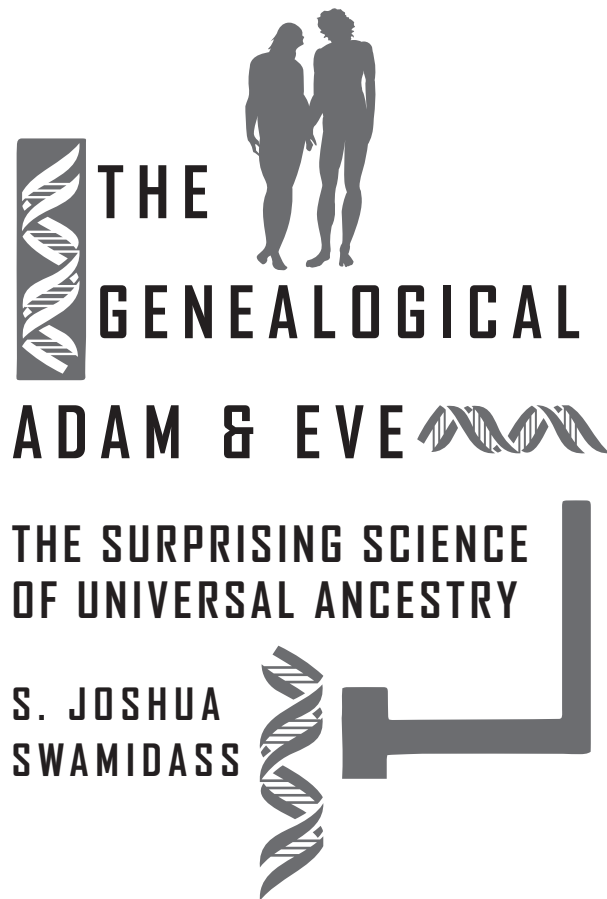


ONLINE APPENDIXES



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APPENDIX 2

ANDREW TORRANCE'S RESPONSE

In summer 2018, an early manuscript of this book was presented to the Dabar Conference of the Creation Project of Trinity Evangelical Divinity School. The theologian Andrew Torrance was an official respondent. The final version of the book responds to the questions and objections he raises in this response to the manuscript presented at Dabar.



THERE IS MUCH TO PRAISE about Joshua Swamidass's paper, so I would like to begin by highlighting and elaborating on what I perceive to be three of its real strengths.

WHAT I LEARNED FROM THIS PAPER

The natural sciences cannot rule out the possibility of a historical Adam and Eve. First, many of us are aware that it has become commonplace for much of Western thought to assume that the natural sciences call into question (1) the existence of a historical Adam and Eve and (2) the possibility that everyone alive at the time that the Bible was received was a descendant of Adam. Therefore, it is often taken for granted that anyone who might affirm these things is scientifically naive.

In his paper, Joshua masterfully challenges these assumptions. He exposes the ways in which persons massively overestimate what science can tell us when they draw on it to deny the historical basis for an Adamic theological anthropology. He argues convincingly and, in my view, successfully that

Entirely consistent with the genetic and archaeological evidence, it is possible Adam was created out of dust, and Eve out of his rib, less than ten thousand years ago, living in a divinely created Garden where God might dwell with them, the first beings with opportunity to be in a relationship with him. Perhaps their fall brought accountability for sin to all their natural descendants. Leaving the Garden, their offspring blended with their neighbors in the surrounding towns. In this way, they became genealogical ancestors of all those alive when recorded history begins about six thousand years ago. Adam and Eve, here, are the sole progenitors of all humankind.

This is important because, he argues,

Scripture's message, and that of traditional theology, is bound to the context where all people descend from Adam, and silent about others. When Scripture is received, everyone alive is a descendant of Adam (black line). Those outside the Garden . . . are unreferenced in theology, because they are no longer with us.

After reading Joshua's paper, I come away even more convinced that the natural sciences cannot rule out the possibility that two persons, Adam and Eve, actually existed and were the sole progenitors of humankind as we now know it.

To be clear, however, Joshua does not argue that there is a scientific case to be made for the possibility that Adam and Eve existed. Rather, he simply demonstrates that, if they existed, the possibility that they are ancestors of all of us cannot be ruled out in the name of contemporary science. In response to this argument, I am also much readier to admit that this is possible. Indeed, if I thought this point were crucial for Christian theology, I would probably go so far as to see this as likely.

The distinction between those outside the Garden and those inside the Garden to Gentiles and Jews was helpful. The second strength I see in this paper is the way that Joshua draws a distinction between (1) Adam, Eve, and their descendants and (2) those who never existed in the Garden of Eden and who never descended from Adam and Eve. He makes the case that Adam, Eve, and their descendants are given to fulfill a particular role in God's mission to creation. In this respect, he compares this distinction to the distinction between Jews and Gentiles. I found this very helpful. The claim that God would specially create two human beings, Adam and Eve, to inaugurate a special historical relationship between God and creation is one that aligns neatly with the history of God's covenant with the humanity. In short, Joshua's way of framing this possibility gave me some further reason to think that the historical existence of Adam and Eve could make some good sense theologically.

