MAX-PLANCK-INSTITUT FÜR WISSENSCHAFTSGESCHICHTE
Max Planck Institute for the History of Science

PREPRINT 188 (2001)

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Extraordinary Bodies and the Physicotheological Imagination

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A demonstration of the being and attributes of God, from his works of creation. Such is the definition of "physicotheology" given in the subtitle of William's Derham's Boyle Lectures for the years 1711 and 1712.[1] In that sense, *physicotheology* is synonymous with *natural theology* —"the knowledge we have of God from his works, by the light of nature, and reason."[2] The very idea that there can be knowledge of God without revelation, and the ensuing distinction between natural and supernatural or revealed theology, have scholastic roots. The novelty of seventeenth- and eighteenth-century physicotheology was its dependence on the scientific knowledge of nature and its focus on the "cosmological" proof (concerning the necessity of God as first cause), and especially on the "teleological" proof (based on the existence of order and purpose in the universe), at the expense of the "ontological" proof (which is derived a priori from the idea of God). Its assumptions are that everything has been created, and designed exactly as it is, for a purpose; and that the harmony and adaptiveness observed in the whole of Creation, as well as in each of its parts, manifest the goodness, wisdom, and indeed existence of God. For all its marvelling before the "spectacle of nature" (as reads the title of abb Pluche's 1732-1742 bestseller), physicotheology implied active research into the things of God by means of collection, description, classification, experimentation, and exposition.

These postulates and methods apply to both nature and culture. As Derham noted, no "mechanical Hypothesis" accounts for "Discoveries and Improvements in all

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* In Gianna Pomata and Lorraine Daston, eds., *Nature on Display in Eighteenth-Century Europe*, Berlin, Berlin Verlag, Series "Concepts and Symbols of the Enlightenment," forthcoming.

[1] William Derham, *Physico-Theology: Or, A Demonstration of the Being and Attributes of God, from his Works of Creation*, London, printed for W. Innys, 1713. In his last will, the English natural philosopher Robert Boyle, a founding member of the Royal Society, endowed an annual series of eight sermons to prove the Christian religion "against Infidels," without entering into controversies among Christians themselves. Of the lectures preached between 1692 and 1793, the most famous and popular ones ("natural theologies" by Derham, Bentley, and Clarke, mentioned below) followed Boyle's own example of incorporating new scientific developments into apologetics. See John J. Dahm, "Science and Apologetics in the Early Boyle Lectures," *Church History* 39 (1970), pp. 172-186.

[2] Ephraim Chambers, *Cyclopaedia: or, an universal dictionary of arts and sciences . . .*, 4th ed., London, printed for D. Midwinter . . ., 1741, vol. 2, s.v. "Theology, natural."

curious Arts and Businesses;" the invention of printing or the progress of Christianity were for him instances of Providence.[3]

Historians have come to consider that natural theology helped, rather than hindered science.[4] They have charted the success and impact of physicotheology, and inventoried its many varieties, from akridotheology (locusts), astrotheology and bombychotheology (silk-worms), through lithotheology (stones), melittotheology (bees) and sismotheology, to phytotheology (plants), pyrotheology (fire) and testaceotheology (conchylia) — to mention only one, particularly popular, title-formula. The objects of these, and numerous other physicotheological treatises were firmly rooted in the realm of the natural and the ordinary. The movements of the planets or those of the silk-worm, the structure of plants or that of the bee-hive were studied so as to reveal universal laws.[5]

Nothing in those laws, except their origin, and sometimes also their continuation by an act of God's will, was supposed to stand outside nature. Some room was given to the preternatural, i.e. to events that, though abnormal, exceptional and extraordinary, can

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[3] Derham, *Physico-Theology* (note 1 above) pp. 318-319.

[4] John Hedley Brooke, "Science and the fortunes of natural theology: some historical perspectives," *Zygon* 24 (1989), pp. 3-22; *Science and religion. Some historical perspectives*, Cambridge, Cambridge University Press, 1991, chs. 4 and 6. See also Udo Krolzik, "Das physikotheologische Naturverst ndnis und sein Einflu§ auf das naturwissenschaftliche Denken im 18. Jahrhundert," *Medizinhistorisches Journal* 15 (1980), pp. 90-102.

[5] As far as I can tell, the most complete overviews of eighteenth-century physicotheology are Wolfgang Philipp s chapter "Der Traditionsstrom der Physikotheologischen Bewegung" in his *Das Werden der Auflk rung in theologiegeschichtlicher Sicht*, G ttingen, Vandenhoeck & Ruprecht, 1957; and Philipp, "Physicotheology in the age of Enlightenment: appearance and history," *Studies on Voltaire and the Eighteenth Century* 57 (1967), pp. 1233-1267. Useful sketches are given by Jacques Roger, *Les sciences de la vie dans la pens e fran aise du XVIIIe si cle* (1963), Paris, Albin Michel, 1993, pp. 224-249; and, with emphasis on other materials, by Udo Krolzik, "Physikotheologie," in Gerhard M ller et al. (Eds.), *Theologische Realenzyklop die*, Berlin/New York, Walter de Gruyter, vol. 26 (1996), pp. 590-596. To my knowledge, the most extended study of Enlightenment (German) physicotheology is Sara Stebbins, *Maxima in minimis. Zum Empirie- und Autorit tsverst ndnis in der physikotheologischen Literatur der Fr haufkl rung*, Frankfurt-am-Main, Peter Lang, 1980. There seems to be no equivalent for other linguistic areas. For an instructive study that includes, but does not focus on physicotheology, see Charles Coulston Gillispie, *Genesis and Geology. A Study in the Relations of Scientific Thought, Natural Theology, and Social Opinion in Great Britain, 1790-1850* (1951), Cambridge, Mass., Harvard University Press, 1996. Relevant elements concerning France are included in Albert Monod, *De Pascal Chateaubriand. Les d fenseurs fran ais du christianisme de 1670 1802* (1916), Geneva, Slatkine, 1970. Didier Masseau briefly situates natural theology in the larger apologetic context of the first half of the eighteenth century in *Les ennemies des philosophes. L antiphilosophie au temps des Lumi res*, Paris, Albin Michel, 2000. Of considerable historical interest are two eighteenth-century bibliographies (both covering a long time-span): Johann Georg Walch, *Bibliotheca theologica selecta litterariis adnotationibus instructa*, t. I, cap. V (De scriptis theologiae polemicae), sectio V (De scriptis controversiarum cum atheis), // III-IV (pp. 690-704), Jena, sumtu viduae Croeckerianae, 1757; and especially Johann Albert Fabricius, "Verzeichni§ der Alten und Neuen Scribenten die sich haben lassen angelegen seyn durch Betrachtung der Natur, und der Gesch pffe die Menschen zu Gott zu f hren," in William Derham, *Astrotheologie, oder Himliches Vergn gen in Gott . . .*, trans. by Fabricius from the 5th English edition, Hamburg, bey Theodor Christoph Felginers Wittwe, 1732, pp. XIII-LXXX.

be explained by the usual laws of nature.[6] In the voluminous footnotes of his *Physico-Theology*, Derham often reports unusual phenomena: frozen bodies, whispering places, feats of memory or strength, a tongueless boy who speaks, people who distinguish colors by touch... Since men of gigantic size have existed only as "Rarities, and Wonders," the story of Goliath is credible, but Biblical relations about races of giants are not.[7] Bloody and other prodigious rains are "praeternatural and ominous Accidents" that, "if strictly pried into, will be found owing to natural Causes."[8] The same applies to the reanimation of persons drowned or hanged.[9] At the beginning of history, a longevity of 900 years and more was necessary to populate rapidly the newly-created Earth. It decreased with population growth, reaching the common maximum of 70 or 80 years "when the World was fully peopled after the Flood." Methuselah, Abraham, and more recent instances of great age are exceptions; the story of the Wandering Jew, or Roger Bacon's "of one that lived 900 Years by the help of a certain Medicine," are "fabulous."[10]

The reasoning illustrated by Derham combined a focus on the natural and the naturalistic explanation of unusual phenomena with confidence in Scripture and scepticism about stories (even Biblical) that did not seem to evince natural laws. It thus tended to exclude the supernatural and the miraculous. The physicotheological approach and sensibility as they developed in seventeenth-century England fit in the metaphysical, ontological, and epistemological framework of the what members of the Royal Society called *new philosophy*, and shared its emphasis on the invariability, universality and simplicity of the laws of nature. Throughout the eighteenth century, natural theology remained particularly strong in England and Germany. In the British context, it culminated in the eight Bridgewater Treatises (1833-1840), funded by the Reverend Francis Henry Egerton, last Earl of Bridgewater, for writing and publishing works "On the Power, Wisdom and Goodness of God as manifested in the Creation."

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6 On natural/preternatural, see Lorraine Daston, "The nature of nature in early modern Europe," *Configurations* 6 (1998), pp. 149-172; "Preternatural philosophy," in L. Daston (Ed.), *Biographies of Scientific Objects*, Chicago, University of Chicago Press, 2000.

7 Derham, *Physico-Theology* (note 1 above), pp. 330-331. Derham suggests that the word *nephilim*, or "giants," can be interpreted metaphorically (as designating monsters of impiety and wickedness), and that the perception of gigantic size might have been partly determined by the fear of those who observed them.

8 Derham, *Physico-Theology*, p. 23. The raining blood turned out to be insect excrement.

9 Derham, *Physico-Theology*, pp. 156-157.

10 Derham, *Physico-Theology*, pp. 172-174.

In Germany, physicotheology was a popular and academically respectable genre at least until Immanuel Kant's radical critique in the 1780s. Kant explained that the argument from design concerns only the form, not the substance of the universe. Consequently, it can "establish a highest architect of the world, who would always be limited by the suitability of the material on which he works, but not a creator of the world."[11] Physicotheology, he explained in his 1790 *Critique of judgment* (⁄ 85), can be no more than a physical teleology, and reveal nothing about an ultimate purpose of creation. He nevertheless encouraged it as a useful and rational way of elevating the mind "from the conditioned to the condition, up to the supreme and unconditioned author;" it would therefore be, he added, "not only discomfiting but also quite pointless to try to remove anything from the reputation" of the physicotheological proof, as it "is the oldest, clearest and the most appropriate to common human reason," and "always deserves to be named with respect."[12]

Natural theology was then understood to demonstrate the existence and attributes of God only with "moral certainty." This category, originally focused on testimony, was distinct from mathematical and physical certitude. As John Wilkins explained in *Of the Principles and Duties of Natural Religion* (1675), the objects of moral certainty are

> not capable of the same kind of Evidence . . . so as to necessitate every man's assent, . . . yet they may be so plain, that every man whose judgment is free from prejudice will consent to them. And though there be no natural necessity, that such things must be so, and they cannot possibly be otherwise, . . . yet may they be so certain as not to admit of any reasonable doubt concerning them.[13]

Moral certainty covered "the everyday conclusions of a reasonable and impartial man considering the relevant data," as well as "the kind of knowledge employed in the law courts, in history, in merchants' decisions, and in religion."[14]

There existed a second realm of physicotheology. It does not, however, seem to have been treated as a separate genre in the seventeenth and eighteenth centuries;[15] nor have later historians recognized it as such. The reason might be that its function was not

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[11] Immanuel Kant, *Critique of pure reason* (1781), trans. and ed. Paul Guyer and Paul Wood, Cambridge, Cambridge University Press, 1998, A626-627, p. 581.

[12] Kant, *Critique*, A623-624, pp. 579-580.

[13] Quoted in Barbara J. Shapiro, *Probability and Certainty in Seventeenth-Century England. A Study of the Relationships Between Natural Science, Religion, History, Law, and Literature*, Princeton, Princeton University Press, 1983, p. 85-86. Ch. 3 is especially relevant for our topic.

[14] Shapiro, *Probability*, p. 81.

[15] There is no special rubric for it in eighteenth-century bibliographies: see Walch, *Bibliotheca*; Fabricius, "Verzeichni§" (note 5 above).

to know God "from his works," but to elucidate a particular category of events, situated at the crossroads of the supernatural, the preternatural, and the natural. Its purpose was to render the event —whether past (such as the viriginal conception of Jesus) or future (such as the general resurrection) —more plausible, acceptable, believable. Hypothetical explanations were sufficient for that purpose; as the Dutch naturalist, philosopher and mathematician Bernard Nieuwentijt pointed out in connection with the resurrection, "A bare Hypothesis is sufficient to shew the Possibility of Any Thing."[16] Thus, the goal of physicotheology (in this sense) was not to demonstrate that anything had or will occur, but merely to increase the moral certainty attached to a past or future occurrence.[17]

The ultimate subject-matter of this physicotheological genre was supernatural. Nevertheless, with respect to the kind of phenomena it considered, it was closest to preternatural philosophy. By the late seventeenth century, not only did it appeal to the usual laws of nature, but also emphasized the universality of the mechanisms at work in the preternatural phenomena through which the supernatural was realized. The resurrection of the body, for example, is unequivocally supernatural, and a "mystery of the faith," i.e. a revealed truth unknowable by reason alone. It will eventually take place thanks to the intervention of God. But it is also a preternatural event, something that will happen "extraordinarily (as to the ordinary course of nature) though no lesse naturally."[18] To the extent that natural laws will participate in the production of resurrected bodies, the supernatural fact involves a preternatural dimension that must be analyzed within the framework of natural philosophy. I shall here try to describe how such amalgamation and interfusion work in the physicotheology of extraordinary bodies, and to suggest their significance for understanding Enlightenment changes in the relations between knowledge and belief, and bodily and personal identity.

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16 Bernard Nieuwentijt, *The Religious Philosopher, or the Right Use of Contemplating the Works of the Creator* . . . (1714), trans. J. Chamberlayne, London, 1718, vol. 3, Contemplation XXVIII (Of the Possibility of the Resurrection), p. 1049.

