

Scientific Perspectives on Christian Anthropology

By Nancey Murphy

Theology and science are moving toward consensus on a theory of human nature. Science promotes a view of humankind as thoroughly physical, while biblical studies and church history over the past century have also called body-soul dualism into question.

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My primary academic interest for the past few years has been theories of human nature. In connection with my lectures on this subject to various audiences I've been amazed to discover how much disagreement there is on this subject. To see if that holds true here, as well, I'm going to ask you to respond to a little survey. This is multiple choice; I'll tell you the four options, then ask for a show of hands.

Survey

Which of the following comes closest to your view of human nature?

1. Humans are composed of three parts; e.g., body, soul, and spirit. (trichotomism)
2. Humans are composed of two parts: (dualism)
 - 2a. A body and a soul.
 - 2b. A body and a mind.
3. Humans are composed of one 'part': a physical body. (physicalism)
4. Who cares?

Usually I find trichotomists in the majority, followed by dualists, and only a few physicalists. The fourth option, who cares?, is really a teaser. I'll suggest that this is not in fact a question that the biblical authors cared about.

This is an important issue, then, to get out on the table. It is clear that this often unnamed conflict has consequences for morality and public policy. I suspect that it lies at the heart of the current debate over the

use of fetal stem cells for research. Because of the religious basis for most trichotomism and dualism there is a danger that this issue will reinforce the all-too-common perception that science and religion are intrinsic enemies. That is, while some philosophers have argued for physicalism for centuries, developments in neuroscience have brought these arguments into the public arena and these scientific developments provide strong support for physicalism.

My plan this evening is to provide a historical sketch of theories of human nature in the West, followed by a glimpse of the scientific developments that support a physicalist account of human nature. I'll then comment on some of the theological issues at stake.

1. History

I have failed to discover any comprehensive history of the issue with which I'm concerned here--the metaphysical make-up of the human person. One aspect that needs to be included is the history of *oversimplifications* of earlier history--to which I hope I am not now contributing! Nonetheless, here is my amateur historian's account.

Apparently there were a variety of theories of human nature, with correlative expectations regarding death, available to the writers of the New Testament. It is widely agreed among current Christian and Jewish scholars that early Hebraic accounts of the person were holistic and physicalist, and there was no well-developed account of life after death. By Jesus' day, however, there was a lively debate as to whether or not the dead would rise at the end of time. The Hellenization of the region had begun several centuries earlier and some Jews had adopted a dualistic view of body and soul, along with a conception of the soul's survival of death. Early Gentile Christians probably held an even wider variety of views. The important fact to note is that there is no explicit teaching on the metaphysical composition of the person;¹ however, the New Testament writers did clearly emphasize the resurrection of the body (as opposed to immortality of the soul) as a guarantee of life after death. Writing to the church at Corinth, Paul's apology for the resurrection of the body met resistance from some who found it too good to be true and from others who could not understand why they should *want* to be encumbered again by a body once they had escaped it at death.

In fact, New Testament scholar James Dunn argues that the very questions we address to the texts about the various constitutive parts of the person are foreign to biblical thought. He distinguishes between partitive and aspective understanding, the latter being the tendency of the Bible. Here one speaks of the whole person from various aspects, or in light of the person's various relationships to something else. So what appears to us as a part, for example, the body, is a term for the whole person thought of from a certain angle.² Biblical anthropology is concerned about relationships--to others, to the natural world, and to God.

However, As Christianity spread throughout the Mediterranean world and its theology was developed in conversation with a variety of philosophical and religious systems, a modified Neoplatonic account of the person came to predominate in scholarly circles. The *eternal* Platonic soul became (merely) immortal and there was added the expectation that it would be reunited with a body at the end of time. Augustine's account was the most influential until the later Middle Ages.

A major turning point in Christian history was a result of borrowing from Muslim scholarship in the later Middle Ages. I shall return shortly to Thomas Aquinas's account of the soul. His position, based on Aristotle's conception of the soul as the form of the body, may be described as a modified rather than radical dualism.