Genealogy and genetics. The third point I found helpful is the distinction he draws between genealogical and genetic ancestry. In his paper, Joshua makes the case that "a great deal of conflict is caused by reading 'genetic' into ancestry." He then goes on to argue that "genealogical ancestors are not usually genetic ancestors." I found this point interesting and recognize that there are ways in which I had perhaps drawn too close a connection between genealogical and genetic ancestry. As Joshua suggests, there is a need for serious theological reflection on the significance of genealogies that go beyond what scientists can tell us. There's more to say here, but that would lead me to become distracted from the paper at hand.

QUESTIONS

I would like to turn now to some questions that arose in mind after reading Josh's paper.

The challenge of geographical spread. In his paper, Joshua proposes that it is feasible that Adam and Eve could have existed, fallen, and been exiled from the Garden of Eden between six and fifteen thousand years ago. He wants to argue that this happened less than ten thousand years ago, with the rise of civilization.

Following the fall, Adam, Eve, and their offspring then proceed to breed with those outside the Garden to the extent that everyone who comes to exist at the time when Scripture is received is a descendant of Adam. This means that over approximately two to six thousand years everyone in the world becomes a descendant of Adam and Eve—including those in Australia, the Americas, and so on. Joshua makes the case that this is possible even without any special acts of providence or miracles.

While Joshua has convinced me that this is scientifically possible, I struggle to see how this is likely. Having said that, I realize that my probability assessment here is influenced by the fact that (1) I do not think it is theologically important to believe that Adam and Eve existed six to fifteen thousand years ago, and (2) I do not think it is theologically important to view Adam and Eve as the sole progenitors for humankind.

If I did think these things were theologically important, then I would be inclined to see this possibility as likely. This is because I do think that my Christian commitments can have an impact on the probability assessments I make about the history of the natural world.

For this reason, I can recognize the value of Joshua showing that it is scientifically plausible for Adam and Eve to be the sole progenitors for humankind. For those who see this as a requirement of Christian orthodoxy, it can be

important for them to see that their position is compatible with the natural sciences. Why? So that they do not think that they are faced with a choice between science and Christianity.

At the same time, if this really is theologically important, then I think the Christian who wants to take contemporary science seriously should also take seriously the possibility that this is facilitated by special acts of providence rather than simply being left up to chance. Why might she want to do this? It seems to me that, without special divine action, there is a very high likelihood that, over this two- to six-thousand-year period, Adam, Eve, and their descendants would not succeed in ensuring that everyone in the world would become a descendant of Adam and Eve.

Do we need to affirm that all persons descended from Adam? I also have another concern here. While Joshua is simply arguing that this position is scientifically possible, he is also motivated by the fact that he thinks “Scripture’s message, and that of traditional theology, is bound to the context where all people descend from Adam.” I am happy to recognize that Scripture and much of traditional theology was developed in a context in which it was presumed that everyone descended from Adam over a period of two to six thousand years. However, just because this may have been the dominant view in this context does not mean that we also need to be committed to this view. This would be required only if it were essential to Christian orthodoxy, and I’m not sure that it is—and Joshua also doesn’t think it is.

So, for example, it seems perfectly within the realm of Christian orthodoxy to view Adam as a representative of the human race, even if the whole human race did not naturally descend from him. This would be my view, and this strikes me as a more likely possibility that is just as theologically viable.

Without going into the details of my own position, I am slightly concerned that Joshua’s paper could be taken to suggest that it is important for Christian theology that, over a period of two to six thousand years, everyone in the world becomes a descendant of Adam and Eve. It strikes me that this view could alienate some persons from the Christian faith. It could also potentially lead some Christians to question their faith. So while I am sympathetic with Joshua’s particular ecclesial concerns, I also have some slightly different ecclesial concerns that mean that I would like to see some of Joshua’s statements expressed a bit more cautiously.

Having said that, I should make it clear that, generally speaking, Joshua does show such caution. He writes, “All scenarios consistent with the Scriptural and scientific evidence are helpful. The model proposed here should only be regarded as tentative, as a starting point for further reflection.”

Nonetheless, after reading Joshua’s paper a couple of times, I still think that there were a few points where he could have been even more tentative—although I realize that my concern here is in response to those points where Joshua was pushing against my own position.

Original sin is spread genealogically. Last, one of the points that Joshua seeks to maintain with his hypothesis is the view that original sin is conferred exclusively to us through a single couple, Adam and Eve, by way of natural descent. This is possible, again, because they are the sole genealogical progenitors of all of us. I might be missing something, but I’m not entirely clear why it is important to view original sin as being passed down by way of natural descent, through genealogical ancestry. As an alternative, I see no reason why Adam and Eve couldn’t be taken to have inaugurated a fallen history within creation, a history in which everyone is born into sin. Under these circumstances, the human race is defined by original sin because, as a consequence of the fall of Adam, they are born into a world that is alienated from God and consequently disordered—it is removed from God’s ordering presence.

Obviously, on this view, I can maintain a doctrine of original sin without having to affirm that everyone descends naturally from Adam and Eve.

Now, one good reason to affirm that original sin is passed down by way of natural descent is that this is Augustine’s view. And, generally speaking, it is a good idea to agree with Augustine; Augustine has shaped so much of what we want to affirm in the name of Christianity. However, at risk of saying something untoward, I think it is possible that

Augustine didn't get everything right. And I'm yet to be convinced that we should accept all that Augustine has to say about original sin.

