an intelligent spirit »¹³, where *spiritus* may have its Christian sense of mind or intellect, elsewhere he leaves it an open question whether or not the human soul is identical with the spirits, and he is quite sure the the soul of animals is the vital spirit centred in the heart, as is the vegetative and sentient part of man's soul. He then quotes with approval our Galen passage, equating Galen's lucid and aethereal body with animal spirits¹⁴. Later on, in a special section on medical spirits, he again refers to the Galen passage¹⁵: « Galen says concerning the soul of man that either

¹⁰ MELANCHTHON, *op. cit.*, pp. 19-20, 37.

¹¹ *Ibid.*, p. 89; he does not name Vesalius, but in his dedication he states that his chief authorities for anatomy are Galen, Vesalius, and Leonard Fuchs.

¹² *Ibid.*, p. 111.

¹³ *Ibid.*, pp. 5-6, 16.

¹⁴ *Ibid.*, pp. 6-8.

¹⁵ *Ibid.*, pp. 111-112: « Galenus inquit de anima hominis, hos spiritus aut animam esse, aut immediatum instrumentum animae. Quod certè verum est, & sua luce superant solis & omnium stellarum lucem: & quod mirabilius est, his ipsis spiritibus in hominibus pijs miscetur ipse divinus spiritus; & efficit magis fulgentes divina luce, ut agnitio Dei sit illustrior,

these spirits are the soul, or they are the immediate instrument of the soul. This is certainly true ». But, very annoyingly, he does not say which of the alternatives is true, but goes on:

and [the spirits, vital and animal], by their light excel the light of the sun and all the stars; and, what is still more marvellous, in pious men the divine spirit itself is mixed with these very spirits, and makes them shine more brightly with divine light, so that their knowledge of God may be clearer, their ascent to Him more resolute, and their feelings towards Him more ardent. Conversely, when devils occupy the heart, by their blowing they trouble the spirits in the heart and brain, impede judgment and produce manifest madness, and drive the heart and other limbs to the cruellest movements; as when Medea killed her children, or when Judas killed himself. Let us therefore look to our nature and diligently rule it, and let us pray to the Son of God that He may drive the devils away from us, and may pour the divine spirit into our spirits.

Thus ends a short section which began: « Spirit is a subtle vapour concocted from the blood by the power of the heart »¹⁶. I do not think that Melanchthon is here just piously playing with different meanings of *Spiritus*. Nor, on the other hand, does he mean to identify the Holy Ghost (or the Devil) with medical spirits; but he does mean to say that there is a special likeness or congruity between the two which is more than a mere analogy, a congruity such that the two can and do interact

& adscensio firmior, & motus sint ardentiores erga Deum. E contra ubi Diaboli occupant corda, suo adflatu turbant spiritus in corde & in cerebro, impediunt judicia, & manifestos furores efficiunt, & impellunt corda & alia membra ad crudelissimos motus: ut Medea interficit natos, Iudas sibi ipsi consciscit mortem. Aspiciamus igitur naturam nostram, & diligenter eam rogamus: & sciamus, oportere spiritus nostros esse domicilium spiritus sancti; & oremus filium Dei, ut ipse depellat à nobis diabolos, & spiritum divinum in nostros spiritus transfundat ».

¹⁶ *Ibid.*, p. 110: « Spiritus est subtilis vapor, ex sanguine, coctus virtute cordis ».

— and he makes the same point in several other places¹⁷. The two are brought so close together because, on the one hand, the spirits have risen above the elemental world, they have nearly or quite become the soul, and, like Fernel, Melanchthon lays great emphasis on their celestial quality and astrological affinities, and because, on the other, the Holy Spirit has become quasi-corporeal, his traditional mediating role between God and man being thought of in physical and sensual terms. The same tendency towards a sensualist conception of divine matters is to be seen in some of his remarks on the afterlife. In my experience, it is rarely in the many 16th century discussions of the immortality of the soul that one finds much about the resurrection of the body; but Melanchthon emphasizes its importance. In discussing the usefulness of knowledge about the human body, he states that¹⁸

There is a secret cause why the Son of God Himself put on human nature. Him in all eternity you shall look upon with your eyes, you shall hear Him with your ears discoursing on divine wisdom, with your embrace shall you greet Him.

