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The Intelligent Design community\(^1\) that sprang to life in the last decade of the twentieth century in the United States proposed, at least initially, to be a purely scientific, and not a religious, enterprise. For instance, William A. Dembski notes that “Proponents of intelligent design regard it as a scientific research program that investigates the effects of intelligent causes” and that this search for the “effects of intelligent causes” becomes controversial only when it is applied to “the natural sciences where no embodied, reified, or evolved intelligence could have been present,” as in, for example, the biological sciences.\(^2\) Finally, and significantly, he contends that his concept of intelligent design does not “invoke a supernatural cause where an ordinary natural cause will do.”\(^3\)

This proposal, while appearing vague on the surface of things, actually has a historical trajectory that connects it with other, older approaches to the theology-and-science dialogue. Although Dembski and his colleagues change the terminology and attempt to argue from a scientific perspective, the underlying meaning behind their concept of intelligent design falls within a debate that G. C. Berkouwer divides neatly into two theological categories: creationism and traducianism. The problem that Berkouwer speaks of relates to the question of the “mysterious nature of man.”\(^4\) He proposes that the core of the problem is “the immortality of the soul” and “the general questions relating to its origin.”\(^5\) Thus, while Dembski’s position is that Intelligent Design is a scientific rather than a religious concept, in actuality his proposal falls within Berkouwer’s problem of the immortal soul. While he would prefer to keep such religious and metaphysical perspectives in the background, a careful reading of the Intelligent Design movement’s writings show that at

\(^1\)Where Intelligent Design is capitalized throughout this article, I am referring specifically to the Intelligent Design movement spearheaded by Dembski et al.


\(^3\)Dembski, 17.


\(^5\)Ibid., 279.
its foundation it is at least partly religiously motivated. The reason for this religious motivation lies in the Intelligent Design movement’s differentiation between intelligent design and nonintelligent design, or as Dembski refers to them, “undirected natural causes.” “Intelligent causes,” he proposes, can do things that undirected natural causes cannot. Undirected natural causes can explain how ink gets applied to paper to form a random inkblot but cannot explain an arrangement of ink on paper that spells out a meaningful message. To obtain such a meaningful arrangement requires an intelligent cause. Whether an intelligent cause is located within or outside nature (i.e., is respectively natural or supernatural) is a separate question from whether an intelligent cause has acted within nature. Design has no prior commitment to supernaturalism. Consequently science can offer no principled grounds for excluding design or relegating it to religion.

Dembski’s Intelligent Design proposal places a greater emphasis on the creation, or intelligent design, of the “mysterious nature of man,” which, in distinction to other evangelical views, they believe may be documented empirically in nature.

However, if one has no definition of the supernatural or natural designer, then how does one differentiate between apparent and intelligent design? Dembski also seems here to give equal weight to the creation and design of natural artifacts, whether human or nonhuman, i.e., animal. Nor does he here differentiate between types of intelligences, whether supernatural, human, or animal. Finally, he contends that because intelligent design “does not require miracles” that it is not religious in nature. These

Dembski, 17. Some Intelligent Designers, such as Michael Denton do not accept any form of biblical creationism, believing instead in a purely evolutionary development of the human being. Denton, who is a former member of the Discovery Institute, is now, however, more closely associated with the “directed evolution” perspective, in which the origin of life was laid down in the initial conditions of a fine-tuned universe (cf. Nature’s Destiny: How the Laws of Biology Reveal Purpose [New York: Free Press, 1998]). Other proponents of this perspective include Alister E. McGrath, *A Fine-Tuned Universe: The Quest for God in Science and Theology*, The 2009 Gifford Lectures (Nashville: Westminster John Knox, 2009); and Simon Conway Morris, *Life’s Solution: Inevitable Humans in a Lonely Universe* (Cambridge: Cambridge University Press, 2003).


Ibid. Such a proposal implies that Dembski believes that God, as a supernatural agent, works outside of time and history. Fernando L. Canale proposes contrastively that God works within human history, even though he is not limited to these parameters. This view of God’s reality is compatible with the incarnation of God in the New Testament (see, e.g., “Doctrine of God,” in *Handbook of Seventh-day Adventist Theology*, ed. Raoul Dederen [Hagerstown, MD: Review and Herald, 2000], 105-159; and idem, *A Criticism of Theological Reason: Time and Timelessness as Primordial Presupposition,*
questions, although important to a definition of Intelligent Design, are beyond the scope of this paper. Instead, we will focus only on the question of the immortal soul, the traditional seat of intelligence in human beings. As we will demonstrate in this article, Dembski and his colleagues in the Intelligent Design movement actually do have a definition for their primary designer. In as far as this designer is the Christian God, I am comfortable with affirming that there is an intelligent designer, although I may disagree with some adherents’ definitions of God. The source of my discomfort with the Intelligent Design movement lies in their mixed message: on one hand, they invoke a fully scientific program without ties to the supernatural, while, on the other, they imagine, as we will see, a national system of laws that intentionally invokes a classical Christian view of God as designer. Understanding the history and ramifications of this view of a designer God is important for understanding the Intelligent Design movement’s place in not only the theology-and-science dialogue, but for its teaching in the public school systems of the United States.

In the light of Dembski’s position, the purpose of this paper is to examine the terminology of dualistic conceptions of body and soul (i.e., monogenesist, traducianist, and polygenesist perspectives) within the older orthodox traditions of the theology-and-science dialogue that arose in the nineteenth and early twentieth centuries in response to Darwinian proposals and against Berkouwer’s theological backdrop. We will begin by examining theological categories cited by Berkouwer on the origin of the immortal soul.

The Origin of the Immortal Soul in Humanity: Traducianism versus Creationism

Berkouwer begins his discussion of the problem by noting that “It is indeed true that both the Church and theology have been interested in the origin of man, in a sense; but this interest was always directed to the origin of the human race.” However, he clarifies, the ancestry of humanity is not directly the problem at hand. The crux of the problem lies in the question of dual origins, i.e., the origin of the material universe and the origin of the immortal soul. Are there two separate creations of human body and of the human soul (creationism), or does the immortal soul, following the first direct divine impartation, come into existence with the body, i.e., the body and soul are inherited from the parents (traducianism)? While the debate over these issues can become very complex, this paper will focus primarily on the question of one versus two origins.


