

Luke Jeffrey Janssen

## "Fallen" and "Broken" Reinterpreted in the Light of Evolution Theory

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The church has long discussed the nature of the human-divine relationship. A key point of contention has been what it might mean to say that humans are "fallen" or "broken" creatures, heirs of original sin. As science brought clarity and a new model to church leaders disputing the relationship between Earth and heaven (Copernicus, Galileo, and the heliocentric theory), might biological evolution and other naturalistic processes provide a new understanding of humans as "fallen" or "broken"?

Doo often science and theology have been treated as being in conflict.¹ Many other people feel that they address completely distinct questions and use entirely different language and presuppositions. Both sides too often culture a hostile attitude to the other. But do we need to see things as a science-versus-faith debate? Can it not be a science-and-faith dialogue?

Many scholars are ardent Christians who use both science and theology to shape their worldview. Even certain prominent non-Christian scientists find value in both disciplines when addressing some of life's hardest questions. Stephen Jay Gould, for example, suggested that religion and science occupy "nonoverlapping magisteria" which

bump right up against each other, interdigitating in wondrously complex ways along their joint border. Many of our deepest questions call upon aspects of both for different parts of a full answer.<sup>2</sup>

Likewise, Einstein saw religion and science as occupying two opposite poles of a spectrum, but nonetheless also said,

**Luke J. Janssen** (PhD, McMaster University) is a full professor doing basic cellular research in lung disease at McMaster University. He is the author of both Reaching into Plato's Cave and Standing on the Shoulders of Giants, and hosts a Faith and Science blog at https://lukejjanssen.wordpress.com.

"Science without religion is lame; religion without science is blind."<sup>3</sup>

The astrophysicist Robert Jastrow wrote:

At this moment it seems as though science will never be able to raise the curtain on the mystery of creation. For the scientist who has lived by his faith in the power of reason, the story ends like a bad dream. He has scaled the mountains of ignorance; he is about to conquer the highest peak; as he pulls himself over the final rock, he is greeted by a band of theologians who have been sitting there for centuries.<sup>4</sup>

A key tenet in many strands of Christian theology holds that humans are "fallen creatures" and "broken image-bearers"; we have become separated from God. Here, I will explore how the modern theory of biological evolution might bring an insightful perspective to those ideas.

# Were Humans Ever Perfect to Begin With?

The terms "fallen" and "broken" derive from a reading of the third chapter of Genesis. That event is said to have fundamentally changed humans—triggering some form of death within us (Rom. 5:12)—and unleashed a series of curses on all of nature (Gen. 3:14–19). Even "Old Earth" Christians who are able to embrace a much longer timeline

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for creation (theistic evolutionists or evolutionary creationists), with various forms and degrees of evolution over millions of years, will still frequently refer to our "fallen nature."

"Fallen" suggests that humans were once perfect or nearly so, and suddenly became much less than that. Something cannot be "fallen" if it was not first at a higher level; it cannot be "broken" unless it was once more whole or perfect. That implication may be consciously asserted and vigorously defended, or may be entirely subconscious, but it is still there nonetheless. And yet the facts staring us in the face inform us that humans were never perfect to begin with: an abundance of data documents a very protracted and gradual upward trajectory of evolution from very simple life forms eventually to a whole family of hominids, from which the human line became unique among our extant hominid cousins (chimpanzees; gorillas; orangutans) and extinct hominin cousins (Neanderthals; Denisovans; Australopithecus).5

It goes without saying that we were never perfect physically. Through comparative biology and genetics, we are able to trace many aspects of our biology and physiology which are improvements on previous designs, and yet, in some cases, are still far from perfect. Notwithstanding the Psalmist's claim that we are fearfully and wonderfully made (Ps. 139:14), certain aspects of our design are arguably flawed. Some interpret certain of these design flaws as corruptions which occurred following the Cosmic Fall: products of a "broken" design. These include proviral insertions, pseudogenes (such as olfactory receptors) and disrupted genes (L-gulono-γ-lactone oxidase for making vitamin C), or uncontrolled cell growth leading to cancer.<sup>6</sup>

Other design flaws, however, are much more difficult to attribute to the Fall event, such as the convergence of the trachea and the esophagus. That design leads to increased morbidity for some people (for example, those with diseases which rob them of adequate control over their skeletal muscle forcing them to always struggle against accumulation of saliva in their airways, or those who have stomach acid spilling over into their airways producing various respiratory complications), and horrible mortality for others (those who drown at the beach, or choke on a piece of food lodged in their airway). That design cannot be easily explained by some kind of post-Fall modi-

fication, since we find it in every kind of animal right down to simple worms, and can explain it by simple coaptation: primitive animals, many hundreds of millions of years ago, becoming sufficiently large and complex as to require a tubular system for bringing oxygen into the deeper parts of their bodies, modified an already-existing tubular system for ingesting foods and liquids, to that purpose. A similar argument can be made about the life-threatening manner in which babies are born, a process which could have been accomplished in many other ways than passage through the birth canal or inlet of the mother's pelvis, but which evolution solved by again coapting other existing structures.

It is also evident that we were never perfect intellectually. We have abundant evidence within archaeological artefacts of the development of human technology: stone tools, shelters, agriculture, jewelry, medicine. Linguistics can shed light on the gradual development of speech and writing. 10

We also have evidence that we were never perfect in a theological sense but, rather, evolved gradually in that respect as well. Humans, and possibly also Neanderthals, performed ritual burials as far back as one hundred thousand years ago in a manner that suggested a belief in an afterlife:<sup>11</sup> certain bodies either were carefully laid out with arms crossed, or were bound up in a fetal position, rather than being discarded haphazardly. They were buried together with tools, jewelry, food items, or, in some cases, with other individuals who would appear to be their loved ones.

In the more recent past, we find hand-crafted representations of what appear to be deities - Venus-like figurines, fertility gods, sky gods, gods of warsome of which have been dated as far back as sixty thousand years.12 In Göbekli Tepe in Turkey, we have temple ruins which have been dated to twelve thousand years ago,13 and other religious/temple structures nearly that old from ancient Babylon and Egypt as well as Stonehenge in Great Britain.<sup>14</sup> It is only after humans had developed these religious items and religious structures that we find the first evidence of writing and languages, and only after the appearance of polytheistic literature from the Akkadians, Sumerians, Egyptians, and others in the Ancient Near East that we see the first examples of the monotheistic literature of Judaism and Zoroastrianism, which, in turn, are followed quickly by

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a dizzying array of Christian and Islamic theologies. During the same period of human history, we see the development of various mystic religious lines of thinking in the Far East—Confucianism, Taoism, Shintoism, Hinduism, and Buddhism—as well as countless versions of tribal and regional religions throughout the world wherever humans settled.