Two factors at the dawn of modernity challenged the Aristotelian account of human nature. One was the mainline Protestant Reformation's tendency to associate Aristotle with Catholicism and to return to the more Platonic elements in Augustine's thought. The other was the demise of Aristotelian metaphysics as a whole as a result of the rise of modern science. In response, philosopher René Descartes provided modern Europeans with a dualism of mind and body even more radical than Plato's--mental substance is defined *over against* material substance, and the body is purely mechanical.

The interesting twists in this story are the result of critical church history and historical-critical biblical scholarship, beginning especially in the nineteenth century. At that time many scholars called into question the authenticity of miracle accounts in the Bible, and especially the chief miracle, the resurrection of Jesus. This led to an emphasis in theological circles on an immortal soul as the only basis for Christian hope for life after death.

At the same time, though, critical scholarship made it possible to ask whether current doctrine (including doctrines regarding the soul) were in fact original Christian (and Hebraic) teaching or whether they were the result of later doctrinal development, read back into the biblical texts. It became common during the twentieth century to make a sharp distinction between original Hebraic conceptions and later Greek accretions such as body-soul dualism, and to favor the former as authentic Christian teaching. In addition, both theologians and biblical scholars in the past generation have rediscovered the centrality of the resurrection of the body in primitive Christian proclamation. While the sharp distinction between Greek and Hebraic thought was later called into question, the recognition of the importance of bodily resurrection stands as a permanent achievement.³

2. Science and the Soul

Science has affected these debates at three major points. First, the atomist revolution in physics represented the replacement of Aristotle's "hylomorphism." This was the theory that all things are composed of matter and form; form being a sort of immaterial blueprint that gives each kind of thing its typical qualities. The soul of an animal or person is its form. With the rejection of this theory it not only became impossible to understand soul as the form of the body, but the very conception of matter changed radically. Second, evolutionary biology pushed many in the direction of physicalist accounts of human nature: if animals have no souls (as moderns, beginning with Descartes, assumed) then humans must not have them either. But others argued that the concept of soul is all the more important in order to account for human distinctiveness. The thesis of this paper is that the most significant scientific development having a bearing on this long history of debates is now occurring in the cognitive-neurosciences. But first, a quick look at evolutionary biology.

Already in Darwin's day the theory of evolution raised the possibility that humanity and all its works, including society and culture, could be explained in purely biological terms. If so, free will and moral responsibility seemed to be in jeopardy. To protect the dignity of humans, many relied on the mind-body (or body-soul) dualism that had been employed since the rise of modern physics to attempt to exempt human freedom and intelligence from the blind determination of natural laws. It became a common strategy among Christians to reconcile theological and biological accounts of human nature by granting that the human *body* may well have evolved from animals, but to insist that human distinctiveness is a function of the *soul*, specially created by God.

It may have been reasonable in Darwin's day to imagine that there was some point in evolutionary history when the first human body was conceived and that God began at that point to create human souls. That is, humans were said to have evolved from apes, and it made sense to assume that humans had souls but apes did not. (However, this image cannot be pressed too far: was this first human infant borne by a soulless ape?) Current accounts of the evolution of humans make this notion of "soul insertion" even less plausible.

We can now trace human origins to an extinct common ancestor of both humans and apes, a creature that lived 5-7 million years ago. Between then and now there have been a variety of hominid species. Those known to be our ancestors include *Australopithecus anamensis*, *Australopithecus afarensis*, *Homo habilis*, and *Homo erectus*. There are other hominids not in the direct line of descent to modern humans. Neanderthal hominids, with brains as large as ours, lived contemporaneously with modern humans.⁴ The burial practices and cave drawings of Neanderthals are often taken to show religious awareness. So did all hominids have souls, or only those in the direct line of descent of *Homo sapiens*? What about the Neanderthals? Or was it only modern humans? The very oddity of these questions may lead to a suspicion that evolution and dualism are odd bedfellows.