Ibid.
Berkouwer notes that by separating the origin of the material universe from that of the origin of the immortal soul, science and theology have managed to find room for simultaneous, but discipline-oriented, discussion about the origins of humanity. Thus, whereas the origin of the material universe is spoken of from within the Darwinian scientific realm, the origin of the immortal soul falls within the purview of theology. However, he questions the legitimacy of such a dualistic approach, stating: “It can hardly be denied that the formulation of the two ‘questions of origin’ is quite different, and that this very fact suggests the question as to how justified the usual treatment in dogmatics is; in how far the dogmatician may legitimately speak of a duality of origin.”

Historically, questions regarding the creation and unity of the human race and the fall of humanity have been closely related. Berkouwer notes that “This is apparent already from the fact that traducianism has always appealed, in its fight against creationism, to the unity of the human race. . . . Both [traditionally] held to the unity of the human race in Adam (in which not only the story of creation but especially Paul’s statement in Rom. 5, and the text of Acts 17:26, played a role); and this was true in Catholicism (e.g., at Trent) as well as in Protestantism.” Therefore, except for rare denials, the problems surrounding the question of the unity of the human race were of an “incidental and peripheral nature until recently.”

The Problem of Science and Theology in Relation to the Immortal Soul: Monogenism versus Polygenism

The change in the biological sciences that came as a result of the Darwinian and Neo-Darwinian scientific proposals gave meaning to the related problem of monogenesis, or the origin of humanity from a single pair, versus polygenesis, the origin of humanity from multiple pairs. The terms may be applied to two separate, but related, issues: the issue of human ancestry and the issue of a dual origin of material and immaterial elements of creation.

Creationism versus Traducianism

Before turning to these two approaches to the origin of the immortal soul, it is first necessary to briefly clarify the relationship between traducianism and creationism, on one hand, and polygenism and monogenism, on the other.
As noted briefly above, creationism refers to the idea of separate origins of the material and immaterial, or spiritual, aspects of the human being, while traducianism contends that the soul comes into existence with the body. The *Catholic Encyclopedia* helpfully notes that traducianism is the doctrine that, in the process of generation, the human spiritual soul is transmitted to the offspring by the parents. When a distinction is made between the terms Traducianism and Generationism, the former denotes the materialistic doctrine of the transmission of the soul by the organic process of generation, while the latter applies to the doctrine according to which the soul of the offspring originates from the parental soul in some mysterious way analogous to that in which the organism originates from the parent’s organism.

Whereas creationism posits the special impartation of the immortal soul in human beings, “Traducianism is opposed to Creationism or the doctrine that every soul is created by God.” Thus Berkouwer posits that, due to their respective orientations toward the interpretation of Scripture, “we note in Lutheran theology a fairly general sympathy for traducianism, while in Catholic and Calvinist theology preference is given to creationism.”

Berkouwer clarifies how these two orientations differ:

Lutherans saw the image of God primarily in the spiritual attributes of man (*justitia originalis*) and thus had little interest in what distinguishes man from animal after the fall, since the (lost) *justitia originalis* was for them the one thing that matters. Calvinists and Catholics wished to concern themselves with ‘the wholly unique essence of man,’ and thus with what remained human also after the Fall.

The relationship between creationism and traducianism and monogenism and polygenism is complex. However, as noted, both creationism and traducianism are grounded upon the unity of humanity. In other words, there is a unity in the coming together of bodily matter and immortal soul that creates a whole human being. The connection, then, to monogenism and polygenism, which will be discussed more extensively below, is that monogenism refers to this “mysterious way” in which the soul and body come together, either by being passed on from the parents (as in traducianism) or via a special and individual creative act by divine fiat (as in creationism). As we will see, these ideas are not separate from ideas concerning the ancestral origin of humans. In the following discussion of polygenesis and monogenesis we will focus only on the Roman Catholic orientation and responses to these issues. However,

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16 Ibid.
17 Berkouwer, 286.
18 Ibid., 287.
as noted, the Calvinist tradition shares a similar view, although it differs in its position from Roman Catholicism due to its orientation toward Scripture and tradition. Traditional Lutheranism tends more toward a position supporting traducianism.

**Polygenesis As It Relates to Human Ancestry**

The term “polygenesis” typically refers to the “origination of a race or species from a number of independent stocks.” During the Renaissance, many traditional and orthodox ideas were openly questioned. Among these was the idea of the unity of the human race, which resulted in speculations that “only civilized men were descendents [sic] of Adam and that ‘savage’ people had been separately created,” ideas that were “closely associated with efforts to find a niche for the savage below civilized human beings on the elaborately graded hierarchy known as the ‘great chain of being,’ a traditional device for ranking all forms of life inherited from the Middle Ages.”

However, the attempt to fix a distinct and inferior species of humans was not made until the Englishman William Petty, F.R.S., tried to do so in an unpublished paper of 1676-1677, but his “religious heterodoxy would preclude the widespread acceptance of such a mode of thinking about the ‘types of mankind’ until,” G. M. Fredrickson proposes, “the nineteenth century.” Indeed Petty’s ideas about race did not begin to fully engage until some fifty years later when, in Sweden, Carl Linnaeus laid out the different races of humans in *The System of Nature* (1735). *Homo Sapiens*, he proposed, include a number of races, or human subspecies: *Ferus, Americanus, Europaeus, Asiaticus, Afer,* and *Monstrosus.*

1 For a more complete discussion of the Reformed understanding of creationism, see ibid., 287 ff. Here Berkouwer discusses at length the positions of Bavinck and Kuyper.

2 Oxford Dictionaries, s.v., “polygenesis.”


4 Ibid., 11.


1. “Four-footed, mute, hairy. *Wildman* (i.e., *Ferus*).
2. Copper-coloured, choleric, erect. *American* (i.e., *Americanus*).
3. Hair: black, straight, thick; nostrils wide; face*harsh; beard* scanty; obstinate, content, free. *Paints* himself with fine red lines. Regulated by customs.
4. Sooty, melancholy, rigid (i.e., *Asiaticus*).
In Germany, Johann Gottfried Herder followed in the steps of Petty and Linnaeus. Rudolf Bultmann points to Herder as the beginning of sorrows for the German nation in Herder's affirmation of the Völkische (or populist, ethnic) Movement in Germany, noting that

It was Herder who broke away from the concept of the unity of human nature. He distinguished types of humanity which differ not only in physical but also in mental characteristics. In fact, he thought that the individual types were constant, namely, fixed by nature; they are products of nature. From this it follows that human history must be understood as natural history.