Finally, we were never morally perfect. We descended down a long line of ancestors whose core moral value was put-number-one-first. The recent discovery of a 430,000-year-old cranium bearing markings of localized blunt force trauma indicates that "lethal interpersonal violence is an ancient human behavior." At what point along this millennia-long continuum could it be said that humans as a species were given a moral law and became morally culpable? Or did we gradually accumulate a moral code? We will return to these questions later in this article.

Given all this evidence that we were never perfect to begin with, how can we continue to hold to any tenet which is based upon the idea of humans as once perfect and now "fallen" or "broken" from that perfection? Below, I will argue that humans have not fallen from perfection, but from potential; not from the ideal, but from what could have been.<sup>16</sup>

## Scientific Attempts to Reinterpret the Fall

Humans were never perfect anatomically, intellectually, theologically, or morally. On the contrary, we have been on an ascending trajectory in *all* these respects. The only possible sense in which we can claim that humans might once have been perfect would be spiritually, although here it might be better to use the word "alive" rather than "perfect." When and how could that important event have happened within our evolutionary history?

A common Christian answer has been that this occurred when God breathed life into his image-bearer six thousand years ago. As scientific evidence began to mount up against this timeline, some simply extended it to fifty or even one hundred thousand years while still maintaining that a primal pair were specially created and had not descended from a predecessor species.<sup>17</sup> That point in our past history may have been chosen, in part, to accommodate both the limitations of carbon-based radiometric dating

(which becomes unreliable, and therefore is not used beyond that length of time) and the fact that humans seem to have experienced a form of "cultural big bang" at that time,<sup>18</sup> which some mistakenly equate with humans being granted the *imago Dei*. However, this does not account for the abundant scientific data indicating humans as a species never numbered less than several thousand<sup>19</sup> and are highly genetically related to the chimps, gorillas, orangutans, Neanderthals, and Denisovans.<sup>20</sup>

Others, therefore, will accept the standard evolutionary model, but will posit that God chose, approximately forty-five thousand years ago from those hominids, a primal pair whom he then "refurbished," endowing them with his image and a soul and thereby creating the first two true humans.<sup>21</sup> However, this is still quite problematic.

First, this accommodation is not founded on *any* scientific evidence whatsoever but, rather, on a concordist interpretation of the second chapter of Genesis (concordism is the view that biblical texts will reveal or contain certain elements of modern science<sup>22</sup>). Another reason some insist upon a primal pair is to preserve the theological concept of the federal headship of Adam: that is, that all humans inherit death and a sinful nature by virtue of having descended from an "Adam and Eve" who rebelled in some way against God. Once again, however, the genetic data strongly disconfirm the idea that all humans descended from a primal pair, and death has been with us for billions of years.

Second, this insistence on a "refurbished" primal pair raises considerable theological, missiological, and ethical problems, given that they would be surrounded by large numbers of their peers who would be quite able to interbreed and co-evolve with their non-"refurbished" cousins. This raises a particularly troubling conundrum if sin and spiritual death are inherited down familial lines:

Missionary strategists would be put in the very uncomfortable position of identifying those groups of anatomically modern "people" who are not descendants of Adam and Eve and thus not really human ... As non-image-bearers, such "peoples" are therefore not sinners and are ineligible for salvation. They do not need it. Missionary activity among such groups is unnecessary. We do not evangelize non-humans.<sup>23</sup>

Davis Young also rightly asks what might be the status of the descendants of the half-Adamites if interbreeding occurred between the chosen and not-chosen tribes. We already know humans interbred with Neanderthals and Denisovans.24 We even have a specimen from a human male who lived forty thousand years ago and whose ancestors included a Neanderthal only four to six generations prior to his own birth.<sup>25</sup> Or what of those who were only one-quarter Adamites, or only one-eighth human? And so on? Would these be only partially spiritually alive? Would they be only partially culpable in Adam's sin of rebellion? Admittedly, all of these questions are valid only if our fallenness is inherited in some way akin to genetic inheritance. That quasigenetic transmission of sin and guilt is exactly what Augustine and Calvin argued for, and some of their modern-day followers still maintain that concept without explaining precisely how that kind of inheritance might work; it is just assumed.

On the other hand, can one set aside the concept of a literal primal pair, and instead allegorize the Fall narrative even further to refer to all humans existing throughout all of time? At what point in human history do we draw a line between human and not human? There is no distinct point at which one can go back and define one generation as distinctly human and the previous generation as distinctly not human, so there would be a seemingly infinite regress as the line of inclusion blurred to also encompass Neanderthals, Denisovans, *Australopithecus*, and other hominins.

Third, when and where does one draw the line at which humans were collectively given a divine law, with a clear choice to obey or disobey-and collectively failed? Some might try to find the answer for this in natural or general revelation (Rom. 2:14-15). However, the latter can be quite imprecise. A beautiful starry night or an intricate ecosystem can certainly inspire awe and a strong sense that "there is a God." But they do not project the clear divine command that there is only one God, or that it would be wrong to envision and worship multiple gods. Likewise, thoughtful introspection of the influence our actions have on others and listening to our conscience will point us in the right direction(s) on certain decisions but not necessarily toward discrete commandments such as "do not bear false witness" (sometimes it seems that public peace is better kept by distorting the truth or even by blatant lying) or "keep the Sabbath holy," let alone the hundreds of other laws clearly given within the Pentateuch. Furthermore—to counter the Pauline passage quoted above—many "Gentile" societies have also condoned practices which are forbidden by the Law but which seemed natural and appropriate to them, such as infanticide, human sacrifice, polygamy, and revenge killing. So, can one say that natural revelation provides a clear commandment(s) that all humans have broken, and thereby justify the use of the terms "fallen" or "broken"?

### Does the Bible Teach That Adam Was Perfect before the Fall?

While Genesis does teach that God's creation was "very good" (Gen. 1:31)—"tov me'od" in Hebrew<sup>26</sup>—this does not mean that it was all as good as it possibly could have been. For those who take tov me'od to mean perfect, beautiful, and blissful, Genesis also describes a garden which featured a prowling deceptive serpent determined to pit humans in rebellion against God, and humans who were capable of rebelling. For those who take tov me'od to mean "working the way it was created to be or to function," the Garden had an Adam who grew to be lonely and possibly jealous of the other animals since they had a partner but he did not: after deeming everything tov me'od, God later says it is "not tov" that "the adam" should be alone.