So, my question here is, Why else might it be important to affirm that original sin is passed on through genealogical ancestry? Why is it important for a doctrine of original sin to affirm that we "all are born 'in' Adam's *transgression* by way of *genealogical* inheritance of a debt of sin"? Joshua has made it clear that there is no scientific reason to deny this, but I would like to hear a bit more about the theological reasons for affirming this.

I realize that many of my thoughts here are fleeting and underdeveloped, so I look forward to discussing them in more depth. But let me end by saying that I learned a tremendous amount from reading Joshua's paper. His paper serves as another reminder that theologians stand to benefit enormously from engaging in constructive conversation with scientists.

APPENDIX 3

C. JOHN COLLINS'S RESPONSE

In summer 2018, an early manuscript of this book was presented to the Dabar Conference of the Creation Project of Trinity Evangelical Divinity School. The theologian C. John Collins was an official respondent. Collins is the author of Did Adam and Eve Really Exist? (Crossway, 2011). This appendix is his response to the manuscript presented at Dabar. The final version of the book adjusts according to the advice Collins offers here.



LET ME BEGIN BY THANKING the Henry Center for asking me to respond to this paper, by thanking Dr. Swamidass for this stimulating and helpful piece, and, finally, by congratulating Dr. Swamidass on his recent promotion at Washington University.

Perhaps I have already tipped my hand in saying that I find the paper stimulating and helpful. Indeed, Dr. Swamidass has titled his own blog *Peaceful Science*, and I count this paper as just such an effort, offered in good faith.

At the same time, my task is to be iron sharpening iron (Prov 27:17). Remarking on that passage, Derek Kidner mentions what he calls “the healthy clash of personalities or views”; “a true friendship,” he explains, “should have both elements, the reassuring and the bracing.”¹

I view Dr. Swamidass’s paper as an entry in a conversation² and I could describe my response, and the rest of the responses, and his reply, and so forth, in terms of what in linguistics is called conversation analysis, or even game theory. But I much prefer to appeal to the authority of St. Eeyore in the Sacred Pooh canon, in the story “In Which Eeyore Finds the Wolery and Owl Moves into It”:

“Not *conversing*,” said Eeyore. “Not *first one and then the other*. You said ‘Hallo’ and Flashed Past. I saw your tail a hundred yards up the hill as I was meditating my reply. I had thought of saying ‘What?’—but, of course, it was then too late.”

“Well, I was in a hurry.” [said Rabbit]

“No *Give and Take*,” Eeyore went on. “No *Exchange of Thought*. ‘Hallo—What’—I mean, it gets you nowhere, particularly if the other person’s tail is only just in sight for the second half of the conversation.”³

For my part in the conversation, I will offer comments on three general subjects: First, I will identify some of the positives I find in the proposal (and I find a fair few). Second, I will make a couple of biblical-theological clarifications that need not affect the value of the proposal as such but might shape the way one envisions its outworking. And third,

¹Derek Kidner, *Proverbs*, TOTC (Downers Grove, IL: InterVarsity Press, 1964), 45.

²As he says, “The model proposed here should only be regarded as tentative, as a starting point for further reflection.”

³Chapter 9 in *The House at Pooh Corner* (New York: Dutton, 2018 [1956]), 314.

I will outline a sampling of biblical and theological concerns that a good scenario needs to address—things that, in my judgment, will also govern the shape of the scenario. Right, then, here goes.

POSITIVE FEATURES OF THE SWAMIDASS PROPOSAL

The first positive feature to list is the very fact that the proposal has sought to preserve orthodox Christian theology and to make space for its adherents in their scientific practices.

Related to this is the second positive—namely, that the proposal takes historical referentiality seriously, without resorting to the more wooden kind of scientific concordism. There are those who, in renouncing this wooden concordism (in hopes of preserving Christian faith from conflict), wind up renouncing all kinds of respect for historical referentiality—and they do not appreciate that they have undermined the fundamental shape of the biblical story (and therefore harmed the robustness of their Christian faith).⁴

A third positive feature is the way that Dr. Swamidass, knowledgeable in the biological sciences, has criticized what he sees as a misuse of the biological results by those who would advocate that we abandon any traditional notion of Adam and Eve. These advocates have, in my judgment, framed their understanding of the role that Adam and Eve play in the story unsatisfactorily. Further, they have professed that science and theology are in a complementary relationship, but they do not themselves practice complementarity: they use their notion of the science to overthrow some core theological positions (invalidly, as I judge). Of course, I have focused on the exegesis and theology, and Dr. Swamidass is one of those who have addressed the biology.⁵ I will come back to some of the theological side shortly.

Fourth, Swamidass's focus on the *genealogy* rather than the *genetics* and his motivation for it is spot on: namely, the biblical language is concerned with line of descent, or genealogy; to appeal to the genetic questions, important as they may be for some purposes, foists a misleading anachronism on the biblical text. The same may well be true of the notion of *human*.⁶ One could wish that all discussions of these matters were as respectful of the language level and communicative concerns of the biblical authors!⁷

Fifth, Swamidass has offered a scenario for envisioning how the biblical events might have taken place. The literary and rhetorical features of the biblical materials are rarely oriented to giving us what we would have seen had we been there when these primordial events happened (even when they are asking us to be confident that there are indeed events to which the accounts refer). Hence the production of scenarios is a reasonable enterprise, so long as we do not confuse the referent and our scenario in their epistemic status. More on this in a moment as well.