The notion of polygenism, once stated, was not scientifically confounded until the 1980s with the discoveries made about the human genome and its rich historical value by human population genetics. While the question of humans as a unified single race has been answered affirmatively by science, evolutionary studies have reshaped the definition of polygenesis from the perspective of the question of dual origins of material and immaterial elements of the universe.

Polygenesis As It Relates to the Origin of the Soul

Within Roman Catholicism, the question of polygenism arises in regard to the impartation of the immortal soul into the material creation for the purpose

Hair black; eyes dark; features haughty, covetous. Covered with loose garments. Governed by opinions.
5. Black, phlegmatic, relaxed (i.e., Afer).
Hair black, frizzled; skin silky; nose flat; lips tumid; craft [sic] indolent, negligent.
Anoints himself with grease. Governed by caprice.”
6. Fabled people (Monstrosus).


See, e.g., Johann Gottfried Herder, Reflections on the Philosophy of the History of Mankind (Chicago: University of Chicago Press, 1968). Here Herder attempts to demonstrate that the nation of Germany had been set apart by Providence in terms of language, inclinations, character, and heredity.


of specially creating human beings. Jesuit scholar Teilhard de Chardin once commented that “in the eyes of science, which at long range can only see things in bulk, the ‘first man’ is and can only be a crowd, and his infancy is made up of thousands and thousands of years.” What de Chardin means here is that Adam is a universal concept, the symbol of all fallen humanity who are marked by original sin in the moment that they become human beings. There was, contra Roman Catholic theology, no first Adam who committed original sin. Rather humanity is subject to original sin because this is the condition imposed upon humanity due to the evolutionary nature of the world—original sin is the law of the universe.28 De Chardin’s justification for such a proposal is that even though the problem of monogenism versus polygenism is ultimately a theological problem, the fact that science studies populations rather than individuals (and Roman Catholicism, on this point, deals with the individual impartation of the immortal soul), means that there should not be a contradiction between theological explanations and scientific findings.29

Karl Rahner, S. J., who similarly accepted polygenesis as a reasonable answer to the question of dual origins, stated, in contradiction to Popes Pius XII30 and Paul VI,31 that “In the present state of theology and science it cannot be proved that polygenism conflicts with orthodox teaching on original sin. It would be better therefore if the magisterium refrained from censuring polygenism.”32 He continues:

It is doubtful, to say the least, whether a bodily, historical unity of the first human beings can be understood in terms of monogenism. It is a general principle of biology that true, concrete genetic unity is not found in the individual but in the population . . . and in the same biotype (organisms of the same genetic constitution). Only within such a situation can evolution

29Teilhard de Chardin, Monogenisme et monophyletisme, 1950: 1-2 (Woodstock Theological Center Library, Special Collections Division, Washington, DC, Box 7, Folder 38).
30Pope Pius XII, Humani Generis (Weston, MA: Weston College Press, 1951).
come about since selection can exercise its pressure only within such a population and not in isolated individuals.  

Thus the question of dual origins of the body and immortal soul, as well as the possibility of the dual origins of human beings as a result of evolutionary development, have become increasingly important to Roman Catholics, especially those promoting a so-called “healthy” relationship between evolutionary theory and the church’s teaching on the nature and ontology of human beings. Such a view, its proponents believe, is not in conflict with a long evolutionary process and can, according to some, allow for the accommodation of Roman Catholic theology to evolutionary perspectives. However, as we will observe later, Roman Catholicism has not pronounced any authoritative word on either the question of evolution or the issue of polygenesis, although several popes have commented, from a slightly less-than dogmatic position, in favor of monogenism and the “appropriate” use of evolutionary theory.

**Monogenism As It Relates to Human Ancestry**

Monogenism is the notion that humans are descended from a single pair of ancestors. It has not only a biblical-theological, but also a scientific definition. The scientific understanding of monogenism is described by scientist Spencer Wells, who points out that “Any piece of DNA that is not shuffled through the action of recombination can be traced back in time to an earlier ancestor.” Of the nearly seven billion pieces of mtDNA, or in other words, the world’s current human population, and about half that number of Y-chromosomes, all can be traced back to a sole root. “This entity, known as the coalescence...”

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34 E.g., Pius XII, *Humani Generis*, and Paul VI in L’Osservatore Romano. See also P. Schoonenberg, *Het Geloof van ons Doopsel* (Hertogenbosch, NL: 1955), 1:143-144. Berkouwer, 280, n. 3, states: “The canon [*Humani Generis*] affirmed belief in the common origin of the human race in Adam, and condemned those who denied it, holding that such denial would involve the dogma of original sin and the salvation of all men in Christ. It was prepared because of the denial of monogenism by some ‘geologists and ethnographers.’”
37 Mitochondrial DNA, or mtDNA, is that which can traced solely in the maternal line of inheritance. Y-chromosomes are one of two sex chromosomes, the other being an X-chromosome. Females have two X-chromosomes, while males have an X- and
point, is the single mtDNA or Y-chromosome type from which they all trace their descent. In any given sample of nonrecombining DNA sequences there must be a single ancestor at some point in the past. This ancient pair have, evocatively, been named Adam and Eve.

Wells is only too happy to promote his concept of monogenism because as recently as the 1960s little was known about how the vast diversity observed in humans came about. He points to the anthropological work of Carleton Coon, *The Origin of Races*, which became a standard text for students of anthropology beginning in the late 1960s, as an example of how the racial profiling of earlier generations continued to the present. Coon recognized essentially the same classification of human beings as Linnaeus had, excluding only Linnaeus’s fictitious *Monstrosus* category. Like others before him, Coon used Darwinian evolution to explain how the races had once been united, but separated over time to create such a wide diversity as seen today.

Wells comments on the basis of Coon’s proposal that Coon’s conclusions were based on

Very little, it turned out. Anthropologists of his era were largely limited to a method used since the time of the Greeks—morphology, or appearance. Although morphologists measured the physical traits they studied very carefully, derived complex formulae to describe their measurements, and inferred processes from the data, they were working at a disadvantage. This is because morphological variation is ultimately produced by genetic variation, and the underlying genetic changes required to produce a change in morphology were (for the most part) still unknown.

Thus it turns out that Coon, on the basis of morphology alone, was saying that “it would have taken a million years of evolution to create the Y-chromosome. DNA in the Y-chromosome passes from father to son, while mtDNA passes from the mother to both daughters and sons.