Also, Hebrew scripture does not emphasize the story of the Fall as the source of sin within the human race.<sup>27</sup> Other than in the first five chapters of Genesis, the Old Testament refers to "Adam" as a person only once (and does so merely as the opening line in a long genealogy; 1 Chron. 1:1), and as a geographical location two other times (Josh. 3:16; Hos. 6:7),28 while Eve and the Fall in the Garden incident are never mentioned again (although some Apocryphal literature refers to them<sup>29</sup>). Jesus never mentioned Adam or Eve or the Fall as the root of the biggest problem facing humans. Jesus did indeed allude to the newly created humankind (Matt. 19:4-6), but the passages he quoted refer to humankind in general, not to two individuals: he referred to "an adam" leaving his father and mother and being united to his wife, but "Adam" did not have a mother, nor leave his father when he was joined to Eve. Jesus was instead speaking generally, and was addressing a sociological

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matter—divorce and marriage. Those who apply this passage to Adamic genealogy, ancient human history, or original sin take his words out of context. Paul is the only biblical author who refers to the Fallin-the-Garden story of Genesis 3.<sup>30</sup>

This scriptural silence would be a tremendous oversight if the biblical authors saw Adam and Eve as the source of "original sin" or a "fallen nature." According to the *Universal Jewish Encyclopedia*:

Judaism rejects this idea of inherited depravity, and the idea of a "Fall" has never become current in Jewish theology ... Judaism has no doctrine of original sin in the Christian sense ... *The Apocrypha* and *Pseudepigrapha* are the first to cite the Fall of Adam and Eve as the cause of death and other human evils.<sup>31</sup>

This is not to say that the ancient Hebrews did not see humans as having any kind of sin at all. Nearly every Old Testament book refers in some way to sin or sinfulness, and many refer to sacrifices and practices which were prescribed to address those problems. But none link those prescriptions back to Adam or Eve or the Fall in the Garden. Some of the Psalms (Pss. 78; 95:7–11; 106:6–43) and the prophets (Neh. 9:7–37; Isa. 63:7–15; Ezek. 20:5–44) refer to the nation of Israel testing God after leaving Egypt, but none refer to the Garden story. They certainly saw human righteousness paling in comparison to that of YHWH, but they did not see humans as having once been perfect. Instead, Judaism traces sin back to Israel's rebellion at Mount Sinai.<sup>32</sup>

## The Moral Influence Theory of Atonement

When astronomers led by Galileo presented to the church scientific evidence that contradicted their model of the universe, a model that was supported by their interpretation of numerous and diverse passages of scripture and by two millennia of church tradition,<sup>33</sup> Cardinal Robert Bellarmine acknowledged that it was necessary to revisit that aspect of theology and "proceed with great care in explaining the scriptures that appear contrary, and say rather that we do not understand them than that what is demonstrated is false."<sup>34</sup> Perhaps we can learn from this precedent and now apply it to another theological concept which is supported by numerous scriptural passages and two millennia of church tradition.

Given that neither scientific evidence nor ancient Hebrew theology support the view that humans are "fallen" or "broken" in the traditional theological sense of those terms, and given the theological variety of atonement models, perhaps it is time to emphasize a model that is compatible with the wider body of evidence now available to us. The moral influence theory is not a new idea: it is as old as Christianity itself. It was universally taught during the first three centuries,<sup>35</sup> and was the primary view of many influential theologians from the Patristic period, including Augustine.<sup>36</sup>

In essence, the moral influence theory teaches that God desires a positive moral change in the hearts of individuals, and he wants to transform human societies to become more loving. God nurtured this change in part by providing the Old Testament laws and the teachings of the prophets, and ultimately modelled it in the life example and teachings of Jesus Christ himself. Jesus, then, becomes the ultimate example to us: "the Way" to the Father (John 14:6).

This theological view is consistent with the arc of human history as seen through the lens of biological evolution. Consider the long-held view of a Fall, on the one hand, juxtaposed, on the other hand, against a modern view which combines moral influence theory (a very old idea) and evolution theory (a new idea). These two distinct views begin from the same starting point. Both agree that (1) God exists and embodies pure love, and for this reason desires relationship; (2) God created all things, including humans with whom he wants relationship; and (3) humans are currently imperfect beings. Despite these three general propositions in common, the two alternatives subsequently diverge radically.

The Fall viewpoint adds the proposition that humans have "fallen" from a more perfect state, and are simply unable to attain God's high expectations of perfection because of our inherent human faults and limitations. Some go on to emphasize that humans are therefore destined for eternal destruction—a few even add eternal conscious torment—but for God's compassion in the form of the saving act of Jesus Christ. God makes provision for our salvation, but it is up to us to accept his gift of grace (a few even insist that it needs to be a *verbal* acknowledgment). And yet God cloaks himself in nearly impenetrable obscurity, and we are incapable of relating to him directly, such that many feel compelled to conclude that there is

no God to begin with. Some who nonetheless choose to persist in theistic belief still struggle against their own human faults and limitations and continually experience failure, guilt, doubt, and a sense of separation; others give in to the seeming futility of resisting. All of these statements paint a frustrating scenario in which humans are doomed to fail.

In contrast, combining moral influence theory with biological evolution theory disputes that we were ever perfect to begin with, or that God condemns us for our innate imperfection. Instead, it takes for granted that we evolved from very simple and imperfect forms, and that God saw his own image beginning to form and beckoned us closer to his perfection. God created all things using natural mechanisms, including big bang cosmology, Newtonian mechanics, quantum physics, relativity, abiogenesis, and biological evolution. These processes are God ordained, and pregnant with the possibility of producing his image out of inanimate matter.

Our evolution was driven by instincts which were absolutely necessary to help us to survive the capricious forces of natural selection. Those forces were designed to push life forms from one level of complexity to the next. All life forms *needed* to be selfish. They (we) had to kill when threatened, had to hoard and steal resources (food, shelter, mates), had to view competitors in their ecological niche as "the enemy," and had to spread genes as far and wide as possible and as frequently as possible. Granted, conflict was not the only key to evolutionary success. In many cases, cooperation became a superior strategy. This is the idea behind the transition from prokaryotic life to eukaryotic life, in which certain cellular forms of life became incorporated into other forms of cellular life and ultimately produced organelles and a much more evolutionarily successful lifeform. It also explains social cooperation in insects (ants and bees), or between different species (certain fish and birds which clean parasites from other species, or consider also the powerful synergistic relationship between humans and dogs),37 as well as altruism, empathy, and compassion.38

Life forms continued to become more complex biologically, intellectually, and behaviorally, eventually producing humans with cognitive abilities and instincts which drew us toward a Great Being: minds which always searched to find an Agent or an explanation behind every observation, and which possessed a theory of mind; the ability to ponder with abstract thought and to experience empathy and love; the use of rituals to solve problems; and the belief in an afterlife and a *sensus divinitatus*.<sup>39</sup>

These tools and abilities drew us toward the Divine. We can certainly consider how our ancestors gradually became aware of God, even if we cannot identify a punctiliar event in which we actually met God. As a species, we then embarked on a quest, stretched out over hundreds of thousands of years, in a driven search for God. We responded to an inner voice and searched to the best of our ability to understand the divine, and to make physical representations (statues and figurines) and structures (temples) dedicated to the Great Being. In the process, we began to perceive (and God revealed) his ideal: to stop being driven by the selfishness which was hammered into our psyches through millions of years of evolution, and to now culture a new driving force within ourselves: selflessness. He called for a complete course redirection - a "repentance" - to instead love, give, share, heal, and help. From this perspective, Romans 8:19-22 takes on a whole new meaning:

For the creation waits in eager expectation for the children of God to be revealed. For the creation was subjected to frustration, not by its own choice, but by the will of the one who subjected it, in hope that the creation itself will be liberated from its bondage to decay and brought into the freedom and glory of the children of God. We know that the whole creation has been groaning as in the pains of childbirth right up to the present time.