And sixth—Swamidass does not raise this directly, but it stood out to me as I read his paper—we need to consider the possibility that biology, as it is currently constituted, does not capture enough of what it means to be human (or perhaps other animals as well). By this I mean that the relational side of humans eludes what is at present done as biochemistry—our interconnectedness, for example, and our relations that theologians call solidarity and interchange. No doubt these faculties ride on our chemical mechanism, just as our rational and moral faculties do (which are conventionally recognized as going beyond our material components). At the same time, with Warfield, I would not like

⁴An example of a blanket negative cast on *concordism* see Denis Lamoureux's review of C. John Collins, *Did Adam and Eve Really Exist?*, in *Perspectives on Science and Christian Faith* 63 (2011).

⁵Recently, see Dennis Venema and Scot McKnight, *Adam and the Genome: Reading Scripture After Genetic Science* (Grand Rapids: Baker, 2017). I review this work in a forthcoming number of *Bulletin for Biblical Research* and mention Richard Buggs of the Royal Botanic Garden Kew and Queen Mary University of London, who has posted critiques at *Ecology and Evolution*. A further example of the illegitimate use of science is Denis Lamoureux, "Beyond Original Sin: Is a Theological Paradigm Shift Inevitable?," *Perspectives on Science and Christian Faith* 67 (2015): 35-49.

⁶Here he draws on a distinction between the theological and biological species, noting (rightly, as I judge) that the Bible would focus on the former. More on this below.

⁷For more discussion, see my "Inerrancy Studies and the Old Testament: 'Ancient Science' in the Hebrew Bible," *Presbyterian* 44 (2018): 42-66.

to suggest that one could take an evolved hominid and simply add soul to it and—hey-presto!—you have a human.⁸ So I would say that our physical components are arranged in such a way as to support these relations and activities but do not fully account for them.⁹

BIBLICAL-THEOLOGICAL CLARIFICATIONS

The Swamidass paper applies its biological theory under the reading of Genesis 1–2 that sees them as sequential accounts in the way that John Walton has argued for. I will here simply note that this reading is exceedingly vulnerable to critical review. Another reading is better attested, both within the canon and up close to it, and more readily supportable—namely, that Genesis 2:4–25 narrates an expansion of certain events in the sixth day.¹⁰ My preliminary judgment is that the value of the proposal does not depend on the Waltonese reading.

Swamidass refers to a class of scenarios that involve representation (including one offered by me), in which the representation is potentially “independent of a genealogical connection to Adam.”¹¹ I need to clarify that these scenarios are not all the same—those that have the representation at the “headwaters” of humankind are specifically responding to exactly the issue that Swamidass rightly concerns himself with, namely, the seeming arbitrariness of God otherwise. The clarification, then, is that those who posit an imputation based on representation downstream from the headwaters of humankind suffer from this critique; I recognize that this is not what Swamidass is proposing.

IMPORTANT EXEGETICAL AND THEOLOGICAL CONCERNS A SCENARIO SHOULD ACCOUNT FOR

I would argue that, at the least, the Christian story assumes as true the following points:¹²

1. The human race is one family with a unified origin (regardless of the initial population size).
2. Humans arose by a process that goes beyond the impersonal.
3. Sin is an alien intruder into God’s good creation and entered into human experience at some point in the headwaters of human history.

(We can get more specific, and I would indeed do so. But I am opening my arms as widely as I can for now.) I think that Swamidass wants to allow us to preserve these, so these final remarks are aimed at enabling that preservation.

The notion of original sin as such should be defined carefully. For many, the very name is so associated with Augustine that rejecting details of Augustine’s views equates to rejecting the whole notion.¹³ However, it is standard

⁸B. B. Warfield, “The Manner and Time of Man’s Origin,” *The Bible Student*, November 1903, 241–52; reprinted in Warfield, *Evolution, Science, and Scripture: Selected Writings*, ed. Mark A. Noll and David N. Livingstone (Grand Rapids: Baker, 2000), 211–29.

⁹As C. S. Lewis put it in his characteristically punchy fashion, “A man’s Rational thinking is *just so much* of his share in eternal Reason as the state of his brain allows to become operative”; see Lewis, *Miracles: A Preliminary Study* (New York: Macmillan, 1960), 39 (ch. 6).

¹⁰I have given some reason for this in my contributions to Matthew Barrett and Ardel Canaday, eds., *Four Views on the Historical Adam* (Grand Rapids: Zondervan, 2013), especially 127–29 (and more fully in *Reading Genesis Well: Navigating History, Poetry, Science, and Truth in Genesis 1–11* [Grand Rapids: Zondervan, 2018]).

¹¹Joshua Swamidass, “The Overlooked Science of Genealogical Ancestry,” *Perspectives on Science and Christian Faith* 70 (2018): 31; see also Swamidass, “Genealogical Adam and Eve,” 25, 30. Also, as a matter of detail, I do not think that Stott and Kidner actually support the proposal of Denis Alexander, as the question of timing does not enter in for them. That is, they do not consider whether the dates predate human migration.