17 I will reserve *natural theology* to works such as Derham's, and will generally use *physicotheology* for the other genre (it will be clear when I don't). I agree with Irmgard M sch's criticism of authors who extend the notion of physicotheology to almost any connection between science and religion; see the discussion in I. M sch, *Geheiligte Naturwissenschaft. Die Kupfer-Bibel des Johann Jakob Scheuchzer*, G ttingen, Vandenhoeck & Ruprecht, 2000, pp. 21-30. Nevertheless, M sch's identification of physicotheology with natural theology seems unduly restrictive. It excludes materials, such as those examined here, which in the seventeenth and eighteenth century were clearly recognized as physicotheological.

18 Meric Casaubon's characterization of the preternatural in *A Treatise concerning enthusiasm* (1655), quoted in Daston, "Preternatural philosophy" (note 6 above), p. 17.

Anatomy and the Incarnation

By virtue of the foundational doctrine of the Incarnation, the human body plays a major role in the Christian economy of salvation.[19] First, the Christ is the Word made flesh (John 1.14) —not simply a god in human form, but a being endowed with two natures, and one, totally human carnal body. The Incarnation is precisely this "hypostatic" union of two substances or natures (each retaining its own properties) so as to make one Person. As the Council of Chalcedon decreed in 451, Jesus Christ is consubstantial with humans according to his humanity, and consubstantial with God according to his divinity. The Incarnation determines the dignity and anthropological significance of the body, a "temple of the Holy Spirit" (I Cor. 6.15) to be respected and cared for. This applies, in life and death, to ordinary human bodies, whose "incomparable Contrivance and curious Structure" thus became one of the principal things of nature whose examination should lead humans "to magnify the Creator's Goodness, and with suitable ardent Affection to be thankful to him."[20]

Following Cicero and the Stoic tradition, natural theologians elaborated analogies for the providential ends they perceived in the universe.[21] The most popular one is probably that of the watchmaker. In his 1802 *Natural Theology: or, Evidences of the Existence and Attributes of the Deity, Collected from the Appearances of Nature*, the English theologian William Paley claimed that the study of the mechanism of a watch would lead to the "inevitable" inference "that the watch must have had a maker." (The comparison was commonplace, but Paley s late and widely-read treatise gave it its most sustained development.) Discovering that the watch was not made immediately by an artificer, but somehow generated by another watch, would not account for the marks of "design and contrivance." Only the existence of a "contriver" could do that. Now, Paley believed that his reasoning about the watch could "be repeated with strict propriety

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[19] I am not concerned here with theological controversies. Largely because it represents the most "embodied" version of Christian theology and anthropology, I will stick to the Christian *tradition* as most recently illustrated in the Catholic Catechism of 1992. The Roman Catholic Church considers that certain revealed truths are not (or at least not clearly or fully) contained in the Bible, but that they are formulated and elucidated in oral traditions and theological writings. As highlighted by the scholarly apparatus characteristic of official Church documents, the authority of the Church is legitimized on the basis of past texts, treated so as to bring about a "tradition," a continuity of content and interpretation.

[20] Derham, *Physico-Theology* (note 1 above), p. 473. See Andreas-Holger Maehle, "'Est Deus ossa probant' — Human Anatomy and Physicotheology in 17th and 18th Century Germany," in nne B umer and Manfred B ttner (Eds.), *Science and Religion / Wissenschaft und Religion*, Bochum, Universit tsverlag Dr. N. Brockmeyer, 1989.

[21] Cicero, *De natura deorum*, Book II. See also David Foster, "'In every drop of dew': Imagination and the rhetoric of assent in English natural religion," *Rhetorica* 23 (1994), pp. 293-325; the discussion of natural theology and the classical tradition starts on p. 311.

concerning the eye, concerning animals, concerning plants, concerning, indeed, all the organized parts of the works of nature."[22] The argument from design therefore applied to each organ and organism considered by and for itself, in the perspective of a resolutely anthropocentric and optimistic teleology. As explained in a widely-used eighteenth-century textbook, the primary goal of anatomy, is the glory of God —its purpose, to contemplate and admire in the human and animal body the wonderful works of the Supreme Deity; to prove against Atheists the existence and widsom of the Creator; and to encourage our veneration towards Him. Descriptive anatomy could be therefore justly called "theological."[23] Whether Galenic or not in their theories and practices, anatomists adhered to Galen's claim that the usefulness of the parts of the body revealed the wisdom and skill of an intelligent creator, and that anatomy was the source of a "perfect theology."[24]

Thus, in his influential *The Wisdom of God Manifested in the Works of the Creation*, the Anglican priest and naturalist John Ray emphasized the form and disposition of the members and organs of the body for use, ornament and mutual assistance. The human body, he explained, is "the effect of Wisdom, because there is nothing in it deficient, nothing superfluous, nothing but hath its End and Use."[25] Imagine the confusion in human affairs that would follow if men's faces were "as Eggs laid by the same Hen"![26] In 1692, the year following the publication of Ray's *Wisdom*, Richard Bentley inaugurated the Boyle Lectures, devoting three of his eight sermons to a "confutation of atheism from the structure and origin of the human bodies." That they

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[22] William Paley, *Natural Theology: or, Evidences of the Existence and Attributes of the Deity, Collected from the Appearances of Nature* (1802), ch. 5.

[23] "Finis anatomes multiplex est: *primarius* tamen est operum mirabilium Supremi Numinis in corpore humano aliorumque animalium cognitio et admiratio: cum artificiosissimae fabricae contemplatio, partium admiranda figura, connexio, communicatio, actio et usus, Creatoris non solum existentiam, sed et immensam et stupendam sapientiam manifestissime, contra Atheos, demonstrent, et ad cultum ac venerationem ejus invitent; ideoque *finis primarius Anatomiae gloria Deo esto*. Atque hoc sensu *Anatomia philosophica*, aut *physica*, imo *theologica* vocari potest, omnibus verae sapientiae ac theologiae cultoribus utilissima." Lorenz Heister, *Compendium anatomicum, Totam rem Anatomicam brevissime Complectens*, Edimburgh, sumptibus Gul. Creech et Gul. Schaw, 1777 (1st ed. 1717), p. 3 (/ 8).

[24] *On the usefulness of the parts of the body* (*De usu partium*), especially Book XVII. That anatomy in the Renaissance was intended to show God's providence and action, and should not be considered a secular activity or secularizing discipline is a recurrent theme in Andrew Cunningham, *The Anatomical Renaissance. The Resurrection of the Anatomical Projects of the Ancients*, Aldershot, Scolar Press, 1997.

[25] John Ray, *The Wisdom of God Manifested in the Works of the Creation* (1691), Hildesheim, Georg Olms, 1974, p. 155. See Lisa M. Zeitz, "Natural Theology, Rhetoric, and Revolution: John Ray's *Wisdom of God*, 1691-1704," *Eighteenth-Century Life* 18 (1994), pp. 120-133.

[26] Ray, *Wisdom*, pp. 168-169.

included more teleology and metaphysics than anatomy did not prevent him from tautologically concluding that "these admirable fabrics of our bodies" cannot be ascribed to the "fatal motions of fortuitous shufflings of blind matter," but, "beyond controversy, to the wisdom and contrivance of the almighty Author of all things."[27] As Christian Wolff emphasized in a treatise whose title echoed Galen's "on the usefulness of the parts of the body," God's intentions show everywhere in the functioning of all and every part of the body.[28]

One advantage of such treatises might have been that they did not call for the visualization of bloody, confusing and unsavory open corpses.[29] Conversely, for physicians, physicotheology had the virtue of justifying dissection. Lorenz Heister, the Leipzig professor of anatomy, surgery and medicine whose textbook was mentioned above, expanded the sources for the knowledge of God to such organs as the intestines, the male and female genitals, and the female mammary glands. His invitations to public anatomies typically spoke *de cognitione Dei ex...* followed by the names of the organs to be examined.[30] Healthy or diseased, these organs, and the bodies from which they were extracted, illustrated the ordinary structure and functions of the human organism.

The history of salvation, however, depends largely on extraordinary bodies. Jesus, to begin with, was a woman's son, but he was also God, and was conceived by the Holy Ghost. Mary his mother stayed a virgin through conception and birth. By virtue of his humanity, the Christ was subjected to the natural necessity of death and bodily defects. He therefore suffered and died like a man; but he then resurrected with his own physical body, and his resurrection announced and prefigured the general resurrection of embodied humans at the end of time. Finally, eternal life according to Christianity is

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[27] Richard Bentley, *The Folly and Unreasonableness of Atheism demonstrated from the Advantage and Pleasure of a Religious Life, The Faculties of Human Souls, The Structure of Animate Bodies, and the Origin and Frame of the World* (1693), in Bentley, *The Works*, ed. Alexander Dyce (1836-1838), vol. 3 (Theological Writings), Hildesheim, Georg Olms, 1971, p. 118.

[28] Christian Wolff, *Vern nfftige Gedanken von dem Gebrauche der Theile in Menschen, Thieren und Pflantzen* (1725; known as *Deutsche Physiologie*), Hildesheim, Georg Olms, 1980 (= Wolff, *Gesammelte Werke*, I. Abt., Bd. 8), Vorrede [pp. 3-4] and part I, ch. 1 (Von Gottes Absichten beym Leibe der Menschen und der Thiere).

[29] Presenting his physicotheologically motivated treatise of human anatomy, the learned Jesuit Herv s was on this point explicit: "Su lectura no necesita que el lector forme en su imaginaci n aquella espantosa idea del cad ver humano, que suele excitar el nombre de anatom a. Destierre de su fantas a toda imagen cadav rica . . . y convierta su atenci n solamente s mismo, su cuerpo viviente . . . ." Lorenzo Herv s [y Panduro], *El hombre f sico, Anatom a humana f sico-filos fica*, Madrid, en la Imprenta de la Administraci n del Real Arbitrio de Beneficiencia, 1800, vol. I, p. 2.

[30] On Heister and others who promoted the theological value of anatomy and justified dissections on physicotheological grounds, see Maelhe, "Est Deus" (note 20 above). For a list of Heister's writings, see Christian-Gottlieb J cher, *Allgemeines Gelehrten-Lexikon*, 2. Erg nzungsband (1787), Hildesheim, Olms, 1998, s.v. "Heister (Laurentius)."

neither a transmigration and reincarnation of souls, nor a disembodied persistence of spiritual substances, but a life in bodies said to be "spiritual" (because absolutely governed by the soul and free from the desires of the flesh), yet materially identical to the corresponding terrestrial bodies. These extraordinary bodies have been a rich source of physicotheological wonder and inquiry. Given the nature of its objects, such inquiry operated on boundaries it constantly straddled and crossed. A mother who is a virgin, a god who is a man, dead who are alive, and spiritual bodies made of flesh do not exactly define clear-cut conceptual domains, but, on the contrary, map territories characterized by ambiguity, paradox, and, especially, oxymoron.

Mother and Virgin

> . . . is it not, in fact, just as humiliating to have a *mother*, as it is to have a *father*; for it is nothing more than the *body* that is concerned in the question?
>
> Joseph Priestley, 1786

In the late eighteenth century, Unitarian Joseph Priestley thought it both purposeless and unsupported by evidence, and Thomas Paine characterized it as a "blasphemously obscene" story.[31] In the twentieth, anthropologist Edmund Leach related it to a transcultural structure, "the metaphysical topography of the relationship between gods and men."[32] Be that as it may, the virginal conception and birth of Christ is a major element of Christian doctrine as it evolved in the first four centuries of the Church. Mary, the mother of Christ, was virgin *ante partum*, *in partu*, and *post partum*. The doctrine soon revealed acute physicotheological quandaries. By the thirteenth century, Thomas Aquinas dealt with them through the lens of Aristotelian physiology. To the objections against the belief that the flesh of Christ was conceived "of the Virgin's purest blood," he replied that males furnish the active principle of generation, and females the matter (a refined blood in Aristotle's view). Jesus's being born of a woman was natural, but his being born of a virgin was "above the laws of nature." It therefore belongs to the "supernatural mode" of his generation that its active principle

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[31] Joseph Priestley, *An History of Early Opinions Concerning Jesus Christ* (1786), book III, ch. 20, section I, in John T. Rutt (Ed.), *The Theological and Miscellaneous Works of Joseph Priestley* (1817-1831), vol. 7, New York, Kraus Reprint Co., 1972. Thomas Paine, *The Age of Reason: being an investigation of true and fabulous theology* (1795), part II, ch. 2, "The New Testament."

[32] Edmund Leach, "Virgin Birth," in *Genesis as Myth and Other Essays*, London, Jonathan Cape, 1969, p. 86.

was God's power, and to its "natural mode" that the matter from which his body was conceived "is similar to the matter which other women supply for the conception of their offspring."[33] In other words, the Christ's conception was natural with respect to the matter of his body, and "entirely miraculous" with respect to the active generating power. "And since judgment of a thing should be pronounced in respect of its form rather than of its matter: and likewise in respect of its activity rather than of its passiveness: therefore is it that Christ's conception should be described simply as miraculous and supernatural, although in a certain respect it was natural" (*Summa*, 3a, 33, 4).

This of course does not exhaust Aquinas's discussion. Suffice it to say that the essential of the physicotheological *probl matique* as it still appears in the Enlightenment lies at the same intersection of the natural and the supernatural. Although Christ's birth from a woman was in accordance to the laws of nature, his being born of a virgin was above them; the preparation of the matter and Jesus's stay in Mary womb's followed natural laws, yet the instantaneous formation of His body was a supernatural manifestation of the active power of the Holy Ghost. The Virgin was therefore a man's mother, but since the Divine Person assumed a human nature at the very beginning of the conception, she also was the Mother of God. By the eighteenth century, Aristotelian hylomorphism had been generally abandoned. Nevertheless, in some versions of ovism, the male remained the active being that engenders and the female, the passive one out of whom the active generates.[34] The role of the male semen was now to stimulate the development of a preformed organism in the female egg. For the purposes of understanding the virginal conception, such a theory was equivalent to, and just as practical as Aquinas's.