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38Ibid., 156.

39Ibid. See also an interview with Rebecca Cann, lead researcher at Berkeley on the discovery of mtDNA (Nova, “Children of Eve” (Boston: WGBH Educational Foundation, 1986), transcript, 1.


41Wells, 17. For two other sources of the effects of British and American racial profiling, see Stephen Jay Gould, *The Mismeasure of Man* (New York: W. W. Norton, 1981); and Adrian Desmond and James Moore, *Darwin’s Sacred Cause: How a Hatred of Slavery Shaped Darwin’s Views of Human Evolution* (Chicago: University of Chicago Press, 2009). While Desmond and Moore may overstate their case as to Darwin’s personal sentiments and its relationship to his theory on the descent of humanity, both they and Gould provide a sobering historical look at the extent of racial profiling and its encouragement by Christians, including politicians and men of the cloth.

42Ibid., 18.
Differences we see in different races.”

Wells’s and others’ research into the mysteries of the human genome have revealed uncontrovertibly that “Only the tiniest sliver of [genetic] variation . . . served to distinguish among the different races.”

Further, as Lewontin explained it, if someone were to drop an atomic bomb tomorrow, and the only group of people left alive were the English—or the Australian Aborigines, or the Pygmies of the Ituri Forest—that single population would still retain 85 percent of the level of genetic variation found in our species as a whole. This incredible result provided clear evidence that Linnaeus and Coon were wrong. Rather than belonging to discrete subspecies, humans are part of one big extended family.

Wells’s proposals are a reaffirmation of the long-held belief in monogenesis as it pertains to human ancestry. According to biblical theology, the human pair from which humanity sprang was Adam and Eve (Gen 4:1: “Adam lay with his wife Eve, and she became pregnant and gave birth to Cain. She said, ‘With the help of the LORD I have brought forth a man.’”). However, the question of monogenesis as it pertains to the origin of the immortal soul is still debated, as we have seen, by Roman Catholic scholars and others who posit a form of polygenesis in order to accommodate the role of evolutionary science in the origins of the material body and yet allow for the divine role in the originating of the immortal soul.

Monogenism As It Relates to the Origin of the Soul

Due to its obvious sense of dualism in regard to the impartation of the immortal soul in human beings, Roman Catholicism’s orthodox views, especially since the appearance of Darwinian evolution, have called for clarification. The first serious papal pronouncement on the topic of monogenesis took place with the publication of *Humani Generis* in 1950. Pius XII seems to have made this statement in response to the growing encounter between theology and science. However, as P. Schoonenberg notes, the discussion had come up in the 1870 Vatican Council, which prepared a canon positing monogenism in response to the direction that biological science was pointing.

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43Ibid.
44Ibid., 21.
46It must be clarified that Wells and Cann, among others, do not support the notion that the biblical Adam and Eve were historical entities who brought forth humanity. Rather this couple are merely symbols, as noted above, of a universalized history of human origins.
47Berkouwer, 280.
then tending toward. However, because the issue was not brought up during the council, monogenism never became dogma.48

Darwin had published his *Origin of the Species* in 1859, and would, just months after the 1870 Vatican Council, publish his long-awaited treatise, *The Descent of Man* (1871), in which he proposed that no specialness separated human beings from any other living organism. “Man’s intelligence, use of language, altruism, and so on, all could be derived from rudimentary traits discernible in lower animals.”49 Darwin thus noted in the conclusion of his first chapter in *The Descent of Man* that “the time will before long come, when it will be thought wonderful [i.e., incredulous] that naturalists, who were well acquainted with the comparative structure and development of man, and other mammals, should have believed that each was the work of a separate act of creation.”50 However, in *The Descent of Man*, Darwin does not stop with the question of human ancestry, but pushes on to declare that “We have seen that the study of the theory of expression confirms to a certain limited extent the conclusion that man is derived from some lower animal form, and supports the belief of the specific or subspecific unity of the several races; . . . We have also seen that expression in itself, or the language of the emotions, as it has sometimes been called, is certainly of importance for the welfare of mankind.”51

The response of the Roman Catholic Church to such types of proposals, while not officially dogmatized, is one of concern for maintaining a clear proposal of monogenesis in regard to the unity of humanity. Claudio Basevi states:

> From the perspective of the biblical doctrine of creation, the results are clearly sterile and exegetically incorrect when one focuses the discussion about Scripture and scientific thought on the fallacious dialectic between “creationism” and “evolutionism,” the first understood as the affirmation of the “immediate” appearance of all the species of living beings and the denial of any biological or even geological transformations, the second understood as a philosophical paradigm that interprets the morphogenesis of all reality in terms of a necessary and immanent development, or as the outcome of blind chance. Biblical exegesis can confront and dialogue with the facts, and therefore with evolution, physical or biological, explained in a scientific way and freed from presuppositions of an aprioristic philosophical character. The presence of analogous presuppositions

48Schoonenberg, 143-144; see Berkouwer, 280, n. 3.


51Ibid., 1257.
also cannot be excluded in what concerns the theme of “monogenism,” i.e., the origin of the whole human race from one sole couple of proto-parents. Supported by various biblical passages and by the teaching of the Catholic Magisterium, this belief is presented at times as something certainly denied by scientific results, without reflecting on the fact that, for obvious reasons, the scientific reconstruction, however accurate it may be, could never attain irrefutable proofs for or against it. To this must be added the consideration that scientific analysis can only deduce *a posteriori* if and when it finds itself in front of remains that are certainly human, but it cannot conclude anything about the appearance of a first couple of proto-parents in as much as the “final cause” of such an appearance—the spiritual animation of a body, a new creative intervention of God, etc.—does not belong to the empirical order, whereas only the consequences traceable back to it are.52

Thus from the perspective of Roman Catholic orthodoxy, while there is room for scientific, even evolutionary scientific, discussion about the physical origins of humans, there remains a domain upon which science has little or nothing to add. This domain includes within it the origin of the immortal soul.53 Basevi notes that the issue of monogenism is so important to orthodoxy because it is connected with the “normative” consequences of the proto-parents for all of humanity, particularly to the doctrine of original sin, but also to the recapitulation in Christianity of all that was signified in Adam, to the point that the abandonment of monogenism would require a serious re-interpretation by theology of much of the content of Revelation.”54

**Summary**

Roman Catholic theologians are thus divided on the issue of monogenesis, with those desiring a “healthy” relationship between the church’s theology concerning the origin of the immortal soul and the evolutionary pronouncement concerning the origin of the material universe calling for polygenesis, while those claiming theological orthodoxy proposing the separate creations of soul and body, and yet unified co-existence of these two elements as the foundation of human ontology. Both allow for the introduction of evolutionary science because in both the immortal soul, long considered to be the true essence of humanity, remains distinct from its material counterpart.