In the same year that Melanchthon's revised treatise was published, 1553, there was printed a work entitled: *De Mystério Trinitatis et veterum disciplina, ad Philippum Melanchthonem, et ejus collegas, Apologia*¹⁹. In this we read that, after the resurrection, our bodily senses will be endowed with the power of perceiving God, and « you will with these your bodily organs see, touch, taste, smell and hear God. Hear what I say », and

¹⁷ *Ibid.*, pp. 4-5, 213, 221.

¹⁸ *Ibid.*, p. 94: « Esse etiam arcanam causam cur ipse filius Dei induerit humanum naturam. Hunc in omni aeternitate tuis oculis intueberis, audies auribus tuis disserentem de sapientia divina, tuo complexu ipsum salutabis ».

¹⁹ M. SERVETUS, *Christianismi Restitutio*, n. p. 1553, p. 671 (I have used the 1790 page by page reprint).

then he repeats it ²⁰. The author was Michael Servetus, whom Calvin burnt at Geneva in that same year, and the work appeared in his *Christianismi Restitutio*. I shall not spend very much time on this extraordinary and original thinker, because he is a tragic example of a strand in history that was cut off. This, his last and largest book, went destroyed nearly as effectually as he was himself, and it is improbable that contemporary or later authors could have known what was in it ²¹. I am speaking of course only of this book, and not of his general influence, which was certainly considerable, particularly on Trinitarian heretics in Poland ²²; and I say this with a faint hope of being proved wrong.

Not only is Servetus' conception of the afterlife very near to Melanchthon's, but also his identification, even more clear and emphatic, of the human soul with medical spirits and its close relationship to the Holy Ghost and the Devil. Moreover, his views on spirits, human and angelic, are remarkably similar to Henry More's and Milton's. But these likenesses are probably due only to common sources. In his later life, probably owing to his friendship with Symphorien Champier, the Lyonnais Platonist, Servetus became an enthusiastic admirer of the Neoplatonists. But he combined his Neoplatonism both with a detailed knowledge of the Greek medical tradition and with an intense desire to recover the lost doctrine of the primitive church, that simple, sensual view of God and man, based on a literal interpretation of the Bible, still surviving in the earliest

²⁰ *Ibid.*, p. 731: « [...] indita sensibus tuis corporeis Deitatis percipiendae virtute, ut indetur post resurrectionem, quando Deum corporalibus his tuis organis vedebis, tanges, gustabis, olfacies, et audies. Audi quid dicam [...] ».

²¹ Cf. E. F. PODACH, *Die Geschichte der Christianismi Restitutio im Lichte ihrer Abschriften*, in *Autour de Michel Servet et de Sébastien Castellion*, ed. B. Becker, Haarlem 1953, pp. 47 sq.

²² See S. KOR, *L'influence de Servet sur le mouvement antitrinitaire en Pologne et en Transylvanie*, *ibid.*, pp. 72 sq.

Fathers, but already becoming over-sophisticated and metaphysical even by the time of Tertullian, and finally ruined by those two abominable, diabolic Fathers, Augustine and Athanasius ²³.

Servetus' main discussion of medical spirits comes in the Fifth Book of his *De Trinitate Divina*, which is devoted to the Holy Spirit. In accordance with tradition, the vital spirits, deriving from blood mixed in the heart with breathed air and the *spiraculum vitae* breathed by God into Adam, are elaborated in the *rete mirabile* into animal spirits. But for Servetus, the animal spirits do not, as usual, thence pass into the ventricles of the brain, but remain encased in very fine arteries, which spread all over the brain and connect with the nerves. These choroid vessels contain the very mind itself (*ipsissimam mentem continent*). The main function of the ventricles is to collect excremental matter from the brain, which eventually passes to the nose ²⁴. If the spirits, i.e. the soul, were in these cavities, they would be in danger of being expelled by blowing the nose or sneezing, for the nostrils connect through the ethmoid bone with the brain, where part of the air breathed is used to cool the soul (*ad ventillandam animam*), i.e. the fiery animal spirits within the vessels ²⁵. These vessels also of course contain blood; for it is written in Deuteronomy 12. 23 (and elsewhere): «The blood is the soul» (*haddam hu' hannephesh*) ²⁶. Thus