That is, God created a primordial "cosmic egg" which exploded into a constantly evolving entity, exhibiting ever-increasing complexity despite the disruptive forces of entropy which short-circuited many changes (creation being "subject to frustration, not by its own choice, but by the will of the one who subjected it"). In this way, entropy constantly reshuffled the cards, removed dead ends, and cleared the slate for newer and greater increases in complexity, acting like a "Brownian ratchet." God intended/ desired that ever-evolving creation to eventually produce beings which bear his image and with whom he would enjoy relationship. That is, creation would be "liberated from its bondage to decay (entropy) and brought into the freedom and glory of the children of God." Even creation itself seems to anticipate that end-goal: it "waits in eager expectation for the

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children of God to be revealed." It was created for this purpose—tov me'od—a productive effort with which it has been engaged for millennia, "groaning as in the pains of childbirth right up to the present time."

It is at this point that we can introduce the Hebrew word *hata* and the Greek word *hamartia*, both of which are rendered by English translations of the Bible as "sin": both of those original biblical terms are metaphors borrowed from archery which literally mean "to miss the mark." Our human inheritance is not so much Adam's guilt, the Augustinian view, but rather the inability to fully achieve God's perfection, although God cherishes all our efforts to approach it. We were on an ever upward trajectory toward manifesting the image of God, only to "fall short" of our *full* potential and God's ideal for us.

Certainly we are inherently selfish, and we find it easy to ignore the less fortunate: that selfishness and indifference comes from millennia of simply competing and trying to survive. Likewise, our instinctive fear of "the other" produces racism, prejudice, xenophobia, and various forms of tribalism which are tearing apart our societies. A powerful inner procreative drive constantly seeds urges around which lustful thoughts crystallize. Humans do fall short of perfection in many ways. But according to the theory of evolution, we were never perfect to begin with-nor even nearly so. Nor did we originally have a perfect relationship with God from which we were suddenly separated and to which we need to be reconciled. Those faults, limitations, and undesirable characteristics are products of the mechanisms which were crucial to our development as a species, and which were put in place to bring us to this point in history. In that sense, those primitive characteristics and instincts were tov me'od: functioning as they were intended.

But God also showed us, through Jesus Christ, that it is possible to be free from the selfish driving force that we inherited from our evolutionary heritage. Jesus modelled for us a new driving force: perfect selflessness. Christ eschewed personal material wealth, the accumulation of personal property, and even personal security and comfort—even to the point of martyrdom. And we are called to do the same. He taught us to love supremely, to give, to heal, and to serve. When asked to define God's greatest commandment, Jesus answered simply:

"Love the Lord your God with all your heart and with all your soul and with all your mind." This is the first and greatest commandment. And the second is like it: "Love your neighbor as yourself." All the Law and the Prophets hang on these two commandments. (Matt. 22:36–40)

Critics may challenge the idea that humans have been on an upward trajectory. They see the past century as the most violent ever, one in which hundreds of millions of people have been killed in violent conflict. Those numbers are not in dispute, but should be considered in the context of our population growth over the past few centuries: when the population size of the countries going to war increases, the numbers of fatalities will inevitably increase correspondingly. Also, our violent urges may not have changed over millions of years, but our ever-increasing technology enables us to do violence on bigger scales. More apropos, though, the critics should also consider the humanitarian efforts which are commonplace today - disaster-relief efforts, hospitals, education, peacekeeping missions - and which were rare just a few thousand years ago, and were arguably absent one hundred thousand years ago. Those recent humanitarian efforts are manifestations of the moral influence theory.

## Recasting "the Fall" and "Fallenness"

Given the points above, one could challenge both the idea that humans were ever perfect to begin with, and the idea that we inherit the guilt of a rebellious act of a primal pair. And when one revises that latter claim by stating that we are all guilty of personal acts of rebellion against God, one might point to the fact that humans have actually, for millennia, been on a cosmic search to *find* the divine and therefore have not actually rebelled — or have we?

God gave prehistoric humans the cognitive tools to find him, as well as evidence that pointed to him in the heavens and in nature around them (Ps. 19:1–5; Rom. 1:20).<sup>40</sup> And as they began to sense the Great Being, they responded by creating images and temples. But did they do that to nurture a relationship with the divine, or to *contain* and *control* the divine? They made a sky god in order to ask it for rain, or sunshine, or other good conditions for growing crops; they wanted power over the weather. They made a god of war in order to gain superiority over

their enemies, a fertility god to give them children, and various other gods from which they could satisfy various needs and/or ward off various evils. God had begun to open their eyes and minds to a wonderful new relationship, and they turned it into a resource. Rather than humbly submit to the authority of the Great Being(s), they subverted the revelation and wrestled for control.

This is what we see metaphorically in Genesis: Adam and Eve were tempted to "be like God" and to gain something (wisdom) (Gen. 3:5–6). They were made in his image, to reflect him; instead, they chose to be in control.

The metaphor is repeated in the story of the Tower of Babel (Gen. 11:1–9). The people in the plain of Shinar endeavored to build "a tower that reaches to the heavens." They did this, not to meet with the divine, but to gain control over the chaotic dispersing forces (to "not be scattered over the face of the whole earth"), to create their own image ("make a name for ourselves"), and to gain something (prestige, honor, identity, national unity).

And we see it again in the Mount Sinai story in which the ancient Hebrews trace the origin of their *corporate* sinfulness. And what had they done? Only days after YHWH had led them out of Egypt, they made another god: the Golden Calf. In their minds, Moses and YHWH were taking too long and it was time to take control: Egypt was starting to look much better than Mount Sinai and the desert.

Even today, we, too, often turn God into a cosmic vending machine. Too many of our prayers ask God to change our circumstances ("God, please give us ..." or "God, please help me to ..."). In too many ways we try to hold God hostage to our own interpretation of his promises. When experiencing some kind of burden, we ask God to remove it rather than to give us stronger backs. When praying for someone in need, we ask *God* to do something rather than ask what *we* ourselves might do in his name and thereby manifest his image.