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54Basevi.
The question remains, however, as to the importance of these issues to the dialogue between science and theology. As we shall discover below, not only were Darwin and his contemporaries concerned with the question of the immortal soul, but the Intelligent Design movement, as expressed through Dembski et al., also retains its alliance with the notion of an immortal soul. However, as we shall see, Dembski et al. carefully nuance their understanding of the origin of the soul behind their claim to intelligent design as a scientific concept.

Early Scientific Discussion Concerning the Immortality of the Soul

Darwin’s Thoughts on the Question of the Immortal Soul

The debate between theology and science on the topic of origins, whether material or immaterial, was thus interactive and two-way. Darwin himself, as we have already seen, was concerned with immaterial issues, such as the emotions and the mind, which had generally fallen beyond the purview of science up to that point. Significantly, behind the scenes his researches were not simply dedicated to physical and psychological phenomena, but he also regularly included books on the topic of the immortal soul to his reading list; for instance, he included in his “Books to be Read” and “Books Read” Notebook Francis William Newman’s *The Soul, Her Sorrows and Her Aspirations: An Essay Towards the Natural History of the Soul as the True Basis of Theology* (London, 1849); Alexander Copland’s *Mortal Life: and the State of the Soul After Death: Conformable to Divine Revelation*; Oersted’s *Soul of Nature* (which he describes as “dreadful”); and he notes Toland’s 1704 “account of immortality of Soul, amongst Ancients.”

Darwin experienced considerable turmoil about the immortal soul. His turmoil lay in part with his reluctance to hurt his closely knit family, especially his betrothed, Emma Wedgwood, who was also his cousin. In a revealing paragraph, Adrian Desmond and James Moore, recount Darwin’s struggle, noting that just prior to his engagement his father advised him to conceal his doubts about religion lest Emma fret for his ‘salvation’. (The Doctor understood devout Wedgwood women, having married one himself.) But sharing so much of an outlook, Darwin thought candour the better policy, and a week after the engagement he went ahead and told her of his notebook heresies. Such shocking beliefs were a negation of her deeply intuitive faith. He was erasing the line between body and soul. To him, morality and religious feelings were inherited from beasts rather than Breathed into the body. What need, then, for revelation of religious truth in the Bible? If Jesus’s resurrection did not reveal the promise of immortality, how could she and Charles belong to each other for ever? Traditional

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Charles Darwin, “Books to be Read” and “Books Read” Notebook (*Darwin Online, http://darwin-online.org.uk/).*
Unitarianism, as espoused by Martineau, saw no necessary conflict here, and Darwin's views might have been squared with it. Not so Emma's Anglicanized Unitarianism, with its belief in an immortal soul. She sought reassurance and 'every word' he sent by return was a comfort. He said that he did not consider his 'opinion as formed' (too late was he heeding the Doctor's advice), which gave her hope.56

Darwin works out his convictions on the immortal soul in his personal notebooks. For instance, in Notebook B: [Transmutation of species (1837-1838)], he notes:

- The soul by consent of all is superadded, animals not got, not look forward. If we choose to let conjecture run wild then our animals our fellow brethren in pain, disease, death & suffering, our slave in the most laborious works, our companions in our amusements, they may partake from our origin in one common ancestor; we may be all netted together.57

Thus Darwin questioned whether the addition of an immortal soul into humans was in fact a reality. If all organisms were descended from one stock, then humans must have received the same orientation toward pain and suffering, among other conditions generally regarded as especially human, as did these lesser organisms.

In Notebook E: [Transmutation of species (1838-1839)], Darwin finds a discontinuity between the pronouncements of Plato and Socrates on the immorality of the soul and his own conception of the “linear descendant” of “mammiferous animal.”58 He also struggles with the Platonic notion that “our necessary ideas arise from the preexistence of the soul, are not derivable from experience.”59

In his “Old & Useless Notes about the Moral Sense & Some Metaphysical Points,” Darwin plays with the idea of instinct versus soul in his musings on William Kirby’s Bridgewater Treatise, On the Power, Wisdom, and Goodness of God.60 He notes: “As in animal no prejudices about souls, we have particular trains of thoughts as far as man; crows fear of gun.—pointers method of standing.—method of attacking peccary—retriever—produced as soon as

56Desmon and Moore, 136.
58Charles Darwin, Notebook E: [Transmutation of species (1838-1839)] (Darwin Online, http://darwin-online.org.uk/), 76.
59Ibid., 128.
brain developed, and as I have said, no soul superadded.” A footnote on this point states:

“[Lamarck] admits [man] to be the most perfect of animals, but instead of a son of God, the root of his genealogical tree, according to him, is an animalcule, a creature without sense or voluntary motion, or internal or external organs . . . no wonder therefore that he considers his intellectual powers, not as indicating a spiritual substance derived from heaven though resident in his body, but merely as the result of his organization (N. Dict. Nat. xvi. Artic. Intelligence, 344, comp. Ibid. Artic. Idéa, 78, 80.), and ascribes to him in the place of a soul a certain interior sentiment . . .”

See also B 232, “The soul by consent of all is superadded . . .”

Thus Darwin does not take lightly the question of the immortal soul. His behind-the-scene thinking on the subject eventually resulted in the denial of humans as special creations endowed by God with immortal souls, leading him to conclude:

We must acknowledge, as it seems to me, that man with all his noble qualities, with sympathy which feels for the most debased, with benevolence which extends not only to other men but to the humblest living creature, with his god-like intellect which had penetrated into the movements and constitution of the solar system—with all these exalted powers, man still bears in his bodily frame the indelible stamp of his lowly origin.

Darwin’s Contemporaries’ Thoughts Regarding the Immortal Soul and Its Relation to Evolutionary Theory

A brief sampling of Darwin’s contemporaries demonstrates that they also deeply contemplated the issue of the immortal soul and its relation to their contemporary scientific theory. For instance, John Frederick William Herschel, F.R.S., an English mathematician, astronomer, chemist, experimental photographer/inventor and botanist, whose work in scientific methodology (1840) greatly influenced Darwin, scoffed at those who believed that science


62 Ibid., brackets original.

63 Darwin, The Descent of Man, 1055.

64 For a more complete discussion of Darwin’s contemporaries on the issue of special creation, see Neal C. Gillespie, Charles Darwin and the Problem of Creation (Chicago: University of Chicago Press, 1979).