¹²I have drawn these from my essay “Configuring Adam and Eve: Adam as Federal Head of Humankind,” in *Finding Ourselves After Darwin: Conversations on the Image of God, Original Sin, and the Problem of Evil*, ed. Stanley Rosenberg, Michael Burdett, Michael Lloyd, and Benno van den Toren (Grand Rapids: Baker Academic, 2018), ch. 10.

¹³I would also leave aside the question of whether Augustine depends on a “mistranslation” of Rom 5:12. First, it is more accurate to say that most New Testament scholars do not follow that reading today—which is not the same as saying that it is impossible. Second, I do not think the argument depends on that matter anyhow, as any modern (“Augustinian”) commentary on Romans will show.

among Greek-speaking Christians, well before Augustine, to see the disobedience of Adam and Eve, at the beginning of humankind, as the event that made all of us, their children, into sinners. They might differ in the details of how this works: the Greek speakers tend to focus on the result of the fall as both the lost chance for immortality and the subjection to moral and physical corruption,¹⁴ while the Western Christians have perhaps laid more stress on the guilt that follows. Even though there are differences of emphasis, there is so much common ground that we can say that some notion of original sin (or whatever we want to call it) is part of “mere Christianity” and is therefore not itself any kind of open question.¹⁵

The main thing is that humankind fell. Now, these writers always, whether explicitly or implicitly, assume the historicity of Genesis 3, with only two people at the headwaters—although at times some fathers can speak of humankind as a population having fallen (Athanasius, *Contra Gentes* 3.1–5):¹⁶

In this way, then, as has been said, did the Creator fashion the human race [τὸ τῶν ἀνθρώπων γένος, the race of human beings], and such did he wish it to remain. But humankind [οἱ ἄνθρωποι, “human beings”], contemptuous of the better things and shrinking from the apprehension of them, sought rather what was closer to themselves—and what was closer was the body and its sensations.

Most notions of original sin depend on a version of representation, or, perhaps, inclusion. There is nothing distinctively Reformed or even Augustinian in referring to Adam as a covenantal representative, since this occurs as early as Irenaeus (and even earlier, in Sir 14:17).¹⁷ The way it works is straightforward, once we accept solidarity as real: the actions of one member affect the whole group, and the proper representative (or “head”) can act on behalf of the whole body. We have a sense of how this works on the natural level: I was born into a family of US citizens, and had my parents emigrated from the United States before I was born, I would have legitimately “inherited” their new citizenship. But if my older cousin had emigrated, that would not have entailed me or my younger siblings; he is not a proper representative.

Second, the question of what the image of God is requires further work in the current environment. Explanations tend to fall into one of three camps, which I have dubbed *resemblance*, *relational*, and *representative* views.¹⁸ I wonder how the scenario might change according to how we understand the image.

I suspect that the preferred articulation of one's view of the image has changed with both the intellectual environment, and the pastoral needs, of the articulators.¹⁹ I would like to see studies that investigate this. For example, respected Hellenistic figures spoke of “likeness” to God, especially in the realm of morality, and perhaps that had an influence on how early Christians interpreted the image.²⁰ They would have said that Plato got his wisdom from above

¹⁴Athanasius, *On the Incarnation*, §§3-5, is clear on this. See Wis 2:23-24a: “God created man for incorruption, and made him in the image of his own eternity; but through the devil's envy death entered the world.” I have explored some of these matters in “Mortal Before the Fall? I Don't Know, I Don't Think You Do, and It Doesn't Matter,” *Sapientia*, May 24, 2018, <https://henrycenter.tiu.edu/2018/05/mortal-before-the-fall-i-dont-know-i-dont-think-you-do-and-it-doesnt-matter/>.

¹⁵See the blog of Jon Garvey, “Irenaeus (and Others) on Original Sin,” for helpful spade work on Michael Reeves, *Adam, the Fall, and Original Sin* (Grand Rapids: Baker, 2014). The approach of McKnight is outside this mainstream.

¹⁶As C. S. Lewis put it, “Man, as a species, spoiled himself”; see Lewis, *Problem of Pain* (London: Geoffrey Bles, 1940), 73, 76 (ch. 5).

¹⁷See discussion in Collins, *Reading Genesis Well*, §8D.

¹⁸See also Paul Sands, “The *Imago Dei* as Vocation,” *Evangelical Quarterly* 82 (2010): 28-41, who uses the triad *substantialist*, *relational*, and *vocational*.

¹⁹The landmark study of Gunnlaugur Jónsson, *The Image of God: Genesis 1:26-28 in a Century of Old Testament Research* (Lund: Almqvist & Wiksell, 1988), acknowledges this but is insufficiently self-critical about the late twentieth-century historical-critical environment.

²⁰See, for example, David Sedley, “The Ideal of Godlikeness,” in *Plato 2: Ethics, Politics, Religion, and the Soul*, ed. G. Fine (Oxford: Oxford University Press, 1999), 309-28; John M. Armstrong, “After the Ascent: Plato on Becoming like God,” *Oxford Studies in Ancient Philosophy* 26 (2004): 171-83. As a matter of fact, Eusebius had discussed this in the fourth century (see Eusebius, *Preparation of the Gospel*, 593d; 122c; 166d; 551ab).