Certainly, as a species and as individuals, we have failed and continue to fail. We are well on the way to destroying each other and creation. And for that reason, we still need a Savior. Jesus represents a break in that pattern of human history: he was often tempted to take control, but chose submission and obedience instead (Luke 4:1–12; Matt. 26:39–42, 53; John 5:19; Heb. 5:8).

Our inheritance from Adam may not be so much the guilt of his "original sin"; rather, it may be the innate human tendency to be defiantly independent, selfish, and in control of our own circumstances and destiny. Our species has for many millennia been on an upward trajectory. However, we all continually fall short individually: sometimes by means of intentionally committed sin, but much more often through acts of omission—conscious or unconscious. Perhaps sin is not so much inherited or transmitted as it is echoed: we all resonate with Adam.

# Science Coerces a Reconsideration of Fall Theology

For two millennia, the Western church has taught that humans are "fallen" or "broken" creatures, with an unhealthy emphasis placed upon a primal pair. Many found the focus upon sinfulness too oppressive, and the harsh picture of God painted by certain Christian theologies too difficult, such that they discard their faith. Meanwhile, the church is increasingly being confronted with evidence that humans evolved from a long line of hominid ancestors. Some may feel that the church today does not see tension between faith and science. However, as Roy Clouser wrote previously in this journal: "If these clergy and scholars have good reasons for thinking there is no such conflict, they have done an extremely poor job of communicating those reasons to the lay members of their churches."41

The data suggest that we have never been perfect by any definition: we never became "fallen" or "broken." Instead, they suggest that we have been on an upward trajectory, gradually evolving to a point from which we could embark on a spiritual search for God. As we pursued God, we perceived his ideals for perfection. When our thinking was still quite tribal, he showed us his ideal: a complete reversal of the fundamental driving force on which we base our thoughts and actions—from selfishness to selflessness. He modelled this ideal perfectly within the teachings and life example of Jesus Christ, who invited us to accept an internal change (Matt. 15:18–20, 23:25–26; Mark 7:20–23; Luke 11:39–41; Rom. 12:2): one aimed at our base instincts.

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The scientific data now at hand pertaining to human evolution conflict with any theological worldview that is dependent upon the following:

- (1) a "young earth," or a timeline of less than ten thousand years. This will be a minor point for some readers of this journal, but others do indeed still hold dogmatically to such a viewpoint;
- (2) there being a primal pair. Again, many still attribute genetically transmissible qualities to sin and guilt without thinking through how that might work—or not work; and/or
- (3) the human species receiving a discrete command regarding what God expects, and all humans having broken that command.

Instead, we should account for hard evidence, such as

- (1) *Homo sapiens* appearing a couple hundred thousand years ago;
- (2) humans being nearly genetically identical to other hominids who can be tied together on an evolutionary tree of life extending back millions of years;
- (3) interbreeding between humans and other species (Neanderthals and Denisovans);
- (4) the evolution of religious thinking and practices long predating the biblical texts; and
- (5) a gradual evolution of morality and awareness of God.

Reframing Christian thinking may be difficult for some, even if they are convinced by the scientific data. In addition to centuries of church tradition, Paul's writings will likely be a barrier.<sup>42</sup> However, scripture itself gives abundant evidence for an evolution of Christian thinking. When Jesus began his ministry, he clearly announced that he was "sent only to the lost sheep of Israel" (Matt. 15:24), and he imposed the same limitation on his disciples (Matt. 10:6). So it is quite understandable that the early church might have acted as if the Gospel message were meant only for Jews. They continued to not understand (or not accept?) the Great Commission to preach the Gospel to all nations until Peter's vision of the blanket lowered down from heaven and the Council at Jerusalem, at which point they radically changed their theological worldview.

The early church continued to hold other firm convictions, some of them Pauline in origin or emphasis,

which they began to relinquish by the end of the first century and which have long since been markedly revised. These include the Parousia and Eschaton occurring within their lifetime, prohibitions against meat offered to idols, stipulations about hair length that were thought to be blatantly evident within "the very nature of things," and the ecclesial role of women. Christianity continued to evolve beyond biblically recorded history. Paul's ideas were further developed during the Patristic era by Roman and Greek theologians who were thoroughly educated in Platonism, Stoicism, and Neoplatonism. 43 Their ideas were, in turn, reformulated during the Reformation by others having yet other motivations and worldviews. Clearly Christianity itself has been evolving, notwithstanding a central theological core which is unchanging and eternal.

Now there is a new impetus driving further change to our theology. None of the foregoing Christian thinkers had any information whatsoever about the evolution of humans. *But we do*, and therefore now we have the responsibility of finding a way to reconcile this knowledge with our theology. So, when Paul writes about sin and death entering the world through one man and of the trespass of that one man (Romans 5), or about a "first Adam" (1 Corinthians 15), or implies that Adam is guilty of a greater sin than "the woman" because she was only deceived but he willingly rebelled (1 Tim. 2:14), we have cause for reinterpretation of his teachings.

Believing scholars are increasingly taking up that challenge. The diversity and unanimity of their voices is important. Paradigm shifts are notoriously difficult to navigate, both within secular circles (the particle/wave nature of light, Newtonian versus quantum mechanics, epigenetics and biological evolution) and within theological circles (the birth of Christianity, the Reformation), as well as within the intersection between these two (heliocentric theory, human evolution). Many perspectives are needed to guide us safely through the rockier portions of the journey. This article is certainly not the first to appear within this journal addressing human evolution from a Christian perspective; the past two years alone have seen contributions within this journal from Lamoureux,44 Clouser,45 Wilcox,46 Venema,47 van den Toren,48 Murphy,49 Sollereder,50 Berry,51 and Davidson,52 and there have been others in the more distant past.53

These contributions generally agree in certain respects: an emphasis on the starkly different worldview(s) of the human authors of scripture as compared to our own; caution regarding an overly literal reading of scripture and/or concordism; a call toward reconciling perceived tensions between science and faith; and a reassurance that accepting biological evolution does not require rejecting faith or the Bible. But each also focuses particularly upon different aspects and finer details of this critical and difficult discussion. Some weighed in much more heavily upon the biological mechanisms per se,54 while others explored theological issues such as the imago Dei,55 natural evil,56 moral evil,57 original sin,58 suffering and redemption,<sup>59</sup> the historicity of Adam,<sup>60</sup> and "the Nephilim." This article focuses specifically on the terms "fallen" and "broken," both of which are used ubiquitously in Christian discussions at both the lay level and within the academy.