“fosters in its cultivators an undue and overweening self-conceit, [that] leads them to doubt the immortality of the soul and to scoff at revealed religion.”66

Rather, science, Herschel proposed,

by cherishing as a vital principle an unbounded spirit of enquiry, and ardency of expectation, . . . unfetters the mind from prejudices of every kind, and leaves it open and free to every impression of a higher nature which it is susceptible of receiving, guarding only against enthusiasm and self-deception by a habit of strict investigation, but encouraging, rather than suppressing, every thing that can offer a prospect or a hope beyond the present obscure and unsatisfactory state.67

In 1844, Robert Chambers, F.R.S.E., who moved in highly influential scientific and political circles, anonymously published his Vestiges of the Natural History of Creation,68 which claimed in the concluding chapter to be “the first attempt to connect the natural sciences in a history of creation.”69 The book was highly criticized due to Chambers’s stance that God might not be actively involved in the sustenance of the natural and social hierarchies. In regard to the immortal soul, he contended that

A distinction is therefore [often] drawn between our mental manifestations and those of the lower animals, the latter being comprehended under the term instinct, while ours are collectively described as mind, mind being again a received synonyme with soul, the immortal part of man. There is here a strange system of confusion and error, which it is most imprudent to regard as essential to religion, since candid investigations of nature tend to shew its untenableness. There is, in reality, nothing to prevent our regarding man as specially endowed with an immortal spirit, at the same time that his ordinary mental manifestations are looked upon as simple phenomena resulting from organization [i.e., purely physical processes], those of lower animals being phenomena absolutely the same in character, though developed with much narrower limits.70

Significant for our concern in this paper, Chambers’s remarks about the immortal soul indicate his concern regarding the possibility of dual origins of immaterial soul and material body. His footnote connected to this passage further strengthens this point, arguing that God, as first cause, was the creator of not only immaterial soul and mind, but also matter itself, through which these immaterial properties flow.71 However, he asks,

66Ibid., 7.
67Ibid., 7-8.
69Ibid., 388.
70Ibid., 325-326, n. *.
71Ibid., 326.
Can we say that God has not in matter itself laid the seeds of every faculty of mind, rather than that he has made the first principle of mind entirely distinct from that of matter? Cannot the first cause of all we see and know have fraught matter itself, from its very beginning, with all the attributes necessary to develop into mind, as well as he have from the first made the attributes of mind wholly different from those of matter, only in order afterwards, by an imperceptible and incomprehensible link, to join the two together?72

This “imperceptible and incomprehensible link” between mind (i.e., immortal soul) and matter seemed to Chambers to be unnecessary. Rather a scientific perspective appeared, to him, to demonstrate the plausibility of an organic unity between the two elements, a unity given by God himself. Pointing to the New Testament, Chambers then concludes that the Scriptures do not present a soul, after death, having no connection with space and time, having no connection with matter. Citing Thomas Hope, On the Origins and Prospects of Man (1831), Chambers notes that the New Testament “promises a mind situated in portions of time and space different from the present; a mind composed of elements of matter more extended, more perfect, and more glorious,”73 thereby demonstrating his remaining reliance upon older concepts of the immortal soul.

George Combe, a Scottish phrenologist, who, among other things, studied and sought how to reform and punish the criminal classes, distinguished between his understanding of the immortal soul and his view of death, which was similar to that proposed by Darwin. Combe, in 1847, notes that “The true view of death, therefore, as a natural institution is, that it is an essential part of the system of organisation. . . . Besides, organized beings are constituted by the Creator to be the food of other organized beings, so that some must die that others may live.”74 To clarify whence his argument regarding death leads, he proposed that “To prevent, however, all chance of being misapprehended, I repeat, that I do not at all allude to the state of the soul or mind after death, but merely to the dissolution of organized bodies; that, according to the soundest view which I am able to obtain of the natural law, pain and death during youth and middle age, in the human species, are consequences of departure from the Creator’s law; while death in old age, by insensible decay, is an essential part of the system of organic existence as now constituted.”75

72Ibid., 326-327, n. *
73Thomas Hope, On the Origin and Prospects of Man (1831), cited in Chambers, Vestiges, 328.
75Ibid., 244-245.
Also in 1847, Richard Owen, English botanist, creator of the term “Dinosauria,” and a fierce opponent of Darwin’s concept of evolution (he was himself an evolutionist, but felt that Darwin’s proposal was too simplified), proposed that “This [bodily] frame is a temporary trust, for the uses of which we are responsible to the Maker.”\textsuperscript{76} A monogenist, Owen proposed that “The supreme work of Creation has been accomplished that you might possess a body—the sole erect—of all animal bodies the most free—and for what? for the service of the soul.”\textsuperscript{77}

Reactions to Darwin’s *The Descent of Man*

When Darwin’s *The Descent of Man* was published in 1871, the response was immediate and varied.\textsuperscript{78} A review in *The Athenæum*, no. 2262, 4 March 1871, opined that “An evolutionist of the Darwinian order is bound to be further than the moral sense and the intellectual faculties if he believes in the existence of the human soul. . . . As certainly as we evolve sex, so certainly must we evolve soul. If the former be due purely to natural selection, so is the latter.”

A review in *The Saturday Analyst and Leader*, dated 10 November 1860, proposed that there was no “contradiction in the endowment of man with an immaterial soul, supposing him to have originated according to the Darwinian theory, than if he had originated in any other way. Put it broadly: was it more easy for Omnipotence, to which all possible things are equally easy, to give man an immaterial soul, if made out of clay; than if he spring from the next resembling animal type?” Further, the Mosaic account “does not conflict with the indefinite modifiability of man, but on the contrary agrees with it.” The reviewer affirms this point by noting the great diversity of humanity that has proceeded from Adam and Eve, “in a word, all the different species of men on the face of the earth, must have developed and differentiated out of one primitive type.”