²³ Cf. WALKER, *Anc. Th.*, pp. 116 sq.

²⁴ SERVETUS, *Chr. Rest.*, pp. 169-173. Earlier 16th century medical writers had placed the animal spirits in the arteries of the brain and had confined the ventricles to excremental functions, e.g. NICCOLÒ MASSA, *Liber introductorius anatomiae*, Venice, 1536, fos 85-86v, quoted in K. S. PARK, *The imagination in Renaissance Psychology*, 1974 (unpublished M. Phil. dissertation, University of London), pp. 36-37, 39.

²⁵ SERVETUS, *op. cit.*, p. 175: «Si enim in spaciis illis inanibus, vagerentur species et spiritus cum anima, emungendo foras omnia emitterentur, aut saltem per sternutationem».

²⁶ *Ibid.*, p. 170; Deut., 12.23.

Servetus anticipates William Harvey not only in describing the pulmonary circulation of the blood, but also in denying that the cerebral ventricles contain spirits and in confining them to the function of collecting excrement, and also in giving such importance to the blood, though of course he did not, like Harvey, deny the separate existence of spirits.

For Servetus the cerebral ventricles also have another, more sinister function²⁷. Just as the regenerate breathe in the Holy Spirit, which is the breath of Christ (*halitus Christi*), and which renders their animal spirits more lucent, so we may breathe in the Devil (*spiritus nequam*), who then occupies the ventricles and lays siege to the fiery spirits in the vessels, i.e. the mind. That the Holy Ghost should be Christ's breath or vital spirit derives from Servetus' Schwenckfeldian conception of the glorified flesh of Christ, both Christ's spirits and His body being elemental like ours, but, unlike ours, incorruptible. Thus, as God once breathed into Adam the breath of life, so the resurrected Christ breathed the Holy Spirit into the apostles²⁸ (John 20.23: ἐνεφύσησε, also in the Septuagint, Genesis 2.7).

As for Servetus' view of God and the universe, I think that Calvin's accusation was justified, that he held a through-going pantheism, in which a Platonic or Stoic Soul or Spirit of the World was identified with God²⁹. Pantheism like most heresies, as Pascal long ago pointed out, is orthodox provided that at the same time you assert the contrary truth, in this case, God's transcendence; «in Him we live and move and have our being» (Acts 17.28), but also «Verily thou art a God that hidest thyself» (Isaiah 45.15) or the «O altitudo» of Romans 11.33. Servetus does occasionally do this; for example, after insisting on the reality of the Biblical theophanies, which

²⁷ *Ibid.*, pp. 174, 181.

²⁸ *Ibid.*, pp. 181, 182.

²⁹ Cf. WALKER. *Anc. Tb.*, p. 120.

prove that « perceptible forms have appeared in God », he adds ³⁰:

Lest anyone should be such a crude anthropomorphite that he should think God in Himself to be corporeal, we have said that He is truly incorporeal and invisible, but has shown Himself as a person (personaliter), since He is omniform.