It is said that Darwin completed the Copernican revolution, bringing living things within the purview of the natural sciences. If this is the case, then one might add that contemporary neuroscience is now completing the Darwinian revolution, bringing the mind within the purview of biology. The development of new brain imaging techniques made the 1990s the "decade of the brain." My claim, in short, is this: all of the human capacities once attributed to the immaterial mind or soul are now yielding to the insights of neurobiology. To see this, though, we need a clear account of just what it is that the soul has been thought to do.

One of the most elaborate and perceptive accounts of the functions of the soul was that of Thomas Aquinas.⁵ He followed Aristotle in recognizing three levels of functioning: that which we share with both animals and plants, that which we share with only the animals, and that which is distinctive of humans. The faculties attributed to the lowest aspect of the soul—nutrition, growth, and reproduction—have long fallen within the sphere of biological explanation.

A number of the faculties we share with animals have also been understood biologically for some time: locomotion and sense perception. Neuroscientists have located the motor cortex, auditory and visual cortices, olfactory lobes, and so forth. Another capacity we share with the higher animals is emotion. It was once thought that all emotions were mediated by the same neural machinery, the "limbic system," but more recent research suggests that there are different systems for different emotions.⁶

In addition to the five exterior senses, Thomas postulated four "interior senses" and these capacities show up in particularly interesting ways in contemporary neuroscientific research. The *sensus communis* (common sense) is the faculty that distinguishes and collates the data from the exterior senses—for example, associating the brownness and softness of the fur, the barking sound, and the smell in order to allow for recognition of the one substance, a dog. In contemporary neuroscience an explanation for this ability is referred to as "the binding problem," and it is considered one of the most difficult problems in current research, second only to the problem of consciousness itself.

For an example of a capacity that is more readily yielding to research, consider a second of Thomas's interior senses, the *vis aestimativa* (translated as the estimative power or instinctive judgment). This faculty allows for apprehensions that go beyond sensory perception, apprehending, for example, the fact that something is useful, or friendly or unfriendly. One relevant area of research is the investigation of the neural basis for recognition of intentions in both humans and animals. Humans and other social animals come equipped with neural systems that predispose them to pick out faces. The amygdala has been shown to be necessary for interpreting facial expressions, direction of gaze, and tone of voice. Neurons in the same region are responsive to the sight of hands and leg motions typical of walking. Thus, there are neurons whose function is to respond to visual stimuli that indicate the intentions of other agents.⁷

Among the rational faculties, distinctive of humans, Thomas distinguished the active and passive intellects. The passive intellect is a sort of memory, closely resembling what current neuroscientists call declarative memory, and this has been found to be dependent on the medial temporal lobe of the brain. Active intellect is responsible for abstracting concepts from sensory experience and for reasoning and judging. These latter capacities are less well understood in neurobiological terms. However, they all involve the use of language, and language use and acquisition are an important area of current study. Two regions of the brain, Wernicke's area and Broca's area, have long been known to be involved in language. Language memory involves a variety of regions; selective damage due to strokes or tumors shows that access to common nouns, proper names, verbs, and even color terms depends on separate regions.⁸ Furthermore, syntactic and semantic capacities depend on different regions of the brain.⁹

The third of Thomas's rational faculties was the will. This he defined as the capacity to be attracted to goods of a non-sensory sort. Along with intellect, this is the seat of moral capacities. Furthermore, since God is the ultimate good, the will also accounts for the capacity to be attracted to God. Neuroscience now contributes to our understanding of both morality and religious experience. Antonio Damasio has studied the neural processes that go into practical reasoning, that is, the ability to make both moral and prudential judgments. In his book, *Descartes' Error*, he reports the case of a nineteenth-century railway worker, Phineas Gage, whose brain was pierced by a metal rod.