In addition to such points of general agreement and other finer points of unique but complementary perspective, this multiplicity of papers also offers up striking differences. For example, Lamoureux sees Romans 8:19-22 as describing the Cosmic Fall and the subsequent appearance of natural evil (a downward trajectory and cataclysmic event), while I suggest that it can also refer to the process of human evolution itself prior to any putative Cosmic Fall (an upward trajectory and gradual process); Berry presents his own interpretation of this Pauline passage while quoting from several other theologians speaking specifically on the same passage, each with their own unique nuances.62 This separation of views can be positive: it creates a safe space which is conducive to discussion and contemplation, and illustrates how a given passage can be understood in radically different ways. Lamoureux provides an amusing pictorial representation of this in his 2015 paper: Is it a rabbit or a duck? - or both!63 This is a characteristic of rabbinical Judaism, and was a technique employed by Jesus himself: "You have heard it said ... but now I say ..." It was also used by his apostles.

The many strands of agreement strengthen our discussion of human evolution from a Christian perspective, while the nuances/differences give it depth. This is essential whenever we explore new theological territory as scholars have been doing ever since the theory of evolution came up against Fall theology.

#### Conclusion

Humans are indeed "fallen," but not in the common sense of that theological term. We have not fallen from perfection, but from potential; not from the ideal, but from what could have been. We are called toward wholeness in right relationship with God and one another, and have been given the perfect example to follow. The scientific idea of biological evolution helps us to better see what God is doing.

#### Acknowledgments

The author wishes to thank Steven M. Studebaker (McMaster Divinity College, Hamilton, ON) and James C. Peterson (the editor-in-chief of this journal) for in-sightful comments on this manuscript.

#### Notes

<sup>1</sup>Michael Tenneson et al., "A New Survey Instrument and Its Findings for Relating Science and Theology," *Perspectives on Science and Christian Faith* 67, no. 3 (2015): 200–22, http://www.asa3.org/ASA/PSCF/2015/PSCF9-15Tenneson.pdf.

<sup>2</sup>S. J. Gould, "Nonoverlapping Magisteria," *Natural History* 106 (March 1997): 16–22; reprinted in Stephen Jay Gould, *Leonardo's Mountain of Clams and the Diet of Worms: Essays on Natural History* (New York: Harmony Books, 1998), 269–84

<sup>3</sup>A. Einstein, "Religion and Science," New York Times Magazine, November 9, 1930, 1–4; \_\_\_\_, "Religion and Science: Irreconcilable?," The Christian Register, June 1948; \_\_\_\_, letter written in German to the Jewish philosopher Eric B. Gutkind, dated January 3, 1954.

<sup>4</sup>Robert Jastrow, *God and the Astronomers* (Toronto, ON: George J. McLeod, 1992).

FJohn Reader, Missing Links: The Hunt for Earliest Man, 1st American ed. (Boston, MA: Little, Brown and Company, 1981); \_\_\_\_, Missing Links: In Search of Human Origins (New York: Oxford, 2011); H. Li and R. Durbin, "Inference of Human Population History from Individual Whole-Genome Sequences," Nature 475 (2011): 493–97, https://doi.org/10.1038/nature10231; Charles Darwin, The Descent of Man and Selection in Relation to Sex (Akron, OH: Werner, 1875).

<sup>6</sup>D. Torrents et al., "A Genome-Wide Survey of Human Pseudogenes," *Genome Research* 13 (2003): 2559–67, https://doi.org/10.1101/gr.1455503; E. S. Lander et al., "Initial Sequencing and Analysis of the Human Genome," *Nature* 409 (2001): 860–921, https://doi.org/10.1038/35057062; Luke Jeffrey Janssen, *Standing on the Shoulders of Giants: Genesis and Human Origins* (Eugene, OR: Wipf and Stock, 2016), 137–45; Dennis R. Venema and Scot McKnight, "Adam's Last Stand?," in *Adam and the Genome: Reading Scripture after Genetic Science* (Grand Rapids, MI: Brazos, 2017), 31–66.

<sup>7</sup>Janssen, Standing on the Shoulders of Giants, 166.

<sup>8</sup>M. Hoffman, B. E. Taylor, and M. B. Harris, "Evolution of Lung Breathing from a Lungless Primitive Vertebrate," *Respiratory Physiology and Neurobiology* 224 (2016): 11–16,

#### "Fallen" and "Broken" Reinterpreted in the Light of Evolution Theory

https://doi.org/10.1016/j.resp.2015.09.016; C.C.W. Hsia et al., "Evolution of Air Breathing: Oxygen Homeostasis and the Transitions from Water to Land and Sky," *Comprehensive Physiology* 3 (2013): 849–915, https://doi.org/10.1002/cphy.c120003; Jon Mallatt, "Ventilation and the Origin of Jawed Vertebrates: A New Mouth," *Zoological Journal of the Linnean Society* 117, no. 4 (1996): 329–404, https://doi.org/10.1111/j.1096-3642.1996.tb01658.x.

<sup>9</sup>C. J. Lepre et al., "An Earlier Origin for the Acheulian," *Nature* 477 (2011): 82–85, https://doi.org/10.1038/nature10372; April Nowell, *Stone Tools and the Evolution of Human Cognition* (Boulder, CO: University Press of Colorado, 2010); Juan A. Barcelo and Florencia Del Castillo, *Simulating Prehistoric and Ancient Worlds* (Cham, Switzerland: Springer, 2016).

land: Springer, 2016)

<sup>10</sup>Roger Bench and Matthew Spriggs, Archaeology and Lan-

guage (London: Routledge, 1997).

<sup>11</sup>Svante Pääbo, Neanderthal Man: In Search of Lost Genomes (New York: Basic Books, 2014); David R. Livingstone, Adam's Ancestors: Race, Religion, and the Politics of Human Origins (Baltimore, MD: Johns Hopkins University Press, 2008); A. Leroi-Gourhan, "Shanidar et ses fleurs," Paléorient 24, no. 2 (1998): 79–88, https://doi.org/10.3406/paleo 1998.4679.

<sup>12</sup>M. Raghavan et al., "Upper Palaeolithic Siberian Genome Reveals Dual Ancestry of Native Americans," *Nature* 505 (2014): 87–91, https://doi.org/10.1038/nature12736.

(2014): 87-91, https://doi.org/10.1038/nature12736.

<sup>13</sup>Charles C. Mann, "The Birth of Religion," *National Geographic* (June 2011): 39-59, http://ngm.nationalgeographic

.com/print/2011/06/gobekli-tepe/mann-text.