But this is exceptional, and ambiguous, and the whole emphasis in his writings is on God's being « an infinite sea of substance, giving being to everything, making everything and maintaining the essence of everything »³¹. Calvin's account of a conversation he had with Servetus while he was under trial is probably not much exaggerated ³²:

For since he said that all creatures are of the very substance of God, just as all things are full of infinite gods — such is the language he was not ashamed to utter, and even to write down — I, being angered by such a gross absurdity, argued against him, « How now, poor man, if someone struck this paving-stone with his foot, and said he was treading on your God, would you not be horrified to have subjected the majesty of God to such an insult? ». Then he said, « I have no doubt that this bench, and this sideboard, and everything you could show me, is the substance of God ... »

The next author I want very briefly to consider, Jean Bodin, is very far indeed from pantheism. Indeed his Judaic monotheism leads to such a totally transcendent God that all the

³⁰ SERVETUS, *Chr. Rest.*, pp. 204-205: « Ne quis vero rudis ita sit anthropomorphita, ut Deum in se esse corporeum existimet, nos vere Incorporeum diximus et invisibilem sed se personaliter exhibuisse, cum sit mens omniformis [...] ».

³¹ *Ibid.*, p. 125: Non est Deus instar puncti, sed est substantiae pelagus infinitus omnia essentians, omnia esse faciens, et omnium essentias sustinens.

³² See WALKER, *Anc. Th.*, p. 120.

works of providence, and many phenomena usually considered natural, such as storms, are performed by God's agents, angels or demons³³. Moreover, Bodin's God is the *only* incorporeal being in the universe. Bodin, though not particularly interested in spirits, is relevant to the lines of thought I am sketching, because for him the human soul is corporeal, as are angels and demons, and the substance of all three plainly derives ultimately from medical spirits. The long discussion of the soul in his *Universae Naturae Theatrum* (1596)³⁴, which, as far as I can understand it, is a fruitless attempt to fit an Aristotelian soul as form of the body with some kind of corporeal soul, ends with the following argument to prove that only God is incorporeal, an argument that is repeated in his *Heptaplomeres*³⁵: Every being is finite except God; the only conceivable way in which anything can be limited is by having a surface, and a surface implies a body; therefore only God is incorporeal. Q.E.D.

Human souls, though corporeal, are separable from the earthly body and survive after death. Since these separated souls, like angels and demons, have surfaces, they must have a shape; what is it? «I have always thought», says Bodin, «that the shape (*figura*) of souls is the same as that of the sun, moon and stars»³⁶. This is both because the sphere is the most perfect solid figure, and because Daniel (12.3) said that the souls of the righteous shall shine like stars³⁷. After death the souls of the righteous become angels, which are the same as Aristotle's active intellect (*intellectus agens*), i.e. spherical, cor-

³³ Cf. WALKER, *Magic*, pp. 171-173.

³⁴ BODIN, *Universae Naturae Theatrum*, Lugduni, 1596, pp. 489 sq.

³⁵ *Ibid.*, pp. 513-514; Bodin, *Colloquium Heptaplomeres*, ed. L. Noack, Suerini Megaloburgiensium, 1857, p. 38.

³⁶ BODIN, *Un. Nat. Th.*, p. 535: «Ego semper existimavi animorum eandem esse figuram quae solis, lunae, stellarum».

³⁷ Daniel, 12.3; cf. BODIN, *Hept.*, pp. 93-94.

poreal minds³⁸. To back this up Bodin, who very seldom cites the New Testament as an authority, quotes Matthew 22.30: «For in the resurrection they neither marry, nor are given in marriage; but are as the angels of God in heaven». Since the only difference between angels and the celestial bodies, which are animated, is that the latter are more often visible to us³⁹, the Daniel text can be brought into agreement with the Matthew one. In any case, the souls of the blessed are up there in the heavens, round, shining and star-like.

For Bodin, as we have seen, everything except God is corporeal. For Henry More, my next author, everything including God is extended⁴⁰. In More's first letter to Descartes, of 1648, arguing against the Cartesian definition of matter or body as an extended thing (*res extensa*), he wrote⁴¹:

Indeed Virgil with his Platonists seems to me to philosophize more happily than even Descartes himself, when, following their opinion, he sang:

«Totamque infusa per artus
Mens agitat molem, & magno se corpore miscet», (The end of our Virgil passage).