Gage recovered physically and his cognitive functions (attention, perception, memory, reasoning, language) were all intact. Yet he suffered a dramatic character change after the accident. The doctor who treated him noted that he had become "fitful, irreverent, indulging at times in the grossest profanity which was not previously his custom, manifesting but little deference for his fellows, impatient of restraint or advice when it conflicts with his desires, at times pertinaciously obstinate, yet capricious and vacillating, devising many plans of future operation, which are no sooner arranged than they are abandoned."¹⁰ Damasio's wife Hanna was able to determine from the damage to Gage's skull exactly which parts of the brain would have been destroyed in the accident—selected areas of his prefrontal cortices. Damasio concludes from this and other similar cases that this area of the brain is "concerned specifically with unique human properties, among them the ability to anticipate the future and plan accordingly within a complex social environment; the sense of responsibility toward the self and others; and the ability to orchestrate one's survival deliberately, at the command of one's free will."¹¹ In short, what Thomas described as the "appetite for the good" appears to depend directly on localizable brain functions.

A number of neuroscientists have begun to study the role of the brain in religious experience. For example, patients with temporal lobe epilepsy often develop strong interests in religion, and this has led to speculation that the temporal lobes are involved in certain sorts of normal religious experiences as well.¹²

What are we to make of all this? It is important to note that no such accumulation of data can ever amount to a proof that there is no nonmaterial mind or soul in addition to the body. But if we recognize that the concept of the soul was originally introduced into Western thought as an *explanation* for capacities that appeared not to be explainable in biological terms, then we can certainly say that for scientific purposes the hypothesis has been shown to be unnecessary.

A second caution is in order. It would be easy at this point to fall into the reductionist's error of claiming that 'morality' or 'religious experience' is *nothing but* a brain process. However, the fact that acting according to an ethical principle requires the participation of brain circuitry does not invalidate the principle. The problem of reductionism in general is one of the most challenging and interesting. I can't give an adequate response here, but let me make one suggestion to help distinguish between a reductive and a non-reductive view of the person. There are two routes by which to arrive at a physicalist account of human beings. One is to begin with dualism, say, of a Cartesian sort, and then subtract the mind or soul, along with the soul's traditional functions. The other route begins with science. We recognize a certain "layered" feature of reality: subatomic particles at the lowest level combine in increasingly complex structures to give us the features of the world known to chemists, and these in turn combine into incredibly complex organizations to give us biological organisms.

The version of physicalism I espouse argues that, just as life appears as a result of complex organization, so too sentience and consciousness appear as nonreducible products of biological organization. To conceive of how it is possible to get 'mind' out of matter one needs to appreciate not only the development from inorganic to organic, but also from mere homeostasis, through goal-directedness, information processing, goal evaluation, consciousness, and sociality to self-consciousness.

3. Theological Implications

I want to reflect now on the theological implications of these developments. Given that most theologians throughout much of Christian history have been dualists of one sort or another, there are a number of theological issues that have to be revisited if a physicalist account of the person is substituted for body-soul dualism.

First, the so called intermediate state. A controversial issue that needs to be addressed in Catholic and Reformed contexts is the claim that between death and the general resurrection souls have conscious awareness of God. This issue became prominent during the Reformation in connection with controversies over purgatory and the expectation of the imminent return of Christ. The problem is that if there is no substantial soul to survive bodily death then what is to be made of this doctrine? Many reformers,

especially within the radical wing, argued that the soul "sleeps" prior to the resurrection and the Last Judgment. Since 'sleep' is a euphemism in the New Testament for death, there are actually two possibilities here--that the soul actually dies with the body or that it is, in some sense, asleep. Some, such as the Polish Anabaptist Simon Budny, taught the more radical view that the soul is but the life of the body and thus ceases to exist at death. More commonly, the radicals taught that the soul continues to exist, yet in an unconscious state.¹³

John Calvin attacked both sorts of views, and his teaching on the conscious intermediate state has settled this issue for many of his followers. The same teaching had been made official for Catholicism by the Fifth Lateran council in 1513.

So it appears that a nonreductive physicalist account of the person presents problems for Christians of both the Catholic and Reformed traditions. If there is no soul, and the nervous system is the seat of consciousness, then how can there be a wakeful state between death and resurrection? One approach open to those who want to maintain this doctrine is to question the meaningfulness of a time-line in discussing eschatological issues. That is, we presume that God is, in some sense, "outside" of time. If those who have died are "with God" we cannot meaningfully relate their experience to our creaturely history.