The *New York Daily Tribune* of 1 June 1871 noted that “Darwin himself admits that somewhere in the vast line of human development, the soul, by Divine power, was made immortal,” while *The Saturday Review*, 24 December 1859, postulated that “No conceivable amount of evidence derived from the growth and structure of animals and plants would have the slightest bearing upon our convictions in regard to the origin of conscience, or man’s belief

\textsuperscript{76}Richard Owen, *On the Classification and Geographical Distribution of the Mammalia*, being the Lecture on Sir Robert Reade’s Foundation, Delivered before the University of Cambridge, in the Senate-House, May 10, 1859. To which is Added an Appendix “On the Gorilla” and “On the Extinction and Transmutation of Species” (London: John Parker, 1859), 50.

\textsuperscript{77}Ibid.

\textsuperscript{78}A collection of reviews of the book, totaling 871 independent responses, may be found in the Cambridge University Library. This collection may also be found at Darwin Online (http://darwin-online.org).
in a Supreme Being and the immortality of his own soul. . . . We know that there are limits which human reason is unable to overpass, but we believe that those limits will be more surely ascertained and fixed by the right use of reason itself than by the edict of an external authority.”

Continuing in the vein of denigrating the “external authority” of Scripture, a review from The Literary World, 17 March 1871, remarked condescendingly: “He who believes in the advancement of man from some lowly organised form, will naturally ask how does this bear on the belief in the immortality of the soul. The barbarous races of man, as Sir J. Lubbock has shown, possess no clear belief of this kind; but arguments derived from the primeval beliefs of savages are, as we have just seen, of little or no avail.”

The Liverpool Leader, 18 March 1871, assured its readers that no danger was to come to natural theology as proposed by Paley by Darwin’s concepts of humanity. The author notes that no matter how one might conceive of the origin of things,

Our minds are so constituted that they cannot rest content with a mere sequence of lifeless and mechanical causes; they must work back until they reach, as the ground and cause of all these secondary causes, an intelligent volitional Being, in some way resembling that which is highest in the soul of man. At this point our curiosity can and does pause, not as comprehending, but as conscious that it has reached the end of its tether. The mind, knowing that it cannot in the least comprehend, or get behind, one of its own acts of free volition—every one of which is, on a smaller scale, a veritable creation—is for that very reason prepared to acknowledge that, when it has reached such a mystery as the will of an intelligent Creator, it has reached a limit which it cannot pass. Till it has reached this point, however, the search for causes cannot stop.

This idea of the restless soul that must search to find its meaning is also reflected in a review from The Nonconformist, 4 May 1871, which provides a fitting summation of the deeply ingrained notions regarding the immortal soul and its place within scientific discussion, especially in regard to the question of the essence of humanity. In a direct echo of William Perry’s earlier pronouncements of polygenism, the review proposes that Darwin’s theory of evolution must necessarily stop at the level of savage life because Darwin leaves humanity fixed, rigid, immovable. In order to go beyond this, man must rise ‘above himself’ . . . . From this point the life of man is not simply human; it is Divine, and cannot be completed without Divine intervention, which infantile science ignores, and calls ‘a break,’ and leaves to be discussed in ‘another place.’ Yet here, if anywhere, the noblest Biology commences, and science must yet find some way of bringing its theories of evolution up to this better elevation. We do not ask this of
Mr. Darwin, and if the sense of deficiency has been forced upon us, he himself and his Psychology must bear the blame.

To be finally and completely human, one must possess that final element of humanness, the immortal soul.

Summary

Thus it is that Darwin and his colleagues struggled with the question of the immortal soul and its relation to Darwin’s evolutionary theory. However, these are not merely the ramblings of an older, less-informed age. The debate over the immortal soul continues in contemporary discussions among theologians and scientists. It is to this hidden dimension in the writings of William A. Dembski and his colleagues that we now turn.

*William A. Dembski et al. and the Immorality of the Soul*

One particularly evocative hint that the newly emerging Intelligent Design movement of the late twentieth century was something more than a new, alternative approach to Darwinian evolution in terms of material origins was presented in *Signs of Intelligence: Understanding Intelligent Design*, edited by William A. Dembski and James M. Kushiner. For the remainder of this discussion on the continuing importance of the immortality of the soul and its relation to science, we will look at the claims about the need for the reintroduction of the immaterial immortal soul into modern science made by the various proponents of the Intelligent Design movement.

*John G. West Jr.*

Some fifty pages after Dembski’s pronouncement that “Proponents of intelligent design regard it as a scientific research program that investigates the effects of intelligent causes,” and his assertion that the Intelligent Design movement is “not religiously motivated,” John G. West Jr. boldly proposes that Intelligent Design

suggests that mind precedes matter and that intelligence is an irreducible property just like matter. This opens the door to an effective alternative to materialistic reductionism. If intelligence itself is an irreducible property, then it is improper to try to reduce mind to matter. Mind can only be explained in terms of itself—like matter is explained in terms of itself.

In short, intelligent design opens the door to a theory of a nonmaterial soul that can be defended within the bounds of science.

79 Dembski, 17, 12.

West then proposes five effects of an established belief in the immortality of the soul for public policy in the United States: within a legally recognized system of science based upon intelligent design that incorporates within it a belief in the immortality of the soul, (1) welfare policies would stop focusing narrowly on “changing material inputs” and would look at “issues of character and accountability”; (2) traditional morality would be reinstated and “would promote honest questioning of whether certain behaviors—such as adultery—really do serve a biological function” and “may provide a powerful way to check the moral relativism spawned by scientific materialism, especially in the areas of family life and sexual behavior”; (3) in regard to the sanctity of life, “Once the idea of a nonmaterial soul gains new currency, the ethical context in which issues such as abortion and euthanasia are debated will considerably expand”; (4) in defense of science itself, intelligent design would supply “a framework for science that can account for the full richness of what human beings really are” and “help restore the integrity of science”; and (5) intelligent design helps to support free inquiry because “it admits a far wider range of possible explanations in scientific discussions” and is not, like modern science, “monocausal.”

Not only is West's proposal for the reintroduction of the immortal soul seemingly inappropriate from the perspective of the Intelligent Design movement’s stated claims of “scientific theory alone,” but it also invites a sobering reflection on the meaning of a political system that is based entirely upon the views of one religiously oriented segment of the population.