<sup>14</sup>K. Spence, "Ancient Egyptian Chronology and the Astronomical Orientation of Pyramids," *Nature* 408 (2000): 320–24, https://doi.org/10.1038/35042510; Michael Balter, "Early Stonehenge Pilgrims Came from Afar, with Cattle in Tow," *Science* 320, no. 5884 (2008): 1704–5, https://doi.org/10.1126/science.320.5884.1704; \_\_\_\_\_\_, "Monumental Roots," *Science* 343, no. 6166 (2014): 18–23, https://doi.org/10.1126/science.343.6166.18; Lucy Odling-Smee, "Dig Links Stonehenge to Circle of Life," *Nature* 445 (2007): 574, https://doi.org/10.1038/445574a.

<sup>15</sup>N. Sala et al., "Lethal Interpersonal Violence in the Middle Pleistocene," *PLoS One* 10, no. 5 (2015): e0126589, https://doi.org/10.1371/journal.pone.0126589; also see José Maria Gomez et al., "The Phylogenetic Roots of Human Lethal Violence," *Nature* 538 (2016): 233–37, https://doi.org/10

.1038/nature19758.

<sup>16</sup>The author sincerely thanks the editor, James C. Peterson,

for providing the pithy wording here.

<sup>17</sup>Fazale Rana and Hugh Ross, Who Was Adam? A Creation Model Approach to the Origin of Man (Colorado Springs, CO: NavPress, 2005).

<sup>18</sup>Rana and Ross, "Who Was Adam?," 271–76; a sudden appearance of art and symbolism (cave art, jewelry), tools and technology (cutting instruments, fish hooks, use of fire), religion (ritual burial), and humans now living in large, complex communities.

<sup>19</sup>Serena Tucci and Joshua M. Akey, "Population Genetics: A Map of Human Wanderlust," *Nature* 538 (2016): 179–80, https://doi.org/10.1038/nature19472; S. Mallick et al., "The Simons Genome Diversity Project: 300 Genomes from 142 Diverse Populations," *Nature* 538 (2016): 201–6, https://doi.org/10.1038/nature18964; Venema and McKnight, "Adam's Last Stand?," 43–66.

<sup>20</sup>Rebecca L. Cann, Mark Stoneking, and Allan C. Wilson, "Mitochondrial DNA and Human Evolution," Nature 325 (1987): 31–6, https://doi.org/10.1038/325031a0; Pääbo, Neanderthal Man, 252; U. Arnason, X. Xu, and A. Gullberg, "Comparison between the Complete Mitochondrial DNA Sequences of Homo and the Common Chimpanzee Based on Nonchimeric Sequences," Journal of Molecular Evolution 42, no. 2 (1996): 145–52, https://doi.org/10.1007/BF02198840; Daniel C. Harlow, "After Adam: Reading Genesis in an Age of Evolutionary Science," Perspectives on Science and Christian Faith 62, no. 3 (2010): 179–95, http://www.asa3.org/ASA/PSCF/2010/PSCF9-10Harlow.pdf; Janssen, Standing on the Shoulders of Giants, 31–36; Venema and McKnight, "Adam's Last Stand?," 43–66.

<sup>21</sup>Gavin Basil McGrath, "Soteriology: Adam and the Fall," *Perspectives on Science and Christian Faith* 49, no. 4 (1997): 252–63, http://www.asa3.org/ASA/PSCF/1997

/PSCF12-97McGrath.html.

<sup>22</sup>Tenneson et al., "New Survey Instrument," 200-222.

<sup>23</sup>Davis A. Young, "The Antiquity and the Unity of the Human Race Revisited," *Christian Scholar's Review* 24 (1995): 380–96.

<sup>24</sup>Livingstone, *Adam's Ancestors*, 210–13; Mallick et al., "The Simons Genome Diversity Project," 201–6.

<sup>25</sup>Q. Fu et al., "An Early Modern Human from Romania with a Recent Neanderthal Ancestor," *Nature* 524 (2015): 216–19, https://doi.org/10.1038/nature14558.

<sup>26</sup>All subsequent biblical citations pertaining to "tov me'od" or "tov" are taken from the Orthodox Jewish Bible.

<sup>27</sup>Harlow, "After Adam," 189.

<sup>28</sup>Roy Clouser, "Reading Genesis," *Perspectives on Science and Christian Faith* 68, no. 4 (2016): 245, http://www.asa3.org/ASA/PSCF/2016/PSCF12-16Clouser.pdf.

<sup>29</sup>Isaac Landman, ed., *The Universal Jewish Encyclopedia*, vol. 4 (New York: Universal Jewish Encyclopedia, 1941), 239; Venema and McKnight, *Adam and the Genome*, 150–67.
 <sup>30</sup>Harlow, "After Adam," 189.

<sup>31</sup>Universal Jewish Encyclopedia, 239.

32Ibid., 240.

<sup>33</sup>John Brooke and Geoffrey Cantor, "The Contemporary Relevance of the Galileo Affair," in *Reconstructing Nature: The Engagement of Science and Religion* (New York: Oxford University Press, 1998), 106–40; Dennis R. Danielson, "The Great Copernican Cliché," *American Journal of Physics* 69, no. 1029 (2001): 1029–35, https://doi.org/10.1119/1.1379734; David C. Lindberg, "Galileo, the Church, and the Cosmos," in *When Science and Christianity Meet*, ed. David C. Lindberg and Ronald L. Numbers (Chicago, IL: University of Chicago Press, 2003), 33–60; Janssen, *Standing on the Shoulders of Giants*, 25–31.

<sup>34</sup>Marvin Perry, Joseph R. Peden, and Theodore H. Von Laue, Sources of the Western Tradition, Vol II: From the Renaissance to the Present, 7th ed. (Boston, MA: Houghton

Mifflin, 2008), 31.

<sup>35</sup>Robert Sleightholme Franks, A History of the Doctrine of the Work of Christ in Its Ecclesiastical Development (London: Hodder and Stoughton, 1918), 14; J. F. Bethune-Baker, Introduction to the Early History of Christian Doctrine to the Time of the Council of Chalcedon (London: Methuen, 1903), 351–52.

<sup>36</sup>Bethune-Baker, Early History, 351; Alister E. McGrath, Iustitia Dei: A History of the Christian Doctrine of Justification (Cambridge, UK: Cambridge University Press, 2005), 44; H.E.W. Turner, The Patristic Doctrine of Redemption: A Study of the Development of Doctrine during the First Five Centuries (London: A. R. Mowbray, 1952), 35; J. N. D. Kelly, Early Christian Doctrines, 5th ed. (London: Continuum

International, 2000), 393; Saint Augustine, "For the Feast of the Ascension," sermon number 261 in *The Fathers of the* Church: A New Translation, vol. 38, trans. Sister Mary Sarah Muldowney, R.S.M. (New York: Fathers of the Church, 1959), 379-88, https://archive.org/stream/fathersofthe chur009512mbp/fathersofthechur009512mbp\_djvu.txt.