A central and uncontentious theological issue is the importance of the doctrine of the resurrection of the body. I have already pointed out that while resurrection of the body had been for centuries a mere adjunct to a doctrine of the immortality of the soul it has now been recognized as central to the gospel proclamation.

Recognition of the centrality of resurrection to Christian teaching, combined with recognition of the continuity of humans with the whole of nature, calls for reconsideration of the scope of God's final transformative act. There is increased motive to agree with theologians such as Wolfhart Pannenberg who argue that the resurrection of Jesus is a foretaste of the transformation awaiting the entire cosmos.¹⁴ Paul hints at this in Romans: "For the creation waits with eager longing for the revealing of the children of God; for the creation was subjected to futility, not of its own will but by the will of the one who subjected it, in hope that the creation itself will be set free from its bondage to decay and will obtain the freedom of the glory of the children of God" (Rom. 8:19-21 NRSV).

The metaphysical makeup of the person is but one aspect of a much broader topic of theological concern, now designated "Christian anthropology"; an important theological task is to trace the consequences of a physicalist account of the person for the variety of issues that fall under this heading: one, as mentioned above, is the place of humankind in the rest of nature; others are the source and nature of human sinfulness, and the claim that humans are made in the image of God. Let me address the first of these at some length.

Baptist theologian James McClendon agrees that the value of the scientific findings addressed above is to point Western Christians back to a more biblical view of the human race—one that recognizes that, as with the other animals, God formed humans from the dust of the ground. In English we lose the Hebrew pun in calling the first human *adam* because he is formed from *adamah*, dust or ground (Gen. 2:7). We can recapture the imagery if we think of ourselves as *humans*, made from *humus*. In the Genesis stories of creation the only clear difference between the human animal and the others is this: "this creature is *addressed* by the creator." McClendon writes, "[o]ur life as Christians is our life as organic constituents of the crust of this planet."¹⁵

One might ask why this recognition of our physicality is important from a theological perspective. One reason has been spelled out at length in McClendon's *Ethics*: no account of Christian morality that neglects our embodied selfhood can do justice to gospel ethics. A second reason is spelled out in *Doctrine*: it is impossible to do justice to God's relation to the natural world without an appreciation of humans' role in nature. The whole of modern theology has suffered from an anthropocentrizing tendency. Whereas earlier generations had perceived a 'living' universe in which spirit and matter were closely intertwined, Descartes and his fellow scientists of the seventeenth century adopted a mechanical model of the universe. This not

only created problems for theologians in understanding human nature, but also affected their accounts of the role of God in nature. Many modern theologians relegated nature to the realm of the secular. According to Rudolf Bultmann, nature is an object, entirely governed by natural laws; the religious value of creation is strictly limited since the authentic dependence and freedom that humans can feel must face not nature, but God only. Ironically, while the architects of this anthropocentric doctrine of creation believed they were protecting faith from alien elements, the unhappy outcome was the banishing of God from nature.¹⁶

Yet this separation of humankind from its organic family can legitimately be maintained, after Darwin, only by associating our essential humanness with something other than the body and, as shown above, it is becoming increasingly difficult to conceive of what this other element might be. This result is to be celebrated, says McClendon: when humans are seen as part and parcel of nature, then, and only then, can communion with God be seen as the *telos* of the whole evolutionary (and cosmic) process, and nature's trials, too, can be taken up into divine reconciliation. "Creation, the whole of it, has a goal, and that goal lies in God."¹⁷

There are equally important issues to be re-examined in related areas of Christian thought. The concept of the soul has played a major role in the history of Christian ethics for centuries, for example, as justification for prohibition of abortion and for differential treatment of animals and humans. Where do these arguments stand with a revised concept of the nature of the person? While some fear that the loss of the concept of soul will have a negative impact on Christian ethics, I see it as a valuable stimulus to turn back to the teachings of Jesus for moral guidance. His command to care for "the least of the brethren" would seem to provide adequate grounds for a protection of all human life.