In 1742 appeared in Amsterdam (in fact, Paris) a *Physicotheological dissertation concerning the virginal conception of Jesus Christ in the bosom of the Virgin Mary, his mother*.[35] Its author, one abb Jean Pierquin (1672-1742) had already published memoirs about questions of astronomy, hydrology, geology and botany, as well as on

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[33] *Summa Theologica*, 3rd part, question 34, article 5. I have used the online edition of St. Thomas Aquinas, *Summa Theologica*, "literally translated" by Fathers of the English Dominican Province, 2nd ed. (1920), <http://www.newadvent.org/summa>. Further references (including part, question, and article) will be given in the text.

[34] See especially Aristotle, *Generation of animals*, I, XX. On the late seventeenth-century renewal of the Aristotelian influence, see Roger, *Les sciences de la vie* (note 5 above), p. 287.

[35] Jean Pierquin, *Dissertation physico-th ologique touchant la conception virginale de J sus-Christ dans le sein de la Vierge Marie sa m re* (1742), preceded by Claude Louis-Combet, "L'homme qui a vu l'oeuf," Grenoble, J r me Millon, 1996. Information about Pierquin is taken from Louis-Combet. Page numbers will be given in the text.

such topics as the color of Blacks, birth marks, the song of the cock, the weight of the flame, the causes of incubi, legal proof by immersion in water, the swimming of the drowned, amphibious men, ghosts and goblins, the summoning of the dead, the witches's sabbath... These memoirs were said to constitute fragments of a treatise on invisible and aerial creatures, the manuscript of which dissapeared after the abb 's death, together with an equally unpublished book about necromancy. Pierquin, therefore, approached the problem of the virginal conception as an experienced amateur of natural and preternatural philosophy.

The scientific basis of the *Dissertation* is the theory, current in the eighteenth century, that postulates both the preformation and the "encapsulation" (*embo tement*) of germs in the female's eggs.[36] On the one hand, the organisms to be born are, since Eve, preformed in miniature in their potential mother's eggs. On the other hand, the eggs of the female preformed organisms enclose further preformed organisms, in principle without a limit towards the infinitely small. The "evident and mathematical proofs" of the infinite divisibility of matter seem to Pierquin to compensate for the limits of the senses, the imagination, and microscopes, and enough to demonstrate that the germ enclosed in a woman's ovaries contains not merely one child, but infinite ones (p. 60). In conception, the abb explains, the mother provides the egg, while the man furnishes the "extremely subtile spirit" (i.e. fluid) that occasions embryological growth (p. 65). And since there are no reasons to think that Mary lacked normal organs of generation, Jesus obviously developed from one of the preformed embryos contained in her body. This having been established, the step is easily taken from the male seminal "spirit" to the Holy Spirit. In order to form "the sacred Body of Christ," Mary gave the Holy Ghost "what mothers usually furnish for the generation of their children" —a "*chosen germ* that contained in miniature the delicate body of the divine Child" (p. 76). Once Mary consented to the Incarnation, all the parts of Jesus's body preformed in the chosen germ developed in her womb according to natural laws. Where does this leave the Christ's double nature?

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[36] Pierquin could not have been aware of Charles Bonnet's discovery of parthenogenesis ("virgin birth") in the flea, made in 1740 and reported by R aumur in 1742 at the end of his *M moires pour servir l'histoire des insectes*. He was, however, likely to be familiar with stories about solitary conception. Virgil's superb depiction of fiery rutting mares fecundated by the zephyr (*Georgics*, III, 266-276) somehow extended to the idea that germ-filled winds are capable of impregnating women. But this belief, which still had adherents in the Enlightenment, was irrelevant to explain how Jesus was conceived by the Holy Ghost. On solitary conception, see Pierre Darmon, *Le mythe de la procr ation l' ge baroque* (1977), Paris, Seuil, 1981, ch. 7. For a mid-eighteenth-century satire and its context, see Lynn Salkin Sbiroli, *Libertine o madri illibate. Lucina sine concubitu e Concubitus sine Lucina. Una discussione settecentesca su sesso e fecondazione*, Venice, Marsilio, 1989.

In the first four centuries of Christianity, the problem of the hypostatic union gave rise to violent and divisive disputes. Arians denied the union of two natures in Jesus; Nestorians believed the Word was "indwelling" in Jesus (and so Jesus turned out to be two distinct Persons, and Mary, no longer the Mother of God); Monophysites postulated in Jesus only one Person, the divine; as late as the seventh century, Monothelites accepted the union of two natures in one Person, but denied that this Person had two wills.[37] Pierquin alludes to very early heresies according to which Jesus's flesh was imaginary, or composed of an ethereal matter derived from the stars.[38] He considers them as reckless attempts to unravel the mystery of the Incarnation and, as he memorably puts it, to "find for the Messiah an origin nobler than a virgin's egg" (*trouver au Messie une origine plus noble que l'oeuf d'une vierge*, p. 83). True, he acknowledges, a woman both virgin and pregnant "is a singular prodigy, well above nature" (p. 89). But the virginal conception itself is not. Obviously, the Holy Ghost, being spiritual, could not have materially contributed to the body of Jesus. It must have therefore "acted on Mary's egg so as to make it fecund, as a man could have done it" (p. 94). In Pierquin's view, there is nothing impossible or unnatural involved in the process —provided, of course, we accept that the Holy Spirit was indeed capable of activating embryonic growth in the same way as male semen usually does (p. 99).

The abb hoped his "proofs" would satisfy not only theologians, but also physicians and philosophers, "who only want systems founded on nature" (p. 97). What about their conformity to Scripture? Well, as Pierquin notes, embryological vocabulary is as absent from the sacred texts as the words "consubstantiality" or "transubstantiation." But the important thing is that their sense be there (p. 101). Thus, the rod of Aaron deposed in the tabernacle, which was found "budded, and brought forth buds, and bloomed blossoms, and yielded almonds" (Numbers 17.8), is for Pierquin a "sensible image of the sacred Body of Jesus Christ which, originating in the Virgin Mary's sacred ovary, develops in her chaste womb by the power of the Holy Ghost." Similarly, the lilies of the Shulamite's closed garden (Song of Songs 4 and 6)

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[37] For a useful overview of early debates, see Richard A. Norris, Jr. (Ed. and trans.), *The Christological Controversy*, Philadelphia, Fortress Press, 1980.

[38] Pierquin's allusion is extremely rapid and includes no names. He might have been thinking about Marcion (for whom Christ did not have a real body), Apelles (who thought Christ took his flesh from the stars), Valentinus and others (who believed Christ's flesh was spiritual or made of soul). These doctrines are known through the works of their opponents, especially Irenaeus (*Adversus Haereses*), Hippolytus (*A Refutation of all heresies*), and Tertullian. Tertullian wrote separate treatises against Marcion, Valentinus and Apelles (only the first two are extant), referred to them in several others, and confuted them together in *De carne Christi*, which is therefore the best starting point for the question that concerns us here.

become "natural figures of the holy germ that blossoms and grows in Mary's closed womb" (p. 107).

Pierquin's reasoning worked within the bounds of specific constraints. In the first place, it had to assume the truth of whatever is proclaimed as true within the Christian tradition. This applied especially to the supernatural, in this case to the fecundation of Mary by the Holy Spirit (dismissed by Paine as the story of a young woman "debauched by a ghost").[39] The supernatural postulate is neither *explanans* nor *explanandum*; rather, it constitutes an inescapable fact that defines the limits and possibilities of the entire physicotheological investigation. Insofar as it is revealed, the event itself concerns faith and is a mystery. Roman Catholics cannot doubt that Jesus was conceived by the Holy Ghost in the womb of the Virgin Mary. But the physicotheological argument transforms the supernatural event into a preternatural phenomenon. As such, to put it in terms other than Pierquin's, the virginal conception can be at best morally certain. To increase the moral certitude attached to the event, physicotheology must explain it in a manner that is consistent with both the Bible and accepted scientific knowledge. This is accomplished by means of two complementary operations that move in opposite hermeneutical directions. While the results of natural philosophy are applied as strictly and as literally as possible to the problem under examination, the scriptural passages supposed to bolster the physicotheological intepretation are read in a most figurative manner. An enclosed garden sung by Solomon is explicitly said to prefigure Mary's closed virginal womb. Other connections are implicit. Semen, in the words of the seventeenth-century Dutch physician Reinier de Graaf, was "seminal air" (*aura seminalis*), an almost ethereal fluid —an *esprit* that irresistibly evokes the *Saint Esprit*.[40] Moreover, the religious fervor that suffuses Pierquin's argument connects it affectively and rhetorically to the larger universe of natural theological literature. The chief relay is perhaps the emotional and cognitive state of wonder before the perfection of the miniature, the bewildered yet reassuring vision of the almost inconceivable minuteness of an infinite number of encapsulated embryos —in short, the topos of *maxima in minimis*.

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[39] Paine, *Age of Reason*, part II, ch. 2.

[40] Roger, *Les sciences de la vie* (note 5 above), p. 290, mentions Denis van der Sterre (*Tractatus novus de generatione ex ovo*, 1687), "qui adopte la th orie de l'*aura seminalis* entre autres raisons parce qu'elle permet de comprendre comment la Vierge Marie a pu concevoir *obumbratione Spiritus Sancti*." For a more detailed discussion of the theory of semen as spiritual substance and its convergence with seventeenth-century ovism, see Gianna Pomata, "Volkommen oder verdorben? Der m nnliche Samen im fr hneuzeitliche Europa," *L' homme. Zeitschrift f r feministische Geschichtswissenschaft* 6 (1995), pp, 59-85, section 4.

Embodied Revenants

The New Testament speaks of three kinds of resurrections: Jesus resurrected some individuals; the Christ rose from his tomb three days after his death; all human beings will resurrect at the end of time.

The resurrection of Lazarus or Jairus's daughter were miracles performed by Jesus, and thus considered demonstrative of his divinity and the truth of Christianity. These miracles in particular were not disputed, but were considered genuine and authoritative by Protestants and Catholics alike. The debate about later miracles that raged between Catholics and Protestants (and especially in England during the first half of the eighteenth century), as well as the strict criteria the Catholic Church formulated for their evaluation, focused on problems of evidence, not physicotheology.[41] As far as resurrections were concerned, the point was to determine whether or not they could be medically explained. Distinctions here were clear: the Biblical cases were considered genuine miracles; most others were cleared up as cases of apparent death. For example, in his *Physica sacra*, the Zurich naturalist Johann Jacob Scheuchzer proclaimed the miraculous nature of the resurrections of Lazarus and Jairus's daughter, emphasized that medicine can never bring about true resurrections, and took the occasion to discuss putrefaction, apparent death and resuscitation.[42]

Another class of New Testament resurrections consists of a single case: that of Jesus. As far as I know, controversies about it did not broach physicotheological questions. Rather, as for miracles, they concerned evidentiary matters, especially the (in)consistency of the Gospel narratives and the (un)reliability and (in)sufficiency of the witnesses. As Thomas Paine emphasized, while the virginal conception does not lend itself to proof, the resurrection (and ascension) of Jesus admit of public and ocular testimony. Like other critics of Christianity, he found the evidence wanting.[43] In *The*

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41 R. M. Burns, *The Great Debate on Miracles. From Joseph Glanvill to David Hume*, Lewisburg, Bucknell University Press, 1981.

42 Johann Jakob Scheuchzer, *Kupfer-Bibel. In welcher die Physica sacra, oder Beheiligte Natur-Wissenschafft derer in Heil[iger] Schrifft vorkommenden Nat rlichen Sachen, deutlich erkl rt und bew hrt* (Augsburg/Ulm, gedruckt bey Christian Ulrich Wagner, 1731-1735). Commentary to plates DCLXXV (Jairus's daughter, vol. 6, pp. 1186-1188; opposes true resurrection to apparent death and resuscitation), and DCCXXIV (Lazarus; vol. 6, pp. 1316-1317; discusses putrefaction). On the context and program of Scheuchzer's enterprise, see M sch, *Geheiligte Naturwissenschaft* (note 17 above).

43 D'Holbach put the standard criticism in a nutshell when he wrote: "J sus-Christ est ressuscit , nous en avons pour garants quelques ap tres clair s et quelques saintes comm res qui n'ont pas pu s'y tromper; sans compter sur tout J rusalem, qui n'en a jamais rien vu." Paul-Henri Thiry d'Holbach, *Th ologie portative* (1758), s.v. "R surrection," in d'Holbach, *Oeuvres philosophiques*, ed. Jean-Pierre Jackson, Paris, Alive, 1998.

Age of Reason (part I, ch. 3), he concluded that the resurrection story, "so far as relates to the supernatural part, has every mark of fraud and imposition stamped upon the face of it." If accepted, but refused as miraculous, the reappearance of Jesus in a carnal body was explained as a case of apparent death followed by resuscitation (both sometimes described as part of an Essenian secret plan).[44]

Before dealing with the general resurrection of the dead at the end of time (the third kind spoken of in Scripture), let us look at the problem of the undead. Strictly speaking, it does not belong in the physicotheological genre we are examining. But the strategies to differentiate it from the problem of the resurrection throw light on the boundaries and operations of physicotheology.

For Christian apologists, genuine resurrections were (like all legitimate miracles) the work of the divine will, and manifested and served both the glory of God and the truth of Christianity. It was therefore essential to demarcate the resurrected, who miraculously rise with their own bodies of flesh, alive, and destined to die a second time, from the undead, generally ghostly though sometimes carnal, who do not fully return to the life of the living.