John Mark Reynolds

In his essay, “Getting God a Pass,” John Mark Reynolds laments the lapse of psychology into materialistically oriented veins. He notes that “Traditional Christians have almost universally proclaimed their belief in an immortal soul, distinct from the brain. People have souls. If people have souls not made of matter and energy, an important limitation is placed on a naturalistic science.” The problem with “theistic naturalists,” Reynolds proposes, is that they have discarded the notion of the immortal soul, which they find to be “theologically controversial.” Such a move leaves people without souls and provides them with brains. “Mind, for these thinkers, can be explained as the product of matter and energy: There is no ‘ghost’ in the machine. . . . The

81Ibid., 66-68.
theistic naturalist then argues that this is how biblical revelation and Christian theology should have been understood all along.83

Reynolds finds a corrective for this problem not in the realm of science, but in the act of worshiping, which joins together body and soul, noting: “From the first to the last “in the historic liturgy of the church the mystery of the Passion is connected to the mystery of the Word that became flesh. Christians have never hated matter and energy, for our God took on human form.”84

Once again the question is begged as to how this reintroduction of the immortal soul fits within the realm of scientific discipline.

William A. Dembski

Dembski addresses the question of the soul in his book, The End of Christianity: Finding a Good God in an Evil World. In it, he challenges the notion that the earth is a place for “soul-making.”85 He proposes that because “sin propagates through nature and brings about natural evil,” the “disordered state of nature mirrors the disordered state of our souls.”86 The process of redemption, for Dembski, is based upon the notion of the free will of the soul. The turning back to God cannot be “coerced.”87 But the role of redemption is broader in scope. For Dembski, it is about the “reordering” of everything, including the soul. “Thus nature, which now reflects humanity’s fallen state, needs to be restored,” an event which takes place in the redemptive processes of “the Cross and Resurrection of Jesus Christ.”88

Dembski also expresses his concern that mainstream contemporary Christianity has lost its traditional understanding of the fall. His following statement is telling about his views regarding the immortal soul:

Referring natural evil to the freedom of creation rather than to the Fall has become a consistent pattern in contemporary theology, which seeks to redress the Fall by rationalizing why the Fall isn’t, as it seemed to previous generations of theologians, a horrible tragedy. Such rationalizations are absent from the O felix culpa (O fortunate fault) tradition of classical Christian theology. This tradition redresses the Fall by pointing to the great redemption in Christ that the Fall elicits. In that tradition, just because a good outweighs an evil does nothing to make the evil less evil. Yes, in the end we will be better off because Jesus saved us from evil rather than because we happened to be descendants of an Adam and an Eve who escaped evil by

83Ibid., 83.
84Ibid., 87.
86Ibid., 28.
87Ibid.
88Ibid.
never sinning. But their sin and its consequences must, even in the *O felix culpa* tradition, be viewed as tragedy.  

Dembbski argues “that cosmic and transhistorical consequences to human sin remain eminently reasonable. . . . In fact, . . . viewing natural evil as a consequence of the Fall is entirely compatible with mainstream understandings of cosmic and natural history.”  

Further, he proposes, “Redemption is a painful business. . . . Redemption is God having the final word.”  

Dembbski has arrived at his concept of the soul and its relation to natural phenomena and science. In the interactive relationship between God and human beings, God seeks to restore the fallen soul and bring it and the creation into relationship with himself. Berkouwer is correct when he proposes that “Protestant discussion of original sin did not center on the dilemma of monogenism or polygenism, which played no role in the controversy between creationism and traducianism, but rather on the other question of the ‘inheritance’ of sin.”  

Thus for Dembski this inherited original sin is of a destructive nature not only to humans but to the whole creation. The process of redemption is one in which not only humans will share, but also the whole of creation.

In summary, it would seem then that Dembski proposes a type of traducianism—once the original purity of the soul is lost in the fall, the immortal soul becomes transmitted through parentage, as with the animals.

Summary

While it is quite true that Dembski et al. speak very little about the relation of the immortal soul in their concept of Intelligent Design, what they do say is significant and seems to reflect that their position in general is religiously motivated. First and foremost is the fact that the intelligent designer they invoke is not simply concerned with human ancestry, but, importantly, with the origin of the immortal soul. This is reflected in Dembski et al.’s application of the soul to the question of morality and the problem of evil. Further, all of the individuals examined here but Dembski seem to apply a Roman Catholic/Reformed paradigm of dual creationism to their understanding of the body and the immoral soul, while Dembski himself seems to lean toward a traducian perspective. Therefore, the Intelligent Design movement seems to fall within
the older tradition of the theology-and-science dialogues of the nineteenth and early twentieth centuries, making it an effectively religious position.\footnote{It would, however, be more forthcoming if Dembski et al. would admit to their religious motivation, thereby giving their position more credibility if they “owned” this aspect at its foundation. Further investigation is needed to understand the political motivation behind their reticence to do so.}

Conclusion

As we have observed, the question of the immortal soul remains an important element within the theology-and-science dialogue. Further, the meaning of the term “creationism” must be carefully understood, as it may be applied independently or simultaneously to both the origin of human ancestry and the origin of the immortal soul. As Neal C. Gillespie notes, “The core of special creation, then, was . . . the direct, volitional, and purposeful intervention of God in the course of nature, by whatever means, to create something new.”\footnote{Gillespie, 22.} However, as we have seen, even within this definition there is great room for differing perspectives. As Gillespie further notes: “The use of the word creation in itself means nothing. Its meaning can be determined only by the context in which it appears and by what is known independently about the beliefs of the author in question. Interpretation is further complicated by the fact that the same author may use the term in different ways during his career.”\footnote{Ibid., 25.}

It is important, then, for scholars in the theology-and-science dialogue to understand the terminology of creationism. Creationism, as applied to the origin of the soul, transcends the question of human ancestry by allowing the discussion of issues of God and morality, but it also allows human ancestry to be discussed exclusively within the purview of natural science. The Intelligent Design movement brings the question of God’s relationship to and activity in the world to the forefront. While this is helpful, it does not go far enough in defining the foundations of intelligent design, and it ultimately accepts the Creationist/Traducianist perspectives of traditional, mainstream evangelicalism of the twentieth century. For those who do not ascribe to the concept of the immortal soul, there remains a discontinuity between science and theology that begs a theological response. Creationists who espouse a biblically based understanding of creation, which is not evolutionary, and who do not believe in a doctrine of the immortal soul need to dig deeper for a responsible discussion on the creation.\footnote{For further discussion on this point, see my dissertation, “Toward a Holistic Interdisciplinary Causal Model: A Broadened Conception of the Anthropic Cosmological Principle: Life History and Teleology—“From the Starry Heavens Above to the Moral Law Within” (Ph.D. dissertation, Andrews University, forthcoming).}