The soul has also long been the focus of spiritual direction and pastoral counseling. What becomes of traditional concepts of religious experience if the person is understood to be purely physical? There have been reactions in recent years against the asceticism fostered by Platonic dualism as well as against the tendency to distinguish between saving souls and caring for people's physical needs. Feminist writers have been critical of accounts of gender relationships in which a superior rational soul has been associated with the masculine, and a subordinate material body with the feminine. In my classes I encourage my students to become aware of the extent to which their experience of God is actually made up largely of bodily experiences: joy, tears, an urge to bow before the Lord.

Another question: How is God's revelation to humans to be understood if humans are body rather than "spirit"? In short, we have to accept the fact that God has to do with brains--crude though this may sound. Clearly, there is much room for development of more holistic approaches to all of these issues.

4. Wild Historical Speculations

My reflections here grow out of two sources. One is my own longstanding puzzlement about how the different sorts of Christianity I have encountered can be so different, despite so much doctrinal agreement. For example, the forms of life of my church, the Church of the Brethren, are rather well summed up in the denomination's motto: Continuing the work of Jesus, peacefully, simply, together. Yet at Fuller Seminary, while most of my students are in fact continuing the work of Jesus, their understanding is that Christianity is basically about something else--having one's sins forgiven and eternal life. The second source of my reflections is David Kelsey's book, *The Uses of Scripture in Recent Theology*. He attributes differences among theologies and approaches to scriptural authority to different ideas about how to construe God's presence in the community. He says that a theologian attempts to "catch up what Christianity is basically all about in a single, synoptic, imaginative judgment."¹⁸

Now, at great risk of oversimplification, I suggest that the adoption of a dualist anthropology in the early centuries of the church was largely responsible for changing Christians' conception of what Christianity is basically all about. I suggest that original Christianity is better understood in socio-political terms than in terms of what is currently thought of as religious or metaphysical. The adoption of a dualist anthropology

provided something different—different from socio-political and ethical concerns—with which Christians became primarily preoccupied.

This is not, of course, to deny the afterlife. It is rather to emphasize the importance of *bodily* resurrection. It is important to see how the contrasting accounts of life after death—resurrection versus immortality of the soul—lead to different attitudes toward kingdom work in this life. Lutheran theologian Ted Peters whimsically describes the dualist account of salvation as "soul-ectomy." If souls are saved *out of* this world, then nothing here matters ultimately. If instead it is our bodily selves that are saved and transformed, then bodies and all that go with them matter—families, history, and all of nature.

Here are some questions: Without the Neoplatonic notion that the goal of life is to prepare the soul for its proper abode in heaven, would Christians through the centuries have devoted more of their attention to working for God's reign on earth? And would Jesus' teachings be regarded as a proper blueprint for that earthly society? Would the creeds, then, not have skipped from his birth to his death, leaving out his teaching and faithful life? Would Christians then see a broader, richer role for Jesus Messiah than as facilitator of the forgiveness of their sins? If Christians had been focusing more, throughout all of these centuries, on following Jesus' teachings about sharing, and about loving our enemies at least enough so as not to kill them, how different might world politics be today? What *would* Christians have been doing these past 2000 years if there were no such things as souls to save?

Anglican theologian Owen Thomas offers a prescription for returning Christian attention to the central concerns of Jesus. He says that there must be:

first, a renewed emphasis in Christian formation on the significance of the body, the material, social, economic, political, and historical world rather than an exclusive focus on the soul or interior life. This emphasis is obviously founded on the centrality in Christian faith of the themes of creation, incarnation, history, and consummation, including the resurrection of the body. Although there has been considerable attention devoted to the body in recent Christian spirituality, it has been largely focused on using the body as a foil for the progress of the soul.