More wishes to preserve the distinction between mind and matter, soul and body; but, instead of Descartes's criteria: thinking thing, extended thing (*res cogitans*, *res extensa*), he introduces: for body, impenetrability (tangibility) and divisibility; for soul, penetrability and indiscerptibility (can't be torn to pieces). Both body and soul are extended, because only

³⁸ BODIN, *Un. Nat. Th.*, pp. 537, 544, 523-524.

³⁹ *Ibid.*, p. 551; cf. *Hept.*, p. 91.

⁴⁰ See KOYRÉ, *op. cit.*, Ch. VI.

⁴¹ H. MORE, *Epistolae Quatuor* (in *A Collection of several Philosophical Writings of Dr Henry More*, London, 1712), p. 63: «Sanè felicius mihi videtur cum Platonicis suis Virgilius philosophari quàm Cartesius ipse, cum ex illorum sententia sic cecinerit: Totamque etc.».

something extended can be somewhere and, if something is nowhere, it does not exist. It follows that God is somewhere, and, since He is infinite, He is everywhere. Thus infinite space is one of God's essential attributes; indeed one can say that the incorporeal mind-spirit which fills this space and permeates the corporeal universe *is* God ⁴². Likewise, the incorporeal (in More's sense) soul of man extends over his whole corporeal body and is of the same shape as that body ⁴³.

One might think that here again the subtle, vaporous, but corporeal medical spirits and the incorporeal soul have merged together, producing an extended human soul, and that similarly the Soul and Spirit of the World, combined into the extended soul of a now infinite universe, have become God. In one sense, I think that this is what has happened — in the sense that medical spirits and the Spirit of the World are major factors in the origins of More's extended soul (which he often calls 'spirit') and infinitely extended God. *But* (a very big But) More still keeps and uses the traditional concepts of medical spirits and of a cosmic spirit, or Spirit of Nature, with disastrous results for the tidiness and coherence of his system, since the old concepts have really become logically superfluous.

In More's treatise on the *Immortality of the Soul* (1659) animal spirits play a prominent part. They are clearly corporeal, though aethereal, i.e. like the substance of the heavens, and they are the first instrument of the incorporeal soul ⁴⁴. Both the spirits and the soul extend throughout the body; but, as in traditional faculty psychology, the soul is heterogeneous, having its centre, i.e. *sensus communis*, in the animal spirits contained in the fourth ventricle of the brain ⁴⁵. Sense-perception, however, is performed not only by the spirits in the sense-

⁴² See KOYRÉ, *op. cit.*, Ch. V.

⁴³ MORE, *The Immortality of the Soul* (in A Collection), pp. 25, 165.

⁴⁴ *Ibid.*, p. 95.

⁴⁵ *Ibid.*, pp. 109, 93.

organs but also by the soul, which is also present there ⁴⁶, that is to say, we have two coextensive things simultaneously performing the same function. The only justification for this apparently superfluous doubling of substances is More's assumption that the soul cannot initiate motion, but can only determine the direction of already moving matter, in this case, the constantly agitated spirits.

More argues thus: the soul always uses some part of the body as an instrument; that the soul cannot act independently of the body ⁴⁷

is manifest from hence, that then the change of Air, Distemper and Diseasedness, could not prejudice her [the soul] in her *Inventive* and *purely Intellectual* Operations; but it is manifest that they do, and that a man's Mind is much more cloudy at one time than another, and in one Country than another [...]. If she uses any part of the Body, it must be either these *Animal Spirits*, or the *Brain*. That it is not the *Brain*, the very consistency thereof so clammy and sluggish is an evident demonstration.

Which will have the more force, it we consider what is most certainly true, That the Soul has not any *power*, or else exceeding little, of *moving Matter*; but her peculiar privilege is, of *determining Matter in motion*; which the more subtile and agitated it is, the more easily, by reason of its own mobility, it is determined by her. [...] Wherefore it is plain, that that *motion* or *heat* that the Soul voluntarily confers upon the Body, is by virtue of the *Spirits*, which she, when they are playing only and gently toying amongst themselves, sends forth into the exterior members, and so agitates and moves them.