Scheuchzer's work furnishes a graphic illustration of these strategies.[45] Saint Paul spoke of the seed that grows into a plant as a metaphor for the resurrection of the body. Scheuchzer, instead of including a resurrection scene among the splendid engravings of his *Physica sacra*, merely expounded the figurative term of Paul's metaphor. Under their outer membranes, he explained, seeds enclose the principle of life out of which new plants develop. God gave each plant its particular structure, and insured its perpetuation by incorporating all future plants of a species in the first He created. The accompanying plate (Figure 1) represents an almond, its skin, its seed before and after fecundation, and different moments of its growth. Perhaps Scheuchzer wished to suggest that the physical possibility of resurrection could gain support from the preformation theory of embryology (as we shall see it did). Still, as implied by his choice of commentary and illustration, the general resurrection clearly did not belong among the phenomena whose contemplation confirmed and inspired belief in the Creator. Nor was its possibility to be doubted, as that of other rising dead could be.

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[44] For an extensive presentation of English, French and German debates, see William Lane Craig, *The Historical Argument for the Resurrection of Jesus during the Deist Controversy*, Lewiston, Edwin Mellen Press, 1985.

[45] Scheuchzer, *Kupfer-Bibel* (note 42 above), plate DCCXLI and comentary on 1 Cor. 15.36-38 (vol. 6, pp. 1386-1388).

Vampires were the favorite Enlightenment undead.[46] Phlegon's first-century *Book of Marvels* told the story of Philinnion, a dead maiden who visits by night a guest staying in his parents's home and who dies again definitively when she is discovered by her parents.[47] By the end of the eighteenth century, Goethe had transformed the young woman into the famously blood-sucking "bride of Corinth."[48] Between the 1710s and the 1770s, with a peak around 1730-1735, Central Europe was affected by epidemic waves of vampirism, in which embodied revenants were time and again reported to have caused troubles and deaths. As the Benedictine Feij o, great demystifier of portents, noted in 1753, were the reports true, it would mean that more resurrections took place in Central Europe since the late seventeenth century than in the whole of Christendom since the birth of Christ.[49] These vampires were not the lascivious aristocrats equipped with conspicuous fangs that literature and cinema would make familiar, but humbler (and not always blood-sucking) inhabitants of rural villages. The remedy against their deeds was to pierce the living corpse's heart, behead it, and burn it.

By mid-century, several reports, memoirs and treatises had discussed the cases. The theological stakes of vampirism were high. Contrary to most earlier apparitions, vampires were embodied; they were, as Calmet put it, *revenans en corps*.[50] For the Church, it was indispensable to differentiate authenticated cases of bodily incorruptibility and resurrection from vampiric phenomena, and to determine whether these resulted from God, the Devil, posthumous natural magic, natural processes, or imposture. Thus, even vampires made it into the fundamental work on beatification and canonization published in 1734-1738 by cardinal Prospero Lambertini, archbishop of

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[46] Most useful for the eighteenth century are the annotated anthology of sources by Klaus Hamberger, *Mortuus non mordet. Dokumente zum Vampirismus 1689-1791*, Vienna, Turia & Kant, 1992; and Antoine Faivre, "Du vampire villageois aux discours des clercs (Gen se d'un imaginaire l'aube des Lumi res)," in *Les vampires*, Colloque de Cerisy, Paris, Albin Michel, 1993.

[47] *Phlegon of Tralles' Book of Marvels*, trans. with an introduction and commentary by William Hansen, Exeter, University of Exeter Press, 1996, pp. 25-28.

[48] Says the bride: "Aus dem Grabe werd ich ausgetrieben, / Noch zu suchen das vermi§te Gut, / Noch den schon verlornen Mann zu lieben / Und zu saugen seines Herzens Blut." Johann Wolfgang Goethe, "Die Braut von Korinth" (1797), lines 176-179.

[49] Benito Jer nimo Feij o, *Cartas eruditas y curiosas en que, por la mayor parte, se contin a el designio del Teatro Cr tico Universal, impugnando, o reduciendo a dudosas, varias opiniones comunes*, Madrid, Imprenta Real de la Gazeta, 1774 (1st printing 1753), vol. 4, Carta XX (Reflexiones cr ticas sobre las dos Disertaciones, que en orden a Apariciones de Esp ritus, y los llamados Vampiros, dio a luz poco h el c lebre Benedictino, y famoso Expositor de la Biblia D. Agust n Calmet), p. 278.

[50] This point is discussed by Jean-Claude Aguerre, "R sistance de la chair, destitution de l' me," in *Les vampires* (note 46 above). He correlates it to the Enlightenment "secularization of the soul" and to phenomena of bodily resilience and convulsion. On earlier apparitions, see Jean-Claude Schmitt, *Les revenants. Les vivants et les morts dans la soci t m di vale*, Paris, Gallimard, 1994. See below for Calmet.

Bologna and future Pope Benedict XIV.[51] For two decades starting in 1708, Lambertini was *promotor fidei* —the so-called "Devil's advocate" whose function is to challenge arguments in favor of an individual's beatification or canonization.[52] For the cardinal, who was an enlightened patron of the arts and sciences, medicine and the natural sciences were major sources of objections. He considered that, in principle, healings or the incorruptibility of corpses could be explained by natural causes, and should be ruled miraculous only after an extremely rigourous weighing of (especially medical) evidence and possible explanations.[53] As for vampires, he dismissed belief in them and their actions as an effect of fear and the imagination.[54] To the extent that vampirism involved the administration of justice and the maintenance of public order, its relevance was also political. The 1755 report on Silesian cases by empress Maria Theresa's sceptical *protomedicus* Gerhard van Swieten prompted the enlightened despot of Austria to further her systematic program for policing and suppressing superstition. She declared

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[51] Benedict XIV (Prospero Lambertini), *De Servorum Dei Beatificatione et Beatorum Canonizatione*, 2nd ed., Padova, Typis Seminarii, apud Joannem Manfr , 1743, Book IV, Part I (De miraculis), ch. XXI (De revocatione Mortuorum ad vitam, seu de resuscitatione), / 4. For a useful summary of the whole work, see Emmanuel de Azevedo, *Benedicto XIV Pont. Opt. Max. Doctrinam de servorum Dei beatificatione et beatorum canonizatione redactam in synopsim*, Rome, typis Generosi Salomoni Bibliopolae, 1757. On its editorial history: Pietro Amato Frutaz, "Le principali edizioni e sinossi del *De Servorum Dei Beatificatione et Beatorum Canonizatione* di Benedetto XIV. Saggio per una bio-bibliografia critica," in Marco Cecchelli, ed., *Benedetto XIV (Prospero Lambertini)*, Cento, Centro Studi "Girolamo Baruffaldi," 1981-1982, vol. 1.

[52] On various aspects of Lambertini's career (excluding, however, an analysis of his canonization manual), see Cecchelli, *Benedetto XIV*. Chs. 6-8 of the chatty biography by Ren e Haynes (*Philosopher King. The humanist Pope Benedict XIV*, London, Weidenfeld and Nicolson, 1970) give an overview of *De Servorum Dei* IV.I, but are encumbered by the author's interest in paranormal phenomena and psychical research.

[53] On the importance of looking for natural causes before ascribing to a miracle the incorruptibility or resurrection of a corpse, see Lambertini, *De Servorum Die* IV.I, chs. XXI (note 51 above), XXX (De Cadaverum incorruptione) and XXXI (De nonnullis Cadaverum qualitatibus, & de sanguine, liquore, & odore, qui a cadaveribus manant, an miraculo sint adscribendi). Criteria for ruling that a healing is miraculous are enumerated in ch. VIII (De Divina mirabili sanatione a morbis, & infirmitatibus), / 2. Other chapters further discuss cures (IX-XIX), births (XX), resuscitations (XXI), sweat and tears of blood (XXVI), prolonged fasting (XXVII, also in a substantial Appendix commissioned to the Academy of Sciences of Bologna), and the expulsion of demons (XXIX). The last chapter deals with the powers of the imagination. Annotated translations: of chs. VIII-XIX, Franz L. Schleyer, "Die Weisungen Benedikt's XIV. an die Ritenkongregation zur Beurteilung von Wunderheilungen," *Archiv f r katholisches Kirchenrecht* 123 (1948), pp. 316-438; of ch. XX (bilingual), Georg Ott, *ber die Wundergeburt das XX. Kapitel im IV. Buch (1. Teil) des Werkes Benedikts XIV. "De Servorum Dei Beatificatione et Beatorum Canonisatione*," M. D. diss., Friedrich-Alexander-Universit t, Erlangen-N rnberg, 1972. On the medical framework of Lambertini's work: Konstantin Kirchmayr, *Medizinische Grundaunschauungen der Richtlinien Benedikts XIV. zur Begutachtung von Heilungswundern im IV. Buch (1. Teil) des Werkes "De Servorum Dei Beatificatione et Beatorum Canonisatione*," M. D. diss., Friedrich-Alexander-Universit t, Erlangen-N rnberg, 1969.

[54] Lambertini wrote of *deceptae phantasiae figmenta*, and approvingly noted the agreement of several authors "who regard the resurrections of vampires and the actions imputed to them as pure imaginations, fear, and terror" (*qui Vampirorum resurrectionem, & actiones illis impictas meris accensent imaginationibus, metui, atque terrori*). *De Servorum Dei* IV.I, ch. XXI (note 51 above), / 4.

vampirism a result of imagination; observed that investigations had found nothing unnatural; prohibited religious orders from making decisions in vampire cases; and took away from local authorities the competency to judge in the domain.[55] In a later letter to a Polish archbishop, Benedict XIV referred to van Swieten and Maria Theresa, recalled his own conclusions about the conservation of bodies, and recommended prohibiting vampire trials.[56]

In 1751, a good number of earlier reports on vampires, together with older documents about revenants, were discussed in a lengthy dissertation on embodied revenants by another erudite Benedictine, Dom Augustin Calmet (1672-1757).[57] Outside church history, Calmet's name is most frequently associated with vampires. His voluminous exegetical and historical oeuvre, however, includes such works as a "sacred and profane" universal history *la* Bossuet, an "ecclesiastical and civil" history of Lorraine, and a "literal, historical, and moral" commentary of the Benedictine rule. In the eighteenth century, his fame rested on a *Dictionnaire historique, critique, chronologique, g ographique et litt ral de la Bible*, which was variously reprinted and translated, and especially on a monumental *Commentaire litt ral sur tous les livres de l'Ancien et du Nouveau Testament* (the first edition, 1707-1716, is in twenty-three quarto volumes). As their titles themselves suggest, Calmet's efforts were directed at uncovering the meanings immediately intended by the authors of Biblical texts, and were largely dependent on historical investigations. The same attitude animates the *Dissertation sur les revenans en corps*, and explains the respectful, scrupulous, and largely compilatory character that made it the most useful source of later vampirology.

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[55] Gerhard van Swieten, *Vampyrismus*, ed. by Piero Violante, Palermo, Flaccovio, 1988; also includes Violante's useful "I Vampiri di Maria Teresa" and a translation of the Empress's decrees. For the original text of the first decree, dated 1 March 1755, see Hamberger, *Mortuus* (note 46 above), pp. 85-86. Van Swieten, a Dutch Catholic disciple of Hermann Boerhaave, wrote his brief report in French (*Remarques sur le vampyrisme de Sil sie de l'an 1755*, never published) on the basis of information provided by a doctor and an anatomist who had been sent to Silesia to investigate the cases. The title of Violante's edition echoes that of the German version (1768); the text, however, reproduces (with corrections) the 1787 edition of the Italian translation by Giuseppe Valeriano Vannetti, *Considerazione intorno alla pretesa magia postuma per servire alla storia de' vampiri* (first published 1756).

[56] Louis Antoine Caraccioli, *La vie du Pape Beno t XIV Prosper Lambertini. Avec notes instructives, & son portrait*, Paris, Rue, et H tel Serpente, 1783, letter on pp. 192-193.

[57] Dom Augustin Calmet, *Dissertation sur les vampires*, with a presentation by Roland Villeneuve, Grenoble, J r me Millon, 1998. Page numbers will be given in the text. This edition reproduces Calmet's *Dissertation sur les revenans en corps, les excommuni s, les oupires ou vampires, broucolaques, etc.*, tome 2 of his *Trait sur les apparitions des esprits et sur les vampires ou les revenans de Hongrie, de Moravie, etc.*, 2nd enlarged ed., 1751. The first edition appeared in 1746 as *Dissertation sur les apparitions des anges, des d mons et des esprits, et sur les revenans et vampires de Hongrie, de Boh me, de Moravie et de Sil sie*. Marie-H l ne Huet connects eighteenth-century vampire literature, including Calmet, to concerns with the state of cemeteries and related "anxieties" about the place of the dead among the living; Huet, "Deadly Fears: Dom Augustin Calmet's Vampires and the Rule Over Death," *Journal of the History of Ideas* 21 (1997), pp. 222-232.

The interest of Calmet's treatise is that, contrary to contemporaneous treatises on demons, visions, apparitions and "superstitions" in general, it does not exclude the question of embodied revenants from the framework of Catholic theology.[58] Recognizing that apparitions of the dead are attested in the Bible, admitted by the Church Fathers, and incorporated into legitimate devotional practices, the abb refused to dismiss them in principle or explain them away naturalistically.[59] The reason was obviously not that he was a Catholic. In addition to Benedict XIV, Feij o, professor of theology at the University of Oviedo, Giuseppe Davanzati, archbishop of Trani, and the Jesuit authors of the *Dictionnaire de Tr voux* thought vampires were a mere effect of the imagination, sustained by contagion and even wilfull deception.[60] On these points, Catholics and Protestants could be in complete agreement.[61]

Calmet, in contrast, explained that if the subject "were purely philosophical [i.e. scientific], and if it were possible, without harming religion, to reduce it into a problem," he would have tried to impugn it (p. 265). Had Calmet followed only reason and "the rules of philosophy," he would have been inclined to consider them impossible. He needed, however, to take into account the tradition of the Church (pp. 305-306). Calmet did not elaborate on this point, but it is clear that historical and physicotheological inquiries into vampires and other apparitions were relevant for the "literal" interpretation of Scripture. Indeed, though cruelly satirical, Voltaire was rather accurate when he described Calmet as a "historiographer" of vampires, and noted that he treated

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[58] On this point, see Jean-Marie Goulemot, "D mons, merveilles et philosophie l' ge classique," *Annales E. S. C.*, 3 (1980), pp. 1223-1250. For a lengthier analysis, see Nadia Minerva, *Il diavolo. Eclissi e metamorfosi nel secolo dei Lumi. Da Asmodeo a Belzeb* , Ravenna, Longo, 1990, part 2, ch. 1.