Second, the reign of God must become central again in Christian spirituality. The reign of God is the fundamental theme of Jesus' mission: its inbreaking and manifestation in Jesus' presence, healing, and teaching. To be a follower of Jesus means to repent and open oneself to the presence of this reign, to look for and point to signs of the reign, and to participate in it by manifesting its signs in active love of the neighbor and in the struggle for justice and peace. The presence of the reign of God is manifest primarily in outer life and public life, as well as in inner life and private life, and it is the former which has been largely ignored in recent Christian formation.¹⁹

5. Conclusion

It's time to sum up. I have argued, all too briefly, that theology and science are moving toward consensus on a theory of human nature that may be surprising to some of you here. I have noted not only that science promotes a view of humankind as thoroughly physical, but have also surveyed results from biblical studies and church history over the past century that have also called body-soul dualism into question. This new (or rather very old) account of human nature has called for a lot of fresh theological work, since dualism had been presupposed for so many years. But it is work well worth doing, especially if it is true that recognition of our status as dust of the ground will help call us back to Jesus' concern for bringing about the rule of God on earth.²⁰

Endnotes

1. See, for instance, Joel B. Green, "'Bodies—That is, Human Lives': A Re-Examination of Human Nature in the Bible," in Warren S. Brown, Nancey Murphy, and H. Newton Malony, eds., *Whatever Happened to*

the Soul? Scientific and Theological Portraits of Human Nature (Minneapolis: Fortress Press, 1998), 149-174.

2. J.D.G. Dunn, *The Theology of the Apostle Paul* (Grand Rapids: Eerdmans, 1998), 51ff.

3. Most often cited is Oscar Cullmann, *Immortality of the Soul or Resurrection of the Dead? The Witness of the New Testament* (London: Epworth Press, 1958).

4. For a helpful overview, see Francisco J. Ayala, "Human Nature: One Evolutionist's View," in Brown et al., eds., *Whatever Happened to the Soul?*, 31-48.

5. Thomas Aquinas, *Summa Theologica*, Ia, 75-83.

6. Joseph LeDoux, *The Emotional Brain: The Mysterious Underpinnings of Emotional Life* (New York: Simon and Schuster, 1996).

7. See Leslie Brothers, *Friday's Footprint: How Society Shapes the Human Mind* (New York: Oxford, 1997).

8. Paul Churchland, *The Engine of Reason, The Seat of the Soul: A Philosophical Journey into the Brain* (Cambridge, MA: MIT Press, 1995), 132-143.

9. Peter Hagoort, "The Uniquely Human Capacity for Language Communication: From POPE to [po:p] in Half a Second," in Robert J. Russell, Nancey Murphy, Theo C. Meyering, and Michael A. Arbib, eds., *Neuroscience and the Person: Scientific Perspectives on Divine Action* (Vatican City State and Berkeley: Vatican Observatory and Center for Theology and the Natural Sciences, 1999), 45-56.

10. Antonio R. Damasio, *Descartes' Error: Emotion, Reason, and the Human Brain* (New York: G.P. Putnam's Sons, 1994), 8.

11. Ibid, 10.

12. Fraser Watts, "Cognitive Neuroscience and Religious Consciousness," in Russell, et al., eds., *Neuroscience and the Person*, 327-346.

13. John Hunston Williams, *The Radical Reformation* (Philadelphia: Westminster Press, 1962), chap. 23.

14. Wolfhart Pannenberg, *Jesus—God and Man* (Philadelphia: Westminster Press, 1968).

15. James Wm. McClendon, Jr., *Ethics: Systematic Theology, Volume 1* (Nashville, TN: Abingdon Press, 1984), 89.

16. James Wm. McClendon, Jr., *Doctrine: Systematic Theology, Volume 2* (Nashville, TN: Abingdon Press, 1994), 151.

17. Ibid, 149.

18. David Kelsey, *The Uses of Scripture in Recent Theology* (Philadelphia: Westminster, 1975), 159.

19. Thomas, "Some Problems," 278.

20. All of these issues are dealt with at greater length in my forthcoming book, *Bodies and Souls, Or Spirited Bodies?* (Cambridge: Cambridge University Press).

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