The spirits are also « the Souls's immediate engine » « of sense in the more remote parts as well as in the head ».

⁴⁶ *Ibid.*, p. 104.

⁴⁷ *Ibid.*, pp. 95-96.

A little earlier in the same chapter More had identified medical spirits with ⁴⁸

the *Fire* which Trismegist (i.e. the *Corpus Hermeticum*) affirms, is the most inward vehicle of the Mind, and the instrument that God used in forming the world, and which the Soul of the world, whenever she acts, does most certainly still use.

A note informs us that by the Soul of the World More does not mean the Neoplatonic third divine hypostasis, but his own plastic Spirit of Nature. This is an incorporeal, but unintelligent, unconscious, forming soul, which causes all vital, not purely mechanical motion in the universe ⁴⁹. Here the piling up of coextensive entities all doing the same thing at the same time is even more astonishing than in his picture of man. First, God as the infinitely extended, in every way infinite and eternal mind; second, the blindly forming, extended, but incorporeal Spirit of Nature; third, the aethereal, but corporeal spirits, which are its first instrument. One important source for More's Spirit of Nature, which I am too ignorant to pursue further, is alchemical and Paracelsian — he himself compares it to the 'Chemists' Archeus' ⁵⁰. But the main source for More's system, as for Servetus', is a strangely corporealized version of a Neoplatonic hierarchy of emanations — the unnecessary proliferation of cosmological principles becomes much cruder and more obvious when they are extended and literally overlap.

In the passage just quoted on man's soul, you may have noticed that More makes the quality of even the most abstract thinking depend on the condition of the animal spirits. This

⁴⁸ *Ibid.*, p. 95; *Corpus Hermeticum*, ed. Nock & Festugière, Paris, 1945, t. I, pp. 121-122 (Tr. X, ch. 18).

⁴⁹ *Ibid.*, p. 98; on the spirit of nature, see MORE, *Opera Omnia*, Londini, 1679, *Op. Philosoph.*, t. I, pp. 301, 328-329 (*Enchiridion Metaphysicum*), and *Imm. of Soul*, p. 212.

⁵⁰ MORE, *Op. Phil.*, I, 301.

is a point he often returns to, and, like Ficino, he stresses the good effect of wine on the spirits, for example ⁵¹:

As for *Imaginatio*, there is no question but that Function is mainly exercised in the chief seat of the Soul, those purer Animal Spirits in the fourth ventricle of the Brain. I speak especially of *that Imagination which is most free*, such as we use in *Romantik Inventions*, or such as accompany the *more severe Meditations* and *Disquisitions* in *Philosophy*, or any other *Intellectual* entertainments. For *fasting, fresh Air, moderate Wine*, and all things that tend to an handsome supply and depuration of the *Spirits*, make our thoughts more free, subtile, and clear.

The condition of the spirits is also of religious importance ⁵²: «it is the *fineness* and *purity* of them [the spirits], that invites and enables her [the soul] to love and look after *Divine* and *Intellectual* objects». Moreover, in the afterlife the soul will still be surrounded by corporeal spirits, and the condition of these will determine whether the soul lives in the air surrounding the earth, together with lower demons and ghosts, or can ascend to the aethereal regions of the stars and beyond ⁵³. Here More is overtly following the Neoplatonic doctrine of the astral body, the starry vehicles or garments of the soul ⁵⁴. But his starting point is our passage from Aristotle about the fertility of semen ⁵⁵, which, as More notes, plays such an important part in Harvey's *De Generatione Animalium* ⁵⁶. More takes Aristotle's foamy body in the semen (τὸ ἀφρώδες) to mean that the spirits are airy as well as celestial and aethereal.

⁵¹ MORE, *Imm. of Soul*, p. 106; cf. pp. 108, 149.

⁵² *Ibid.*, p. 159.

⁵³ *Ibid.*, pp. 160-161.

⁵⁴ For a bibliography on this, see WALKER, *Astral Body*, p. 119 n. 5.