[59] In "Deadly Fears" (pp. 227-228), Huet notes that eighteenth-century reports turned the vampire into an inverted image of Christ, and vampirism into a "false religion." While this observation may suggest why vampirism constituted a theological threat, it was not (to my knowledge) explicitly made.

[60] Feij o, *Cartas eruditas*, XX (note 49 above); Giuseppe Davanzati, *Dissertazione sopra i vampiri* (published 1774), ed. Giacomo Annibaldis, Bari, Besa, 1998, ch. XV (Che l'apparizione de' Vampiri non sia altro che puro effetto di Fantasia). Finished by 1742, the dissertation circulated in manuscript, and was published in 1755, well after Davanzati's death, by his nephew Domenico Forges Davanzati, who appended to it a "Vita di Gioseppe Davanzati arcivescovo di Trani" (included in Annibaldis's edition). Benedict XIV, who received the dissertation in manuscript, praised its "doctrine" and erudition in letter to Davanzati of 12 January 1743 ("Vita," p. 141). For the *Dictionnaire de Tr voux* (6th, and last ed., 1771, vol. 8), "le pr tendu Vampirisme n'est qu'une imagination frapp e," and "une esp ce de fanatisme pid mique" (article "Vampirisme"). Under "Vampire, Wampire, Oupire & Upire," the *Dictionnaire* highlighted the absence of reliable testimonies, and dismissed vampire stories as "des bruits populaires, des traditions qui se transmettent, comme nos historiettes de lutins et de revenants."

[61] See Johann Heinrich Zedler, *Grosses vollst ndiges Universal-Lexikon aller Wissenschaften und K nste* (1732-1750), Graz, Akademische Dr ck- und Verlansganstalt, 1962, vol. 46, s.v. "Vampyren."

them "as he had treated the Ancient and the New Testaments."[62] The abb ’s attitude earned him the accusation of gullibility and lack of rigor. In the article "Vampire" of the *Encyclop die*, for example, the chevalier Louis de Jaucourt (a medically-trained deistic Protestant who became the most prolific contributor to Diderot’s enterprise) ironized that Calmet’s treatise "sert prouver combien l’esprit humain est port la superstition." Yet, given the difficulty of finding out if the examined apparitions were real or imaginary, and if real, natural or miraculous, Calmet managed remarkably well to balance theological prudence and naturalistic probing, constantly collecting evidence and emphasizing that *sine qua non* of all discussions of miracles which is the need for strong testimonies given in a juridical or quasi-juridical framework.

As every Christian apologist, Calmet assumed that true resurrections could only be the work of God, and must serve His glory and the truth of Christianity —two purposes, he observed, that vampirism does not fulfill (pp. 38, 46, 50). In addition, revenants usually report on their otherworldly habitat. The fact that vampires do not proved that "they are not really resurrected nor their bodies spiritualized and subtilized" (p. 216). In the absence of reliable testimonies, their appearance and conduct must be considered as effects of prejudiced and stricken imaginations (p. 240). Psychology, however, does not explain why alleged vampires react as they do when unearthed, transperced and decapitated: speaking, yelling, and bleeding abundantly.

Sometimes, persons who drowned, or who are in states of lethargy, ecstasy or syncope, are thought to be dead. If they revive, Calmet reasoned, they do so without miracle, thanks to medical assistance, or through the unaided action of nature. When, as in poisonings, death is caused by a "coagulation of the blood, which freezes and solidifies," then only "an evident miracle" can bring the person back to life. In contrast, if it is provoked by an excessive "boiling of the blood," as happens in drowning or violent death, then, he claims, a resuscitation is possible (p. 208). The natural possibility of resuscitating (as distinguished from resurrecting) therefore depends on whether death was, as it were, hot or cold. This, noted Calmet referring to Jacques-Benigne Winslow’s epoch-making dissertation on the uncertainty of the signs of death,

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62 "Calmet enfin devint leur historiographe, et traita les vampires comme il avait trait l ancien et le nouveau Testament, en rapportant fid lement tout ce qui avait t dit avant lui." Voltaire, *Dictionnaire philosophique*, art. "Vampires." Voltaire was heavily indebted to Calmet’s works and to the library of the abbey of Senones, of which he was the abbot (he spent three weeks working there in 1754). On Voltaire’s satirical and polemical usages of Calmet’s oeuvre, see especially his *La Bible enfin expliqu e* (1776), and Arnold Ages, "Voltaire, Calmet and the Old Testament," *Studies on Voltaire and the Eighteenth Century*, 41, 1966, 87-187.

makes vampirism less incredible (p. 169).[63] Indeed, if vampires were merely fatal victims of "hot maladies," then their bodies would retain a rest of life, and revive in a way similar to hibernating animals (p. 209). They would therefore be persons buried alive, and that would account for their growing nails and hair (p. 242), as well as for their forceful resistance to what amounted to an execution (p. 246).[64]

At least in its domain, the pattern of Calmet's argument is typical of Enlightenment portent-criticism: a detailed presentation of the alleged phenomena is followed by a fairly quick *reductio ad naturam*.[65] In the end, however, Calmet remains hesitant and perplexed. He often complains that testimonies are unreliable, investigations and reports incomplete; he trusts medicine to account for the state of the vampire's body. And yet, he relates the cases as if they were valid, and wonders how to explain that vampires's feet appear muddy the day after they showed up among the living.[66] In the end, the hardest problem is finding out how they leave their tombs, get

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63 Winslow's *Dissertation sur l'incertitude des signes de la mort, et l'abus des enterremens, & embaumemens precipites. . .,* translated from the Latin, was published in 1742. See Claudio Milanesi, *Mort apparente, mort imparfaite. M decine et mentalit s au XVIIIe si cle*, Paris, Payot, 1991.

64 An alternative to the idea that vampires are persons buried alive was offered by Michael Ranft. In 1728, this Lutheran savant from Leipzig published two dissertations (one "historico-critical" and one "philosophical") under the common title *De masticatione mortuorum in tumulis*. He later expanded them, and added numerous documents from 1732 (an especially rich year as a consequence of a much-discussed Serbian case) in a German version, *Tractat von dem Kauen und Schmatzen der Todten in Gr bern, Worin die wahre Beschaffenheit derer Hungarischen Vampyrs und Blut-Sauger gezeigt, auch alle von dieser Materie bi§her zum Vorschein gekommene Schrifften recensiret werden* (Leipzig, Teubner, 1734). Ranft attributed to rodents or other animals the noises supposed to result from the mastication of the dead (and said to be reminiscent of pigs eating); the frights they produced were for him the effects of disturbed imaginations or Papist supersititions. Yet in his analysis of phenomena allegedly pertaining to the bodies of masticating dead and other alleged vampires (fluid blood, growing nails and hair, flexible members, fresh skin, sometimes erection of the penis), especially of the famous Hungarian case of Peter Plogojovitz, who had been the object of an extended official inquiry in 1725, Ranft thought, in a neo-Paracelsian vein, in terms of the occult forces (including the imagination) at work in nature and natural magic. He distinguished the death of the man and the death of the body. The former takes place when the soul leaves the body, the latter, only when the body is entirely disintegrated. Until then, the corpse remains endowed with vegetative life, expression of the activity of nature and of the two basic properties of matter, vitality and sensation, and source of the vital phenomena displayed by vampires. Ranft's 1728 dissertations exist in French: *De la mastication des morts dans leurs tombeaux*, trans. and presented by Danielle Sonnier, Grenoble, Jer me Millon, 1995. Calmet dismissed as ridiculous "the imagination of those who believe that the dead chew in their graves" (*Dissertation*, p. 32; also chs. 45-46). For an elaborate discussion, see Zedler, *Universal-Lexikon* (note 61 above), vol. 44, s.v. "Toden (Schmatzen der)."

65 Feij o, Davanzati, van Swieten follow the pattern; Zedler devotes five columns to the cases, and two to natural explanations.

66 "Si tout cela n'est qu'imagination dela part de ceux qui sont molest s, d'o vient que ces vampires se trouvent dans leurs tombeaux sans corruption, pleins de sang, souples et maniables; qu'on leur trouve les pieds crott s le lendemain du jour qu'ils ont couru et effray les gens . . . ? D'o vient qu'ils ne reviennent plus et n'infestent plus quand on les a br l s ou empal s? Sera-ce encore l'imagination des vivants et leurs pr jug s, qui les rassureront apr s ces ex cutions faites?" Calmet, *Dissertation* (note 57 above), pp. 181-182.

dressed, move and eat, and return to their graves without leaving traces of having displaced any earth (pp. 181-182, 211-212). Calmet cannot simply do away with this problem because of its connection to the biblically-attested fact that the dead are able to return among the living *with their own bodies*.[67] When he declares it "morally impossible" that the revenants come out of their graves, he does not intend to deny that such an event is possible or that it ever took place, but only to state that it lacks moral certainty: "It has never been, and it never will be possible to respond to this difficulty" (p. 242). Outside certified miracles, the existence and action of extraordinary bodies is one of those phenomena that, as Calmet resignedly wrote in connection with the story of a child killed and revived by the Devil, "neither Theology nor Philosophy know how to explain" (p. 247). Therein, however, resides the interest of vampires for a history of the physicotheological imagination. Their ultimate inexplicability results from the commitment to preserve the natural possibility of enfleshed revenants and other extraordinary bodies —from the need to lend *physical* credibility to fundamentally *theological* facts. Denying vampires outright, without leaving open a remote possibility that they be real, seemed to Calmet dangerously close to refusing authenticated apparitions and resurrections. Under the circumstances, only suspension of judgment appeared safe.

The Resurrection of the Dead

> For analogy seems to intimate, that the resurrection will be effected by means strictly natural.
>
> David Hartley, 1749

The resurrection of the dead as eschatological promise is a different matter. The question of testimony is irrelevant in relation to an announced event that has not yet happened. True, there is such a mutual dependency between the resurrection of Christ and that of humanity, that a case against the one has implications for the other. The rising of Christ is the type for what will happen to all at the end of time; and denying the general resurrection implies negating the resurrection of Christ on which it theologically depends. As Saint Paul put it in his first epistle to the Corinthians, "if

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[67] Similar reasons explain Calmet's puzzled and prudent attitude towards reports about excommunicated dead, buried in churches, who were said to come out of their tombs and leave the church building during the Eucharist (*Dissertation*, chs. 28-31 and 61).

there is no resurrection of the dead, then Christ is not risen" (1 Cor. 15.12-14). And if Christ is not risen, then there is no such a thing as Christianity.

That there will be a general resurrection of the dead, and that the dead will rise with their own material bodies is a central mystery of the Christian faith. To the doubter, Paul replied: "Thou fool, that which thou sowest is not quickened, except it die: and that which thou sowest, thou sowest not that body that shall be, but bare grain" (1 Cor. 15.36-37). Thomas Paine criticized him for trying "to prove his system of resurrection from the principles of vegetation," since a dead seed cannot vegetate, and only living grains can produce new plants. Similes from the animal world, he noted, may apply, as from the worm to a butterfly; "but this of a grain does not, and shows Paul to have been what he says of others, a fool."[68] Yet Paul's metaphor opened the way for centuries of physicotheological speculations. What paved it would be Christian writers's attempts to respond to the questions of pagan philosophers: How can disintegrated bodies be recomposed? How will they incorporate the totality of their original matter? How will be distributed the bodily substance of an individual eaten by a cannibal? Why should resurrected bodies have organs they will not use?

Emphasis on the material identity of resurrected and terrestrial bodies was consistent with Jesus's words in Luke 21.18, "But there shall not an hair of your head perish." This changed radically in the seventeenth century. Drawing on chemical analogies and the corpuscular philosophy, Robert Boyle argued that, in order to be the same persons they were while alive, the Resurrected will not need bodies composed of exactly the same matter as their terrestrial bodies. For John Locke, in turn, personal identity was independent of body, and based entirely on a continuity of memory and consciousness. The outcome of Locke's views for the doctrine of the resurrection of the body gave rise to philosophical and physicotheological defenses of embodied selfhood and the resurrection of the *same* body. But even for those who accepted the Lockean view (as did the authors examined below), it still had to be imagined how the Resurrected will be, both bodily and psychologically, who they were before death.[69]

In the chapter "Of identity and diversity" added to the second edition of the *Essay concerning human understanding* (1694), John Locke proposed to distinguish *man* and

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[68] Paine, *Age of Reason*, part II, ch. 2.

[69] Details and bibliography can be found in Fernando Vidal, "Brains, Bodies, Selves, and Science. Anthropologies of Identity and the Resurrection of the Body," *Critical Inquiry*, forthcoming. For earlier debates, see Caroline Walker Bynum, *The Resurrection of the Body in Western Christianity, 200-1336*, New York, Columbia University Press, 1995.

person, and to uncouple substance and personal identity.[70] The identity of the *man* consists in "a participation of the same continued life, in succession vitally united to the same organized body" (/ 6). The *person*, in contrast, is defined as "a thinking being, that has reason and reflection, and can consider itself as itself, the same thinking thing, in different times and places" (/ 9). Personal identity resides in such a continuity of memory and consciousness, in "the sameness of a rational being: and as far as this consciousness can be extended backwards to any past action or thought, so far reaches the identity of that person" (/ 9). *Self* (i.e. that which the word "person" names, / 26) is therefore independent of the substance to which consciousness is "annexed" (/ 10). If my little finger is cut from my hand, and my consciousness stays with it, "it is evident," claims Locke, "the little finger would be the person, the same person; and self then would have nothing to do with the rest of the body" (/ 17).