(possibly even from Moses)! Certainly they would have seen the image as something that distinguishes humans from the other beasts, contrary to some moderns (see Athanasius, *De Incarnatione* 11.11–20; 13.1–13), and of course they focus on rationality (with all that means)—that is, a version of the resemblance view.²¹ They do at times include the others, as in the Epistle to Diognetus 10:1:

For God loved men for whose sake He made the world, to whom He subjected all things that are in the earth, to whom He gave reason and mind, whom alone He permitted to look up to heaven, whom He created after His own image.²²

For my own part (and to cut a long story short), I prefer, all other things being equal, to go with a view that is recognizably in continuity with qualified readers in the Second Temple period and early Christianity. I think that 1 Clement 33:8 leads the way into what I take to be the most defensible—namely, the image of God is a calling; the ideal life of a person and a community consists in imitating God, and the community should conduct its life in such a way as to foster this.²³ This involves all three of the triad and views the function of the Genesis text in relation to the fallen humans who first received it.

However we define the image, we also have to discern the mode by which it is transmitted—specifically, in what way procreation is involved in such transmission.

I wonder what kind of evolution is in view. Is it simply descent with modification, without prejudging how the modifications are introduced? If so, I do not see any strong theological objection to it: whatever natural processes are involved are, after all, God's processes. And even some kinds of progressive creation can be accommodated, with the kinds being initiated by separate infusions. (That view is not theologically needed, mind you; but we are trying to lower unnecessary barriers.)

Of course theists will allow that God is free to govern, and even add to, this process, should he wish to. This question is separable both from the question of whether he has in fact done so and from the question of whether, should an addition have taken place, we might be able to discern it. Like many, I consider the origin of the human array of linguistic, moral, and reasoning capacities to be the result of such an addition, but I would differentiate that from a scientific theory.²⁴ Nevertheless, I do not expect naturalistic theories to be adequate.²⁵

On the other hand, in many venues evolution is set over against intention; even in something as simple as the development of the domestic dog, the evolutionary scenario is opposed to the intention selection scenario.²⁶ I would like clarity on this word.

In this light, I'd also like clarity on evolutionary theory as science. I consider the study of whatever processes are involved to be a proper scientific endeavor. I also count the critique of the dominant theories to be a proper endeavor

²¹Contrast Joshua Moritz, "Evolutionary Biology and Theological Anthropology," in *Ashgate Research Companion to Theological Anthropology*, ed. Joshua Farris and Charles Taliaferro (London: Routledge, 2017), ch. 3.

²²In *The Apostolic Fathers*, ed. J. B. Lightfoot (New York: Macmillan & Co., 1891).

²³I am aware that some dispute this. Walter J. Houston, "The Character of YHWH and the Ethics of the Old Testament: Is *Imitatio Dei* Appropriate?," *Journal of Theological Studies* n.s. 58 (2007): 1–25, suggests that *imitatio Dei* is inadequate; but this is because he takes a fairly wooden and unqualified reading of the principle. Actually, the old Scholastic distinction between communicable and incommunicable attributes of God might help!

²⁴I have discussed this in my essay "Inerrancy Studies and the Old Testament," and more fully in *Reading Genesis Well*.

²⁵This is a critical thinking issue, not an empirical one as such; and it leads us to expect that experiments based on naturalism will fail, as they have done. Most recently, see Acoustical Society of America, "Can Chimpanzee Vocalizations Reveal the Origins of Human Language? While Closely Related to Humans, Researchers Discover That Chimpanzees' Vocalizations Resemble Human Language Less than You'd Expect," *ScienceDaily*, May 8, 2018, www.sciencedaily.com/releases/2018/05/180508081505.htm.

²⁶See, for example, Darcy F. Morey, "The Early Evolution of the Domestic Dog: Animal Domestication, Commonly Considered a Human Innovation, Can Also Be Described as an Evolutionary Process," *American Scientist* 82 (July–August 1994): 336–47; Carlos A. Driscoll, David W. Macdonald, and Stephen J. O'Brien, "From Wild Animals to Domestic Pets, an Evolutionary View of Domestication," *Proceedings of the National Academy of Sciences* 106, suppl. 1 (June 16, 2009): 9971–78.

since that's part of science. There is a sentence in the paper that is capable of a benign interpretation, but I should draw attention to it nonetheless: "Where science is silent, theology has legitimate autonomy" (21). It is fine in context; but, I would argue, we should not make this a general rule: things are far more complicated than that, as we all know.²⁷

The question of biological compatibility needs clarification. Probably those who both doubt that Neanderthals and Denisovans are properly "of us" (whatever that means) and also accept the geneticists' verdict that it looks like they have contributed to our genome implicitly accept some form of this. We are familiar with hybridization among separate species, but this nevertheless is a tension. Is it a perceived tension only, or is it a real one? Is it resolvable, or do we simply have to live with it? At what point does it transgress into bestiality (credible for fallen humankind, hard to accept for unfallen)?

The suggestion of differentiating the different kinds of species—the biological, theological, and philosophical—might be fruitful and finds support against critique from Edward Feser.²⁸ It needs development, though. I suspect that an expanded notion of biology, adapted to capture more of what it means to be human, will help.²⁹ (I would not want to apply this distinction to the unborn, disabled, or elderly, mind you.)