<sup>37</sup>Pat Shipman, The Invaders: How Humans and Their Dogs Drove Neanderthals to Extinction (Cambridge, MA: Belknap

Press, 2015).

38Frans B. M. De Waal, "A Bottom-Up View of Empathy," in The Primate Mind: Built to Connect with Other Minds, ed. Frans B. M. De Waal and Pier Francesco Ferrari (Cambridge, MA: Harvard University Press, 2012), 121-38; , "Morally Evolved: Primate Social Instincts, Human Morality, and the Rise and Fall of 'Veneer Theory,'" in Primates and Philosophers: How Morality Evolved (Princeton, NJ: Princeton University Press, 2006), 1-58.

<sup>39</sup>Justin L. Barrett, "Cognitive Science of Religion and Christian Faith: How May They Be Brought Together?," Perspectives on Science and Christian Faith 69, no. 1 (2017): 3-12, http:// www.asa3.org/ASA/PSCF/2017/PSCF3-17Barrett.pdf.

40Many theologians refer to this as "General Revelation," in contrast to the "Special Revelation" given by Jesus and within scripture.

<sup>41</sup>Clouser, "Reading Genesis," 238.

<sup>42</sup>Romans 5, Romans 8, and 1 Corinthians 15.

<sup>43</sup>James B. Torrance, "Introduction," in J. McLeod Campbell, The Nature of the Atonement (Grand Rapids, MI: Eerdmans, 1996), 16.

44Denis Lamoureux, "Beyond Original Sin: Is a Theological Paradigm Shift Inevitable?," Perspectives on Science and Christian Faith 67, no. 1 (2015): 35-49, http://www.asa3.org /ASA/PSCF/2015/PSCF3-15Lamoureux.pdf; \_\_\_\_, "Beyond the Cosmic Fall and Natural Evil," Perspectives on Science and Christian Faith 68, no. 1 (2016): 44-59, http://www .asa3.org/ASA/PSCF/2016/PSCF3-16Lamoureux.pdf. <sup>45</sup>Clouser, "Reading Genesis," 237-61.

<sup>46</sup>David L. Wilcox, "A Proposed Model for the Evolutionary Creation of Human Beings: From the Image of God to the Origin of Sin," Perspectives on Science and Christian Faith 68, no. 1 (2016): 22-43, http://www.asa3.org/ASA /PSCF/2016/PSCF3-16Wilcox.pdf.

<sup>47</sup>Venema and McKnight, "Adam's Last Stand?," 31–66. <sup>48</sup>Benno van den Toren, "Human Evolution and a Cultural Understanding of Original Sin," Perspectives on Science and Christian Faith 68, no. 1 (2016): 12–21, http://www.asa3 .org/ASA/PSCF/2016/PSCF3-16Toren.pdf.

<sup>49</sup>George L. Murphy, "Necessary Natural Evil and Inevitable Moral Evil," Perspectives on Science and Christian Faith 68, no. 2 (2016): 111-18, http://www.asa3.org/ASA/PSCF

/2016/PSCF6-16Murphy.pdf.

50Bethany Sollereder, "Evolution, Suffering and the Creative Love of God," Perspectives on Science and Christian Faith 68, no. 2 (2016): 99–110, http://www.asa3.org/ASA /PSCF/2016/PSCF6-16Sollereder.pdf.

<sup>51</sup>R. J. Berry, "Natural Evil: Genesis, Romans, and Modern Science," Perspectives on Science and Christian Faith 68, no. 2 (2016): 87–98, http://www.asa3.org/ASA/PSCF/2016 /PSCF6-16Berry.pdf.

<sup>52</sup>Gregg Davidson, "Genetics, the Nephilim, and the Historicity of Adam," Perspectives on Science and Christian Faith 67, no. 1 (2015): 24-34, http://www.asa3.org/ASA /PSCF/2015/PSCF3-15Davidson.pdf.

53David L. Wilcox, "Genetic Insights for Human Origins in Africa and for Later Neanderthal Contact," Perspectives on

Science and Christian Faith 66, no. 3 (2014): 140-53, http:// www.asa3.org/ASA/PSCF/2014/PSCF9-14Wilcox.pdf; "Our Genetic Prehistory: Did Genes Make Us Human?," Perspectives on Science and Christian Faith 66, no. 2 (2014): 83-94, http://www.asa3.org/ASA/PSCF/2014/PSCF6 -14Wilcox.pdf; Sy Garte, "Evolution and Imago Dei," Perspectives on Science and Christian Faith 65, no. 4 (2013): 242-44, http://www.asa3.org/ASA/PSCF/2013/PSCF12 -13Garte.pdf; Malcolm Jeeves, "Neuroscience, Evolutionary Psychology, and the Image of God," Perspectives on Science and Christian Faith 57, no. 3 (2005): 170-86, http:// www.asa3.org/ASA/PSCF/2005/PSCF9-05Jeeves.pdf; Harlow, "After Adam," 179-95; Ralph F. Stearley, "Assessing Evidences for the Evolution of a Human Cognitive Platform for 'Soulish Behaviors,'" Perspectives on Science and Christian Faith 61, no. 3 (2009): 152-74, http://www .asa3.org/ASA/PSCF/2009/PSCF9-09Stearley.pdf.

54Stearley, "Evidences for the Evolution of a Human Cognitive Platform for 'Soulish Behaviors,'" 152-74; Venema and McKnight, "Adam's Last Stand?," 31-66; Wilcox, "Our Genetic Prehistory," 83-94; Wilcox, "Genetic Insights," 140-53.

55Wilcox, "A Proposed Model for the Evolutionary Creation of Human Beings," 2-43; Jeeves, "Neuroscience, Evolutionary Psychology, and the Image of God," 170–86; Garte, "Evolution and Imago Dei," 242-44; Berry, "Natural

Evil," 87-98.

<sup>56</sup>Lamoureux, "Beyond the Cosmic Fall and Natural Evil," 44-59; Murphy, "Necessary Natural Evil and Inevitable Moral Evil," 111-18; Sollereder, "Evolution, Suffering and the Creative Love of God," 99-110; Berry, "Natural Evil," 87-98.

<sup>57</sup>Murphy, "Necessary Natural Evil and Inevitable Moral Evil," 111–18.

58Lamoureux, "Beyond Original Sin," 35-49; van den Toren, "Human Evolution and a Cultural Understanding of Original Sin," 12-21.

<sup>59</sup>Sollereder, "Evolution, Suffering and the Creative Love of God," 99-110.

60 Harlow, "After Adam," 179-95; Davidson, "Genetics, the Nephilim, and the Historicity of Adam," 24–34.

<sup>61</sup>Davidson, "Genetics, the Nephilim, and the Historicity of Adam," 24–34. 62Berry, "Natural Evil," 87–98.

63Lamoureux, "Beyond Original Sin," 46.

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