At resurrection, only the person counts. To be valid and just, sentences passed on Judgment Day required that the judged be conscious of being the same as those who committed the actions for which they will be rewarded or punished; and this will be so, Locke asserted, "in what Bodies soever" the Resurrected appear (/ 26). Since the distinction between *man* and *person* made it possible "to conceive the same person at the resurrection, though in a body not exactly in make or parts the same which he had here" (/ 15), it solved the traditional objections against the rising of the *same* body. But it did so by altering the doctrine: Locke wrote that "those who are raised to an heavenly state have other bodies;"[71] and he acknowledged, "I being fully perswaded of the resurrection and that we shall have bodys fitted to that state it is indifferent to me whether any one concludes that they shall be the same or not."[72] As far as the physicotheology of resurrection is concerned, Locke's momentous redefinition of personal identity in psychological terms converged with the consequences of the corpuscularian philosophy.

In his 1675 "Physico-theological considerations about the possibility of the Resurrection," Boyle argued in favor of a notion of identity that, he imagined, was closer

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70 John Locke, *Essay concerning human understanding*, 2nd ed. (1694), book II, ch. XXVII, "Of identity and diversity." Paragraph numbers (/) are given in the text.

71 John Locke, *A Paraphrase and Notes on the Epistles of St. Paul to the Galatians, I and II Corinthians, Romans, Ephesians* (published for the first time together in 1707), ed. A. W. Wainwright, Oxford, Clarendon Press, 1987, 252 n.

72 Letter to D. Whitby, 17 January 1698/99, in E. S. De Beer (Ed.), *The Correspondence of John Locke* (vol. 6, n¡ 2536), quoted in Maria-Cristina Pitassi, "Une r surrection pour quel corps et pour quelle humanit ? La r ponse lockienne entre philosophie, ex g se et th ologie," *Rivista di storia della filosofia* 1998, n¡ 1, pp. 45-61, p. 61.

to the one held by early Christians.[73] To the extent that most bodily substance is renewed during a lifetime, it makes no sense to demand that resurrected bodies contain all of the original matter that ever belonged to the corresponding terrestrial organisms. As suggested by the alchemical observation of plants that grow out of their planted ashes, there must remain in the particles of the plant some "plastick," form-giving power. Therefore, as confirmed by Ezekiel's vision (Ez. 37.1-11), in which complete bodies develop out of dried bones, "a portion of the matter of a dead body, being united with a far greater portion of matter furnished from without by God himself, and completed into a human body, may be reputed the same man, that was dead before" (p. 195). The identity of the resurrected and the terrestrial "man" no longer requires the numerical identity of material body.

The corpuscularian theory of matter thus solves the traditional objections. The controlled observation of insensible perspiration confirms that the body "is in a perpetual flux;" and this shows "there is no determinate bulk or size, that is necessary to make a human body pass for the same" (p. 196).[74] Yet, something remains the same. A body may contain corpuscles that belonged to another body, without, for that reason, losing its properties; this is evident from operations with gold and mercury, and by analogous phenomena from the plant and animal world (butter can taste like the herbs eaten by the cows that furnish the milk; some marine birds have a fishy flavor). In short, physical bodies do not differ because of the nature of their substance, but because of dissimilarities in the "mechanical affections" of the qualitatively identical corpuscles that form them. It is therefore possible to modify these "affections" so as to revert a body to an earlier state. God has the power to do so: "And that this power extends to the reunion of a soul and body, we may learn from the experiments God has been pleased to give of it in the Old Testament and the New, especially in the raising again to life Lazarus and Christ" (p. 200).

The resurrected body will be composed of true flesh, but, as "glorious" and "spiritual," will also have new properties. Theologians enumerated impassibility, luminosity, agility, and incorruptibility. That bodies of flesh may possess such unusual qualities is explained by comparison with Biblical miracles (p. 201). Boyle recalls that

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[73] "Some physico-theological considerations about the possibility of the Resurrection" (1675), in *The Works of the Honourable Robert Boyle*, 2nd ed., London, printed for J. and F. Rivington . . ., 1772, vol. 4. Page numbers are given in the text. Now also in Michael Hunter and Edward B. Davis (Eds.), *The Works of Robert Boyle*, London, Pickering & Chatto, 2000, vol. 8.

[74] The observations Boyle alludes to were originally presented in Sanctorius's 1614 *De statica medicina*. On the role played by insensible perspiration in Oxford divines's anti-Lockean defense of bodily resurrection, see Lucia Dacome, *Policing bodies and balancing minds: self and representation in eighteenth-century Britain*, Ph. D. diss., University of Cambridge, 2000, ch. 4.

God cancelled the "native gravity" of iron when He made an axe come afloat from the river Jordan (2 Kings 6.1-7), and suspended the action of fire so as to protect Daniel's companions in Nebuchadnezzar's furnace (Daniel, 3). That matter can undergo such changes is further supported by the possibility of manufacturing transparent glass out of opaque lead (p. 202). In conclusion, the corpuscular philosophy seemed to show that, in resurrection, the soul will be joined "to such a substance as may, with tolerable propriety of speech, notwithstanding its differences from our houses of clay (as the Scripture speaks) be called a human body" (p. 201). It did not say, however, what that basic substance was, nor how it would become a resurrected person,

Analogy, wrote the physician David Hartley in the mid-eighteenth century, "seems to intimate, that the resurrection will be effected by means strictly natural" (XC).[75] This was a widely shared conviction; caveats about the conjectural character of the solutions proposed and the limits of reason to figure out a question on which the Scriptures said nothing did not inhibit scholars's creativity. On the contrary, they offered opportunities for testing the limits of the physicotheological imagination. The pattern physicotheologians tended to follow in the Enlightenment was more purely naturalistic than Boyle's —in the limited sense of not appealing to certified miracles as much as he did —and assumed that sameness of body and "man" did not require the numerical sameness of matter. It was on such grounds that, in the 1704-1705 Boyle Lectures, Samuel Clarke, Newton's friend and advocate, discarded as "a great Trifle" the objections from cannibalism.

Clarke borrowed from the (unmentioned) observations on the formation of the chick in the egg that Marcello Malpighi had reported to the Royal Society in 1672. In Malphighi's vocabulary, *stamen* (filament, thread) designated the earliest detectable traces of the embryo. These filaments were supposed to be preformed within the egg and constitute the rudiments of the entire mature organism.[76] For Clarke, it was "more than probable that the *original Stamina*, which contain all and every one of the solid Parts and Vessels of the Body, not excepting the minutest Nerves and Fibres, are themselves the *intire Body*." Whatever comes from the outside to nourish the organism and make it develop is not itself part of the body. In contrast to this constantly fluctuating

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[75] David Hartley, *Observations on Man, His Frame, His Duty, and His Expectations* (1749). I used the 1834 "6th edition" (London, Thomas Tegg and Son). The book (whose text remains the same accross editions) is divided into two parts, each organized into chapters, sections, and propositions. Propositions are numbered continuously within each part; all my references (in the text) are taken from part II, and give the proposition number.

[76] Marcello Malpighi, *Dissertatio epistolica de formatione pulli in ovo* (with English translation), in Howard B. Adelmann, *Marcello Malpighi and the Evolution of Embyrology*, Ithaca, Cornell University Press, 1966, vol. 2.

"extraneous matter," the primal filaments persist unchanged; therefore, no "Confusion of Bodies" can ever take place, as was feared in the case of cannibalism. The *stamen*, moreover, functions as a "seminal Principle" which is itself the entire future organism. Perhaps our terrestrial body, Clarke surmised, is nothing but the slough of one such hidden principle —"(possibly the present Seat of the *Soul*) which at the Resurrection shall discover itself in its proper Form."[77]

The staminal hypothesis was extremely successful. Bernard Nieuwentijt adopted it in his 1714 treatise on "the right use of contemplating the works of the Creator."[78] In 1728 it was reproduced in Chambers's *Cyclopedia*. Twenty years later, Hartley took it up in his *Observations on Man*. Considered as a whole, rather than only as an associationist psychology, Hartley's treatise fully justifies his having been placed "in the apostolical succession of English physico-theologians."[79] For example, the theory of the association of ideas furnished the basis for a defense of miracles, and confirmed the allegedly scriptural doctrine of the "necessary subservience of pain to pleasure" (XXVIII and XXIX). With respect to resurrection, Hartley remained cautious, and listed no less than ten arguments that make it "probable, from the mere Light of Nature, that there will be a Future State" (LXXXVI). One of them envisions the existence of an "elementary infinitesimal body in the embryo" capable of receiving external impressions; after death, this body retains "its power of vegetating again, and, when it does this, [will] shew what changes have been made in it by the impressions of external objects here; i.e. receive according to the deeds done in the *gross* body, and reap as it has sowed" (LXXXVI). The Pauline image of the seed is retained, but now the grain is alive:

> It seems also [writes Hartley] that motion, and consequently perception, may not cease entirely in the elementary body after death; just as in the seeds of vegetables there is probably some small intestine motion kept up, during winter, sufficient to preserve life, and the power of vegetation, on the return of spring. (XC)

Finally, Hartley reaffirms the necessity of body, since "neither the elementary body, nor the immaterial principle, which is generally supposed to preside over this, can exert

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77 Samuel Clarke, *A Discourse concerning the Being and Attributes of God, the Obligations of Natural Religion, and the Truth and Certainty of the Christian Revelation*, 1704-1705 Boyle Lectures, 10th ed., London, printed for H. Woodfall . . ., 1768. Quotations on pp. 206 and 207.

78 Nieuwentijt, *The Religious Philosopher* (note 16 above).

79 Basil Willey, *The Eighteenth Century Background. Studies on the Idea of Nature in the Thought of the Period* (1940), Boston, Beacon Press, 1961, p. 136. Willey's accurate description has long been overshadowed by a tendency to focus on the first part of the *Observations* — perhaps as a result of Joseph Priestley's 1775 abridgment *Hartley's Theory of the Human Mind, on the Principle of the Association of Ideas* — at the expense of the natural religion elaborated in the second part. This has now been rectified by Richard C. Allen, *David Hartley on Human Nature*, Albany, State University of New York Press, 1999.

themselves without a set of suitable organs" (XC). Less prudent, the article "R surrection" of Diderot's *Encyclop die* copied Chambers, referred to Locke and Nieuwentijt, and simply took the seminal theory for granted.

Clarke and Hartley suggested that the *stamen*, "seminal principle" or "elementary body" necessary for the formation of a resurrection body also functioned as the seat of the soul, and therefore of psychological identity. The Genevan naturalist and philosopher Charles Bonnet independently elaborated a similar theory.[80] Resurrection was for him a deeply personal issue.[81] A portrait by the Danish painter Jens Juel depicts him with a Bible open at Saint Paul's first Epistle to the Corinthians (Figure 2). The top of one page reads, *ce que vous semez ne reprend point la vie, s'il ne meurt auparavant*; the other, *O Mort, o est ton aiguillon? S pulcre, o est ta victoire?* [82] Bonnet reports that Juel depicted him meditating on the future restoration and perfecting of living beings.[83] The question was for him filled with both hope and sadness. On 18 May 1777, aware that he was dying, Bonnet's best friend, Albrecht von Haller, anticipated and lamented the loss of all the ideas accumulated in his brain during a lifetime. "Alas," Haller poignantly exclaimed, "my brain, which soon will be a mere heap of dust! I can hardly endure the idea that so many ideas accumulated during a long life should be lost as a child's dreams would be."[84] And Bonnet himself, whose melancholy portrait was painted the year of Haller's death, echoed his friend's desperate complaint. Is it not inconceivable, he asked, that death can forever deprive a Leibniz, a

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[80] I used Charles Bonnet, *Oeuvres d'histoire naturelle et de philosophie*, in-4¡ (Neuch tel, Samuel Fauche, 1781-1783, 8 tomes in 10 vols.), and refer to works in the text, by page or ⁄ number, in the following way: CN = *Contemplation de la nature* (1764; *Oeuvres*, vol. 4.1); EA = *Essai analytique sur les facult s de l' me* (1760; *Oeuvres*, vol. 6); EVV = *Essais sur la vie venir* (Geneva, Abraham Cherbuliez / Paris, H. Servier, 1828); MA = Raymond Savioz, ed., *M moires autobiographiques de Charles Bonnet de Gen ve* (Paris, Vrin, 1948). Similar ideas are found in Bonnet's *Paling n sie philosophique* (1769) and *Recherches philosophiques sur les preuves du christianisme* (1770).

[81] Some elements on the place of resurrection in Bonnet's thought are dealt with in Max Grober, "The natural history of the Heaven and the historical proofs of Christianity: *La Paling n sie philosophique* of Charles Bonnet," *Studies on Voltaire and the Eighteenth Century* 302 (1993), pp. 233-255; Roselyne Rey, "La partie, le tout et l'individu: science et philosophie dans l'oeuvre de Charles Bonnet," and Fernando Vidal, "La psychologie de Charles Bonnet comme 'miniature' de sa m taphysique," both in M. Buscaglia, R. Sigrist, J. Trembley, and J. W est (Eds.), *Charles Bonnet, savant et philosophe (1720-1793)*, Geneva, Editions Pass Pr sent, 1994.

[82] "that which thou sowest is not quickened, except it die" —"O death, where is thy sting? O grave, where is thy victory?" (1 Cor. 15.36 and 55).

[83] Bonnet, *Oeuvres* (note 80 above), vol. 1, pp. ix-x, note. See Figure 2 here.

[84] "H las, mon cerveau, qui bient t ne sera qu'un morceau de terre! Je ne puis presque soutenir l'id e que tant d'id es accumul es par une longue vie doivent tre perdues comme le seraient les songes d'un enfant" (MA, 108).

Newton, or a Haller of the precious fruits of their intelligence and their experience?[85] In the framework of a natural theology intent on proving that everything had a purposeful function, there was no room for such wastefulness.