I have already raised the question of how both original sin and the image of God are transmitted, and I return to it here. Certainly the biological process of procreation has something to do with it; but so do such phenomena as membership and solidarity.

I once heard Peter Harrison say that if certain theological views are well-founded, and fundamentally important to a well-grounded system of belief, it can be rationally responsible to maintain those views, even if, for the time being, the science seems to call them into question. I believe he was right, at least for these basic beliefs about the origin of humankind and of sin. These are too well connected to the kind of experiences that are universally accessible and all but universally recognized. Sometimes, if we wait, new light will come in the scientific thinking. And sometimes, as well, someone with enough imagination will propose a workable scenario that helps us past the apparent hump. I still want to do some more thinking; and I feel the need for the expertise and wisdom of the Dabar conferees. But it looks as though Dr. Swamidass has indeed provided an imaginative and serviceable tool for our toolkits, to promote "peaceful science."

²⁷I find the writings of Alvin Plantinga (among others) helpful here.

²⁸Kenneth Kemp, "Science, Theology, and Monogenesis," *American Catholic Philosophical Quarterly* 85 (2011): 217-36. See Feser, "Monogenism or Polygenism? The Question of Human Origins," *Strange Notions*, <https://strangenotions.com/monogenism-or-polygenism-the-question-of-human-origins>.

²⁹Unless the biologically human and, say, philosophically human are so clearly distinct that these features can only be said to apply to the latter. My experience with other animals leads me to expect that this is not so.

APPENDIX 4

WILLIAM LANE CRAIG'S RESPONSE

The philosopher William Lane Craig was an attendee of the Dabar Conference of the Creation Project, where an early manuscript of this book was presented. In early 2019 he attended a workshop to discuss the book in more detail. The following text is excerpted from William Lane Craig's March 2019 newsletter, where Craig explains some of his objections. These objections are addressed in the final version of the book.



I BEGAN FEBRUARY WITH A TRIP to St. Louis to participate in a workshop at Washington University hosted by Dr. Joshua Swamidass, a computational biologist whom I came to know through the conferences of the Creation Project at Trinity Evangelical Divinity School. Josh has been a great help to me in understanding the ostensible challenges posed by population genetics to the historical Adam, the subject of my ongoing research. Josh has a forthcoming book provisionally titled *The Genealogical Adam*, which was the subject of this workshop. The manuscript was distributed to selected scientists, theologians, and biblical scholars in advance, who then came together to discuss the book from their respective points of view. Dr. Swamidass graciously welcomed comments and criticisms from every viewpoint.

His book defends the thesis that a relatively recent Adam, from whom all people alive today are descended, is scientifically unobjectionable. Swamidass argues that a *de novo* creation of Adam out of the dust of the earth around ten thousand years ago is wholly consistent with the evidence of population genetics and evolutionary biology. Why? Well, the number of your ancestors grows exponentially as you go back in time (two parents, four grandparents, eight great-grandparents, etc.), while at the same time the human population declines. This requires that before too long our ancestors begin to overlap. Within around four thousand years there must be someone who is a common ancestor of everyone alive today. Swamidass calculates that by AD 1, the time of the New Testament, every person on earth would be a descendant of Adam and Eve. The rub is that this hypothesis requires that there were other people outside the Garden of Eden, not descended from Adam and Eve but evolved from prehuman primates according to the usual story of evolution. After the expulsion from the Garden, Adam and Eve's descendants interbred with these other people, and that is why our genome exhibits the traces of a large human population and even Neanderthals. They, too, are our ancestors through their interbreeding with the offspring of Adam and Eve.

Swamidass's hypothesis seems to be scientifically unassailable. My reservations concern whether it is the most plausible interpretation of the biblical story of human origins. It seems to me that three factors combine to support the view that Adam and Eve are intended by the author of Genesis to be the ancestors of every human being that has ever lived—that is to say, truly universal human ancestors: (1) The purpose of the primeval narratives of Genesis 1–11 is to explain God's universal plan for and dealings with humankind. Scholars have often asked why the Pentateuch doesn't begin with the call of Abraham and the founding of Israel in Genesis 12. Commentators seem widely agreed

that the reason the author prefixes the prehistory to the patriarchal narratives is his universalizing interest. He wants to show that God's original plan was to bless all humankind and that this aim still remains ultimately in mind through the election of Israel, which is now God's means of fulfilling his original intent. So God wasn't preoccupied with just the offspring of one human couple to the neglect of everyone else, but with all humankind at that time. (2) A comparison of the story of the creation of humanity in Genesis with other ancient Near East creation stories shows that they had an interest in telling how humankind, in general, came to exist. For example, in the famous Atrahasis Epic, the lesser gods, tasked by the greater gods with the hard work of manual labor, like digging ditches, rebel and demand relief. In response, the mother goddess decides to create humans to take over the labor for them. Humans were created basically as slave labor for the gods. Such stories seek to answer the question of human origins in general. Genesis has a similar interest—and a very different answer! (3) In the story of humanity's creation in Genesis 2 it states explicitly "there was no one to work the ground" (Gen 2:5). This statement does not concern just the Garden of Eden, which had not yet been planted, but the general condition of the earth. There weren't any people outside the Garden. Then the story proceeds, "Then the LORD God formed a man from the dust of the ground and breathed into his nostrils the breath of life, and the man became a living being" (Gen 2:7). For these three reasons, it seems to me very likely that what we have in Genesis is a description of the origin of all humankind. Now, this is not to say that the account should be taken literally; maybe Genesis 2 is a mythological narrative. But even if it is, it is a myth of human origins, not a story about the creation of one human being out of many others who were about at that time.