⁵⁵ MORE, *ibid.*, p. 124.

⁵⁶ *Ibid.*, p. 127.

The soul, therefore, in its afterlife may have a vehicle that is predominantly either airy or aethereal, the difference between the two being not one of species, but only of degree of purity ⁵⁷. Only a very few saints acquire an aethereal vehicle immediately after death; for ⁵⁸ « by a just *Nemesis*, the Souls of men, that are not Heroically vertuous, will find themselves restrained within the compass of this caliginous *Air* », where their airy vehicles, if the souls are not good enough to transform them into aethereal ones, will eventually dissolve or be reborn into an earthly body ⁵⁹.

That these Neoplatonic vehicles are of the same substance as medical spirits is quite clear ⁶⁰. What happens at death, More suggests, is as follows ⁶¹:

when a man dies, the Soul may collect herself, and the small residue of spirits (that may haply serve her in the inchoation of her new Vehicle), either into the heart, whence is an easy passage into the Lungs, and so out at the mouth; or else into the Head, out of which there are more doors open than I will stand to number.

Ralph Cudworth, in his *True Intellectual System of the Universe* (1678), does not commit himself to More's extended mind, though he mentions it quite sympathetically ⁶², and he does have Plastic Nature very like More's Spirit of Nature. He is also more cautious about the astral body and the afterlife. But he expounds the Neoplatonic theories of aethereal and aerial vehicles very fully, and frequently points out how they can be brought into conformity with Christian doctrine, equating

⁵⁷ *Ibid.*, p. 123.

⁵⁸ *Ibid.*, p. 161.

⁵⁹ *Ibid.*, pp. 244-245.

⁶⁰ *Ibid.*, pp. 145-146, 149, 152.

⁶¹ *Ibid.*, p. 129.

⁶² CUDWORTH, *The True Intellectual System of the Universe*, London, 1743 (2nd ed.), p. 833.

them with St Paul's spiritual and resurrection body⁶³. For Cudworth too this spiritual body is the same as medical spirits, as one can see from the following passage, where he deals satisfactorily, if rather peremptorily, with objections that might arise from the Christian doctrine of the resurrection of the body⁶⁴:

it is not at all to be doubted, but that *Irenaeus*, *Origen*, and those other ancients, who entertained that opinion, of souls being clothed after death with a certain thin and subtile body, suspected it not in the least to be inconsistent with that of the future resurrection; as it is in no way inconsistent for one, who hath only a shirt or a waistcoat on, to put on a suit of clothes, or exterior upper-garment. Which will also seem the less strange, if it be considered, that even here in this life, our body is, as it were, twofold, exterior and interior; we having, beside this grossly tangible bulk of our outward body, another interior spirituous body, the soul's immediate instrument both of sense and motion; which latter is not put into the grave with the other, nor imprisoned under the cold sods.

Modern scholars, such as Koyré, McGuire and Rattansi, and Brian Copenhaver⁶⁵, have suggested convincingly that Henry More, whom Newton knew personally, provides at least an important background for Newton's ideas about space and the deity; and we know that Newton had read Cudworth's book carefully⁶⁶. I would suggest that, not only More and Cudworth, but also the whole spirits tradition might help to

⁶³ *Ibid.*, pp. 794-798.

⁶⁴ *Ibid.*, p. 806.

⁶⁵ KOYRÉ, *op. cit.*, pp. 159 sq.; for McGuire's articles, and for passages from Newton cited below, see WALKER, *Anc. Th.*, pp. 255-263.; BRIAN COPENHAVER, *Jewish Theologies of Space in the Scientific Revolution*, in « *Annals of Science* », 37 (1980), pp. 489-548.

⁶⁶ See J. E. MCGUIRE and P. M. RATTANSI, *Newton and the Pipes of Pan*, in « *Notes and rec. of the Royal Society* », London, 21 (1966), pp. 108-143.

solve the many problems of interpretation presented by Newton's ideas on space and God, and, in close connexion with these, by his speculations about aether. I am acutely aware of my own incompetence to solve any of these problems; and even for competent scholars the difficulties are formidable, both because of Newton's extreme caution about committing himself to any theory that might lay him open to attack, and because of the great ocean of unpublished manuscripts. But I want to end this paper by just indicating what kind of problems I mean.