As a convinced sensationist, Bonnet wished his metaphysics to be *presque toute physique*, based on empirical psychology. His argument about resurrection is consistent with that position, and can be summarized in the following way: Humans are composed of body and soul; they can therefore survive only as mixed beings (EVV, 8). Personal identity depends on memory (Locke's theory), and memory is based in the brain. It follows that, if man is to keep his identity in the afterlife, his soul must remain united to some indestructible organ. Bonnet speculates that God perhaps enclosed such an organ in our terrestrial bodies, where it functions as the seat of the soul.[86] He characterizes this organ as a "little ethereal machine" (*petite machine th r e*) and an "indestructible brain" (*cerveau indestructible*; CN, 139). In addition to being the seat of the soul, the tiny machine (encased in our present brain) is the germ of the future, resurrected body (*le Germe du corps futur*; CN, 139 n. 5), and will act in truly embryological fashion, according to the preformationist *embo tement* theory of generation. It contains in it the entire person, and will unfold in appropriate conditions (ib.).[87]

In Bonnet's thought, the relations between neuropsychology and physicotheology are both substantive and reciprocal. The Gospels, he observed, do not speak of the immortality of soul, but of man. If they did, the resurrection would be meaningless.[88] That is why, for Bonnet, Saint Paul was *l'Ap tre philosophe* (MA, 246). The "key to

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[85] "quand on songe ce qu'ont t Leibnitz, Newton, Haller, on se demande aussit t soi-m me s'il est le moins du monde probable que la mort ait priv pour toujours ces Grands Hommes des fruits pr cieux de tant de veilles, de tant de m ditations et d'exp rience?" (EVV, 7).

[86] "le Supr me Artiste a pu renfermer en petit dans le corps terrestre ce corps incorruptible, si ge imm diat de l' me et l'instrument de toutes ses op rations" (MA, 238).

[87] Late in life, Bonnet realized that his ideas were close to Clarke's. In a note written on a playing card, and placed in vol. 8 (*Essai de Psychologie et Ecrits divers*) of his *Oeuvres*, Bonnet commented: "Il semble que Clark ait eu dans l'esprit une id e qui se rapproche de l'hypoth se que j'ai imagin e sur la R surrection;" and he added: "Si j'avois connu ce passage de Clark quand je composois le chap. XXIV de l'*Essai analytique* [*sur les facult s de l' me*], je n'aurois pas manqu de le citer" (Ca563*1/8R s, Biblioth que publique et universitaire, Geneva).

[88] "Je ne fonde point du tout l'immortalit de l' me sur la petite machine organique; mais, ayant fait remarquer que l' me n' tait pas tout l'homme, il fallait bien . . . pour conserver tout l'homme, supposer que son me demeurait unie une petite machine organique. . . . Ce n'est pas l'immortalit de l' me, mais l'immortalit de l'homme que l'Evangile a mis en vidence. Que signifierait la R surrection, si l' me tait tout l'homme?" (MA, 301).

the philosophical explanation of dogmas" was the fact that all concern the "*mixed* nature of our being."[89] In the *Essai de psychologie* of 1754, Bonnet pleaded:

> If some of my readers found that I make the soul excessively dependent on the body, I would ask them to consider that man, by his very nature, is a composite being, necessarily made up of two substances, the one spiritual, the other corporeal. I would point out to them that such a principle is to such an extent the very principle of revelation, that the doctrine of the resurrection of the body is its immediate consequence. Far from repulsing the deist *philosophe*, such a clearly revealed dogma should, on the contrary, appear to him as a presumption favorable to the truth of religion, since it is so perfectly consistent with what we most certainly know about the nature of our being.[90]

Bonnet intended his empiricist, sometimes apparently materialistic psychology, to fit with Christian doctrines in general, and especially with Christian anthropology. Christianity teaches that humans are composite beings; the doctrine of the resurrection is so central precisely because it posits that there can be no person without a union of soul and body. Although Bonnet emphasized the brain, his empirical psychology both presupposed and validated the reciprocal dependency of body and soul, and the belief that, no matter how mysterious, the resurrection will bring about their reunion.

As in the case of the virginal conception, the physicotheology of resurrection operated within definite boundaries. It assumed the article of faith concerning a supernatural event, identified the preternatural elements involved in it, and applied to them the data and investigative principles of natural philosophy. In the process, especially by developing the Pauline metaphor on the basis of new theories, it remained connected to a complex controversial and exegetical background, as well as to literary traditions for the non-apocalyptic expression of eschatological hope.

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[89] "si l'on regarde de pr s, on reconna tra qu'il n'en est aucun de ces dogmes qui ne soit relatif la nature *mixte* de notre tre. Le dogme de l'Incarnation et celui de la R surrection m'en fournissent des exemples frappants" (MA, 360).

[90] "Si quelques-uns de mes Lecteurs trouveroient que j'ai rendu l'Ame trop d pendante du Corps, je les prierois de consid rer que l'Homme est de sa Nature un tre *mixte*, un tre compos n cessairement de deux substances, l'une spirituelle, l'autre corporelle. Je leur ferois remarquer que ce Principeest tellement celui de la R V LATION, que la Doctrine de la R surrection des Corps en est la cons quence imm diate. Et loin que ce Dogme si clairement r v l d t revolter le D iste Philosophe, il devroit, au contraire, lui paroitre une pr somption favorable la V rit de la RELIGION, puisqu'il est si parfaitement conforme avec ce que nous connoissons de plus certain sur la Nature de notre Etre." Bonnet, *Essai de psychologie* (1755), in *Oeuvres* (note 80 above), t. 8 (= vol. 10), pp. 2-3.

In the anti-sceptical discourse on the conformity of faith and reason that opens the *Theodicy* (1710), Leibniz insisted on the need to discriminate explaining, understanding, proving, and upholding (*expliquer*, *comprendre*, *prouver*, *soutenir*):

> Les Mysteres se peuvent *expliquer* autant qu'il faut pour les croire; mais on ne les sauroit *comprendre*, ny faire entendre *comment* ils arrivent . . . . Il ne nous est pas possible non plus de *prouver* les Mysteres par la raison: car tout ce qui peut se prouver *a priori*, ou par la raison pure, se peut comprendre. Tout ce qui nous reste donc, apres avoir ajout foy aux Mysteres sur les preuves de la verit de la Religion . . . c'est de les pouvoir *soutenir* contre les objections; sans quoy nous ne serions point fond s les croire; tout ce qui peut tre refut d'une mani re solide et demonstrative, ne pouvant manquer d' tre faux; et les preuves de la verit de la religion, qui ne peuvent donner qu'une *certitude morale*, seroient balanc es et m me surmont es par des objections qui donneroient une *certitude absolue*, si elles estoient convaincantes et tout fait demonstratives. [91]

In the light of these distinctions, the eighteenth-century physicotheological genre we have explored here fared rather well —not in evaluative terms that would make no historical sense, but with respect to the operations it involved. Physicotheology did not claim to prove mysteries with absolute certainty, nor to account for them entirely in a natural-philosopical key. Rather, it aimed at strengthening believers's faith in them by furnishing, against objections and refutations, empirical elements that would increase the plausibility, probability and moral certainty of their truth.

Anatomia theologica, as the rest of natural theology, concerns ordinary phenomena, but aims at demonstrating something that transcends nature. Vice versa, in the physicotheology of extraordinary bodies, nature is displayed not to manifest anything that transcends nature, but to reveal how natural laws help effect the supernatural "mysteries" of the faith. God is always the final cause. But natural laws are the efficient causes; and the better they can be shown to work in the production of mysteries, the greater the plausibility of the supernatural events, and the lesser the extent to which God needs to suspend the normal operation of the universe. The aim of physicotheology in this sense is therefore not naturalistically to dissolve theological doctrines and belief, nor to transform (as happened for example to comets),

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[91] Gottfried Wilhelm Leibniz, "Discours pr liminaire de la conformit de la foy avec la raison," *Essais de Th odic e* (1710), in C. I. Gerhardt (Ed.), *Die philosophischen Schriften von G. W. Leibniz*, vol. 6 (1885), Hildesheim, Georg Olms, 1996, p. 52 (/ 5).

preternatural or supernatural phenomena into natural events. On the contrary, its goal is to justify them and preserve them. Pierquin's arguments made the virginal conception of Jesus more plausible; Boyle's suggested that the resurrection of the body is physically possible. In both cases, however, the articles of faith (that Jesus was indeed virginally conceived, and that the resurrection *will* take place) were necessarily assumed.

Physicotheology, then, operates at the intersection of the natural and the supernatural; it makes them coterminous, itself functioning as their common permeable boundary. Its very structure necessitates the twofold presence of the miraculous and the mysterious.

On the one hand, physicotheological arguments can incorporate as auxiliary data points of doctrine or biblical narrative. Boyle believed that an ax came afloat from the bottom of the river Jordan, that Daniel's companions survived Nebuchadnezzar's furnace, and that bones turned into living people when Ezekiel prophesied; and he used those miracles as positive and authoritative pieces of evidence, even though they too could, in principle, be physicotheologically explained.[92] At least in the instances examined here, the loss of the operational value of miracles appears to be a major difference between seventeenth- and eighteenth-century physicotheology.

On the other hand, the subject-matter of physicotheology necessitates both the simultaneous apprehension, and the careful conceptual and methodological differentiation of the natural and the supernatural. As Ambrose wrote in the fourth century concerning the Incarnation, "multaque in eodem et secundum naturam invenies et ultra naturam."[93] And as Aquinas made it clear centuries later, it is less the phenomena themselves that it mattered to call *natural* or *supernatural*, than the manners and modes of their effectuation.

In sum, while natural theology in the style of the Boyle Lectures or the Bridgewater Treatises looked for signs of the supernatural in the natural, the physicotheology of the mysteries searched for marks of the natural within the supernatural. In relation to their origins, goals and practices, both genres are better described as constructive investigations, simultaneously rooted in Enlightenment natural philosophy and in traditional frameworks of discussion, than as demystifying attempts illustrative of secularizing tendencies.

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[92] On notions of miracle and on miracles as evidence among English Newtonians, see Peter Harrison, "Newtonian Science, Miracles, and the Laws of Nature," *Journal of the History of Ideas* 56 (1995), pp. 531-553.

[93] "and in the same you shall find many things that are natural, and [many] supernatural." Saint Ambrose, *De Incarnationis Dominicae Sacramento*,/ 54, in Otto Faller (Ed.), *Sancti Ambrosii Opera*, part IX (Corpus scriptorum ecclesiasticorum latinorum, vol. LXXIX), Vienna, Hoelder-Pichler-Tempsky, 1964, p. 252.

The secularization thesis, which proceeds as if the progress of the sciences and Biblical criticism had made it necessary to come up with non-scriptural proofs of God, neglects a basic distinction that, even though not easily delineated in practice, would have been familiar to learned Christians well into the eighteenth century: that between articles or "mysteries," and preambles of the faith. Mysteries of the faith (such as the Incarnation, the Trinity, atonement, or the last things) are revealed truths that reason alone could not have come to know. Preambles, in contrast, are truths that do not depend on faith alone, and that reason can know by its own means. Paramount among them are the very existence and attributes of God.[94] Thus, the natural theology of authors such as Derham or Paley was but a development of the *praeambula fidei*. Physicotheologians (such as Boyle in his "Considerations") dealt with the mysteries rather than with the preambles, but their methodology was consistent with that of natural theologians. Their attempts to increase the moral certainty of the articles of faith assumed and preserved their "mysterious" nature.

The specific challenge for physicotheology was to construct a framework of legitimation for the mysteries of faith that, in the words of the Sorbonne censor's praise of Calmet, would guard the reader against both "vain credulity" and "dangerous scepticism."[95] The result, for us, can be an impression of ambiguity. But it is important to distinguish it from the similar impression often left by the Enlightenment demystification of wonders. The objects of such demystification —vampires, demons, apparitions, astrology, malefices — were usually first presented in neutral definitions and descriptions, then criticized in judgmental explanations that appealed to superstition and various natural sciences. The pattern is such that each part contradicts the other, and that the first one weakens the second.[96] As a critic noted of Calmet's treatment of revenants, "the historical [i.e. descriptive] narrative, though false, has had the time to impress the reader's weak mind, and his imagination is disturbed."[97] This might have been especially the case of Calmet, who, for reasons explained above, conspicuously suffered from split argument; as also noted, however, it also applied to more outright demystifiers such as Feij o, Davanzati, van Swieten, and Zedler.

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[94] Alan Charles Kors, *Atheism in France, 1650-1729*, vol. 1: *The Orthodox Sources of Disbelief*, Princeton, Princeton University Press, 1990, especially part I, ch. 4.

[95] "Approbation," signed De Marcilly, in Calmet, *Dissertation* (note 57 above), p. 308.

[96] Goulemot ("Demons," note 58 above, p. 1245) aptly speaks in this connection of a *dissociation des nonc s*.

[97] Nicolas Lenglet-Dufresnoy, "Observations g n rales et particuli res" on Calmet's *Dissertation*, in vol. 2 of his *Trait historique et dogmatique sur les apparitions, les visions et les r v lations particuli res* . . . (1751), quoted by Minerva, *Il diavolo* (note 58 above), p. 121.

What physicotheology conveys, in contrast, is not a "return of the repressed," a kind of celebration of wonders through the discourse supposed to eliminate them, but the irreducibility of the supernatural mysteries. Physicotheological arguments do not betray an opposition between religious and secular thought, even *philosophique*, but (close in this respect to portent-criticism) a process whereby the institutionalized forms of Christianity marginalize popular forms of belief, and turn "reasonableness" into a cognitive and moral norm. John Locke is in the background. As he explained in the *Essay concerning human understanding* (IV.XVIII) faith is the assent to propositions that are not grounded on the deductions of reason, but on divine revelation. Its objects remain above reason; yet the reasonableness that is henceforth required generates a demand for physicotheological support. Indeed, Locke's theory of personal identity, which to us seems mainly connected to his psychology and epistemology, was rightly understood as relevant to the physicotheology of resurrection.