APPENDIX 5

JOHN HILBER'S RESPONSE

During the summer of 2018, I organized a workshop, the Science of Adam, at the American Scientific Affiliation conference. There were several panelists in attendance. John Hilber, a scholar of Old Testament studies, offered these comments, explaining why the genealogical Adam and Eve was important to scholars at the Dabar Conference.



AS JEFF NOTED IN MY INTRODUCTION, I had the pleasure of spending a sabbatical year at Trinity Evangelical Divinity School's Henry Center as a research fellow on the Creation Project. Josh Swamidass asked me to share a bit about this, not as an advertisement but because it offers an example of the sort of collaborative work that is happening between conservative theologians and Christians working in mainstream science.

A few years ago, the Henry Center received a substantial grant from the Templeton Religion Trust to foster dialogue about the course of evangelical theology in an age of science. The first year of the project tackled the topic of reading Genesis (of which I was a part); the second year addressed theology more broadly, and the upcoming year will focus on theological anthropology. There are a few different tracks to this project that have brought together biblical scholars, theologians, historians, philosophers, pastors, and scientists. Last June, the Creation Project's Dabar Conference was dedicated to theological anthropology and was particularly relevant to the topic of the workshop today, since Josh Swamidass presented his work related to universal genealogical ancestors.

Everyone in that context was aware of current discussions in population genetics; and it might surprise you that at Dabar many of us were operating with the assumption that the human race, genetically speaking, can be traced to no fewer than some thousands of individuals. Indeed, many conservative theologians have been assuming evolution by common descent for decades, excluding any bottleneck. At the same time, these scholars have not been satisfied with relegating the biblical Adam to a figurative or literary character. The reasons are both exegetical and theological. Exegetically, the assumption on the part of New Testament writers that Adam was an individual in the ancient past seems explicated in the informative intention of Scripture. So the veracity of Scripture is a concern. Theologically, it is difficult to conceive how excluding an "event" for the origin of sin can satisfy the metanarrative of the Bible or can avoid assigning the fault to God who designed a mechanism that produced sin. Such an "event" is connected in Scripture (perhaps inseparably) with the existence of a human pair.

The research regarding universal genealogical ancestors was new to us. It is significant not because it solves all the problems but because it leaves open more possibilities that were not really in the mix with models people have been working with for some time. One model that many favor in order to retain the possibility of a genetic bottleneck involves a very ancient Adam and Eve (ca. 500,000 years BP). But this is very difficult to square with the biblical account,

which places our ancient ancestors in a Neolithic context. The notion of universal genealogical ancestors opens up the possibility of a link to Neolithic Adam and Eve, and it can contribute to an explanation for the spread of the consequences of Adam's sin.

A few more general comments are in order. For current theological discussions, important topics that I think need ongoing conversation include the necessity and nature of concordism, the notion of divine accommodation in Scripture, what the image of God entails, the nature of divine action, and theological problems that remain for any of our models.

Regarding concordism, many work with a definition that is too restrictive, considering only scientific concord. But this is far too narrow. For example, Alvin Plantinga (*Where the Conflict Really Lies*) correctly uses the term *concord* with respect to philosophical worldviews. More relevant to consideration of Adam and Eve is historical concord. Many of us consider that Genesis 2 has historical referentiality, and the science is relevant only to the extent that it addresses historical questions. This is identical to methodological use of archaeology in Old Testament interpretation. These distinctions are important to maintain, lest we jettison a useful term, *concordism*, for the wrong reason: because it has been abused by some in efforts to integrate science and the Bible.

The notion of divine accommodation is also too loosely applied without the necessary linguistic rigor. Linguistically, we need to differentiate between human assumptions that are only implicit in the cognitive environment of the text and those assumptions that are actually implicated in the informative intention of the passage. This distinction has not been properly articulated or maintained.

A correct understanding of the image of God needs to be brought into discussion. We cannot possibly have meaningful discourse about co-Adamites without clarifying the meaning of "image bearing," and unfortunately, many theologians and scientists are working with antiquated definitions of God's image. We have created unnecessary problems for ourselves.

In spite of the fact that the nature of divine action was carefully nuanced already in the Middle Ages, there is a lot of sloppy thinking about this today. This includes opponents of evolution and advocates alike. We have to do better than accuse evolutionary creationists of "deism" or exclude divine action from the evolutionary process because of a commitment to methodological naturalism.

Finally, theological problems remain for everyone in this conversation. When you hold your dead infant in your arms, any suggestion that this is the result of "natural processes" is both theologically and existentially problematic, to say the least. Yet, advocating a model with a representative, the genealogical Adam and Eve is not without difficulty either.

The problem of human origins is one of the "big questions." It will take time. We are all trying to be faithful to our Lord, whether scientist or theologian. What is needed is patience, honesty, humility, and the building of trust in our interdisciplinary conversation.