I am thinking, first, of passages where Newton writes of infinite space as God's *sensorium*, the passages that caused so much trouble in the Samuel Clarke - Leibniz correspondence; and secondly, of Newton's later speculations about an aethereal medium in the queries added in the 1717 English *Opticks* (Qu. 18-24), and in the final paragraph of the General Scholium added to the 1713 edition of the *Principia*; and finally of the doubtful meanings of 'spirits' in Newton's alchemical papers⁶⁷.

With regard to the first, Newton wrote, in one of the queries added to the 1706 Latin edition of the *Optics*, that the intricate contrivances manifest in animals' bodies must be the effect of the wisdom and skill of a powerful ever-living Agent; who, being in all places, is more able by his will to move the bodies within his boundless uniform sensorium, and thereby to form and reform the parts of the universe, than we are able by our will to move the parts of our own bodies.

Although, in an earlier query (No. 28), Newton had explained that by sensorium he meant, not the sense-organs, but the place where sense-impressions are perceived by the soul (in humans, the brain), this micro-macrocosm analogy, together with other passages where Newton stresses the omnipresence of God, does look like making God into the Spirit of Soul of

⁶⁷ See B. J. T. DOBBS, *The Foundations of Newton's Alchemy*, Cambridge, 1975.

the World, or like More's space-God. And, after Leibniz's accusations of pantheism, Newton added, in the 1717 *Opticks*, a warning against considering the world «as the body of God, or the several parts thereof as the parts of God». If we take this warning seriously, then Newton's analogy is singularly misleading.

With regard to Newton's aether, one basic problem, which still worries modern scholars, is why he returned in about 1707 to the speculations about the aether he had made in the 1670s, and published versions of them in 1713 and 1717. For, from the first edition of the *Principia*, 1687, up to the Latin edition of the *Opticks* in 1706, not only did he entirely abandon such hypotheses, but he also clearly realized the insuperable objection to any attempt to give a mechanical explanation of gravitation by means of a material aether, namely, that it involves an infinite regress, since the aether itself, if it is ordinary matter, however subtle and rare, will have gravity, to explain which a still finer aether must be postulated, and so on. One reason for his returning to the aether was certainly his interest in Hauksbee's electrical experiments, as Henry Guerlac has shown, and it is now clear that the aether or spirit in the final paragraph of the 1713 *Principia* is electrical. But from the new *Queries* in the 1717 *Opticks* it seems clear that, first, he did not consider the electrical spirit to be weightless, but only «so rare and subtle [...] as by its emission to cause no sensible diminution of the weight of the electrick body», and, secondly, that the aether he is using to explain gravity, whether it is the same as electricity or not, consists of ordinary material particles and acts mechanically, since it causes gravitation by having fields of varying density. Thus the puzzle remains, and I have no solution to offer.

But I think you will agree that this conclusion to the 1713 *Principia*, which Rupert and Marie Boas Hall find «oracular and confusing» and «without doubt the most puzzling of

Newton's declarations of his aetherial hypothesis », is to us at least reassuringly familiar:

It would be proper to add something about a certain very subtle spirit, which pervades and lies hidden in crass bodies, and by whose power and actions the particles of bodies mutually attract each other at minute distance and, when brought into contact, cohere; and electric bodies act at greater distances, both by repelling and attracting small neighbouring bodies; and light is emitted, reflected, refracted, inflected and heats bodies; and all sensation is aroused, and the limbs of animals are voluntarily moved by the vibrations of this spirit, propagated through the solid capillaments of the nerves from the external sense-organs to the brain, and from the brain to the muscles. But these things cannot be expounded in a few words; nor is there a sufficient abundance of experiments by which the laws of the actions of this spirit must be accurately determined and shown.