Natural theology and physicotheology bore the marks of the *new philosophy* and historical Bible-criticism. Both used the most recent scientific concepts and methods, and (in the eighteenth century) gave up miracles as auxiliary data. The speculations of Pierquin or Bonnet clearly show that physicotheology was up-to-date. Insofar as they updated the answers, they contributed to Enlightenment developments in science, philosophy, and theology. Nevertheless, their physicotheological questions about extraordinary bodies had not been renewed since the first centuries of Christianity. This continuity, and the new framework in which it was reconfigured during the Enlightenment, are significant for the history of the modern body and the modern self.

Calmet's unwillingness to dismiss as superstitious the belief in embodied revenants, as well as his questions about the conditions under which the dead might return among the living with their own bodies, are symptomatic of contemporaneous discussions on the status of the body in personhood. As Tertullian defending the Incarnation, he could have said, *caro quaeritur* — it is the flesh that is under investigation.[98] Locke's redefinition of personal identity as a continuity of memory and consciousness is a major source of the modern disembodiment of identity. Nevertheless, post-Lockean identity is not incorporeal; rather, it implies that it does not matter whether self is "annexed," as Locke said, to anything any particular individual can identify as his or her body. In this view, if consciousness is attached to my little finger,

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[98] *examinemus corporalem substantiam domini: de spiritali enim certum est. caro quaeritur: veritas et qualitas eius retractatur, an fuerit et unde et cuiusmodi fuerit* ("Let us consider the bodily substance of the Lord; for we are sure about the spiritual. It is the flesh that is under investigation. We have to examine again its truth and its quality: whether it existed, whence [it came] and of what kind it was"). Tertullian, *De carne Christi*, / 1.

then the little finger *is* the person, and the self has nothing to do with the rest of the body (nor indeed with whether or not the little finger is originally mine).

As Charles Taylor explains in *Sources of the Self*, modern identity is characterized by radical reflexivity, a sense of inwardness, a first-person standpoint, self-objectification, and disengagement from body and world.[99] Self-awareness is the only constitutive property of the "punctual," extensionless self. The institution of body as external to self was crucial for shaping such a notion of identity. We "have" bodies only in the perspective of the post-Lockean possessive individualism that makes us their owners; objectified and distanced from our "selves," bodies are for us not what we *are*, but things we own. As highlighted by the physicotheological debates concerning the resurrected body, such a notion of personhood was radically incompatible with the Christian tradition. That is why, immediately after Locke, the resurrection of the body became an explicit major locus of debate about personal identity: at stake were none other than the desembodiment of self, and the consequent devaluation of the Incarnation. This transformation was not imposed by anti-clerical *philosophes*, but happened from within a learned culture intent on strenghtening its own Christian foundations; it involved the adjustments of knowledge and belief that we have seen at work in the physicotheological enterprise.

In the course of the eighteenth century, a synthesis brought together the corpuscularian philosophy of matter, Locke's ideas, the preformation theory of generation, and the neuropsychology of memory and consciousness. A psychotheology of resurrected persons replaced the physicotheology of resurrected bodies. Perceptible physical sameness became irrelevant, and gave way to psychological sameness as exclusive criterion of self. Body, however, did not disappear altogether. Rather, the strategy of trying to define within a Lockean framework the part of body necessary for a resurrected person to be the same as the corresponding terrestrial person ended up reducing body to the brain, i.e. to the seat of consciousness and memory. The neutralisation and objectification of the body-self facilitated the focalisation on the brain of discourses about enfleshed identity. Indeed, contrary to much else in our experiences of the body, the brain is an organ we neither see nor feel. As Paul Ricoeur noted, "Its proximity within my head gives it the strange character of unexperienced interiority."[100]

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[99] Charles Taylor, *Sources of the Self. The Making of the Modern Identity*, Cambridge, Mass., Harvard University Press, 1989, Part II.

[100] "Ce n'est que par le d tour global par mon corps . . . que je puis dire: mon cerveau. Le caract re d routant de cette expression se trouve renforc par le fait que le cerveau ne tombe pas sous la cat gorie d'objets per us distance du corps propre. Sa proximit dans ma t te lui conf re le caract re trange d'int riorit non v cue." Paul Ricoeur, *Soi-m me comme un autre*, Paris, Seuil, 1990, p. 159.

In short, the crucial problem for the physicotheology of extraordinary bodies was *corporatio* —a Patristic term for incarnation and embodiment —and, implicitly, the vindication of body for human personhood. Once we see it this way, we still understand the condescending smiles of Voltairian modernity, and enjoy the *philosophe*'s mockery; but we may have to acknowledge that they reflect a deep and momentous misunderstanding.[101]

[101] Part of the research included here was supported by a grant from the *Athena* Program of the Swiss National Science Foundation, and by a Fellowship from the John Simon Guggenheim Memorial Foundation.

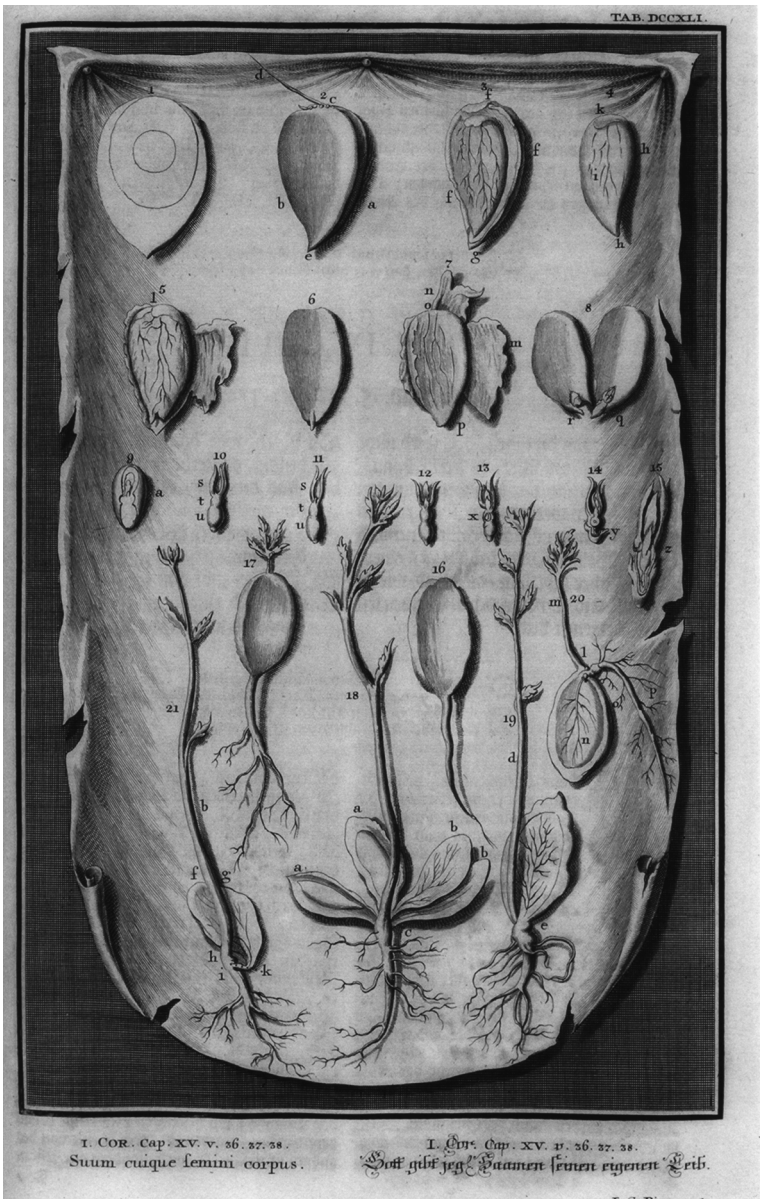

Figure 1

The development of an almond seed

Plate DCCXLI from Johann Jakob Scheuchzer, *Kupfer-Bibel. In welcher die Physica sacra, oder Beheiligte Natur-Wissenschafft derer in Heil[iger] Schrifft vorkommenden Natürlichen Sachen, deutlich erklärt und bewährt,* Augsburg/Ulm, gedruckt bey Christian Ulrich Wagner, 1731-1735, vol. 6. Photography: Staatsbibliothek zu Berlin.

The image is Scheuchzer's visual commentary to 1 Cor. 36-38: "Thou fool, that which thou sowest is not quickened, except it die. And that which thou sowest, thou sowest not that body that shall be, but bare grain, it may chance of wheat, or of some other grain. But God giveth it a body as it hath pleased him, and to every seed his own body." As Scheuchzer also explained in relation to the Christ's words, "Except a corn of wheat fall into the ground and die, it abideth alone: but if it die, it bringeth forth much fruit" (John 12. 24; vol. 6, pp. 1319-1320), it is not the grain itself that dies, but only the nutritive outer layers after they are no longer useful – the rind in plants, the egg in birds, the placenta in mammals (p. 1386).

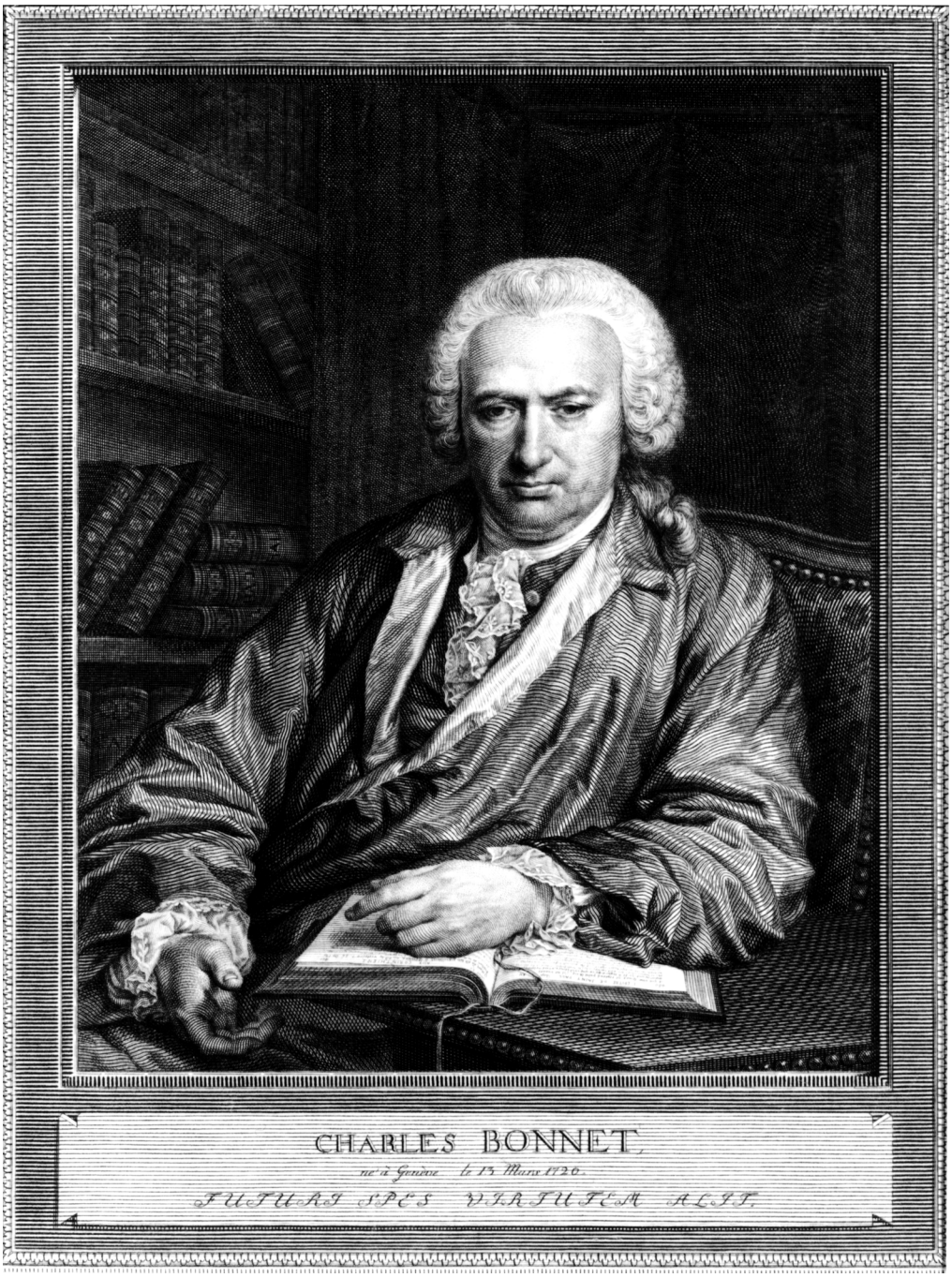

Figure 2

The Genevan naturalist and philosopher Charles Bonnet (1720-1793). Engraved frontispice of Charles Bonnet, *Oeuvres d'histoire naturelle et de philosophie* (Neuchâtel, Samuel Fauche, 1781-1783), vol. 1, after an oil painting of 1777 by Jens Juel. Photography: Centre d'iconographie genevois.

"M[onsieur] Juel," Bonnet wrote, "m'a peint tandis que j'étois enfoncé dans une profonde méditation sur la restitution & le perfectionnement futurs des Etres vivans. On sent assez que ce caractere meditatif n'étoit pas facile à rendre; mais rien n'est difficile aux grands talens que le génie inspire" (*Oeuvres,* vol. 1, pp. ix-x, note). The book, a Bible, is open at Saint Paul's first Epistle to the Corinthians (15.36 and 55): *ce que vous semez ne reprend point la vie, s'il ne meurt auparavant – O Mort, où est ton aiguillon? ô Sépulcre, où est ta victoire?* ("that which thou sowest is not quickened, except it die – O death, where is thy sting? O grave, where is thy victory?"). The plaque reads "CHARLES BONNET né à Genève le 13 Mars 1720. FUTURI SPES VIRTUTEM ALIT" ("The hope of the future sustains virtue").