Evolutionary Theodicy

with Denis Edwards, "Christopher Southgate's Compound Theodicy: Parallel Searchings"; Ted Peters, "Extinction, Natural Evil, and the Cosmic Cross"; Robert John Russell, "Southgate's Compound Only-Way Evolutionary Theodicy: Deep Appreciation and Further Directions"; Bethany Sollereder, "Exploring Old and New Paths in Theodicy"; Holmes Rolston, III, "Redeeming a Cruciform Nature"; Ernst M. Conradie, "On Social Evil and Natural Evil: In Conversation with Christopher Southgate"; Philip Clayton and Steven Knapp, "Evolution, Contingency, and Christology"; John F. Haught, "Faith and Compassion in an Unfinished Universe"; Celia Deane-Drummond, "Perceiving Natural Evil through the Lens of Divine Glory? A Conversation with Christopher Southgate"; Nicola Hoggard Creegan, "Theodicy: A Response to Christopher Southgate"; and Neil Messer, "Evolution and Theodicy: How (Not) to Do Science and Theology."

SOUTHGATE'S COMPOUND ONLY-WAY EVOLUTIONARY THEODICY: DEEP APPRECIATION AND FURTHER DIRECTIONS

by Robert John Russell

Abstract. Christopher Southgate offers a remarkable evolutionary theodicy that includes six affirmations and arguments; together they form a unique and very persuasive proposal which he terms a "compound evolutionary theodicy." Here I summarize the arguments and offer critical reflections on them for further development, with an emphasis on the ambiguity in the goodness of creation; the role of thermodynamics in evolutionary biology; the challenge of horrendous evil in nature; and the theological response to theodicy in terms of eschatology, with its own severe challenge from cosmology.

Keywords: ambiguous goodness of creation; "co-suffering" argument; compound evolutionary theodicy; cosmic theodicy; eschatology and cosmology; "only way" argument; thermodynamics and evolutionary biology

Christopher Southgate has written extensively and with great sensitivity, insight, and a clear acknowledgement of his theological premises, on the problem of evolutionary theodicy. In this short essay celebrating Chris's work, I will focus almost exclusively on what may be his culminating work to date, *The Groaning of Creation: God, Evolution, and the Problem of Evil* (Southgate 2008a; see also Southgate 2008b). Here Chris offers an

Robert John Russell is Ian G. Barbour Professor of Theology and Science, Graduate Theological Union, and Founder and Director, the Francisco J. Ayala Center for Theology and the Natural Sciences, Berkeley, CA, USA; e-mail: rrussell@gtu.edu.

evolutionary theodicy that includes six affirmations and arguments; together they form a unique proposal which he terms a "compound evolutionary theodicy." I deeply applaud and, to a large extent, agree with Chris's proposal in my own approach to natural theodicy. Granted we differ a bit in terminology. I prefer to use the term "natural evil" to refer not only to biological evil (e.g., suffering, disease, death, and extinction) which roughly coincides with Chris's term "evolutionary evil" but also with physical evil (e.g., tsunamis, hurricanes, earthquakes, the effects of meteors striking the Earth, etc.). I then use the term "natural theodicy" to refer to various approaches to theodicy that seek to respond to the challenges of natural evil in both its biological and its physical forms. But these are minor differences compared to the overall agreement between Chris's theodicy and mine. His six arguments are listed succinctly in the introduction to *Groaning* (2008a, 15–16) and then explored in detail throughout the book. Here I will summarize each of them briefly, although many details must be left out for limitations of space (e.g., a classification of "good-harm" defenses developed with Andrew Robinson was used extensively in Groaning, especially in Chapter 3; see Southgate and Robinson 2007). After summarizing Southgate's six arguments I then offer reflections for further development.

Arguments 1 and 2

- 1. The goodness of creation. Southgate starts with the goodness of creation, following the ancient Christian theological tradition based on Genesis 1 and now spelled out in light of evolutionary science: "Creation is good in its propensity to give rise to great values of beauty, diversity, complexity, and ingenuity of evolutionary strategy" (Southgate 2008a, 15).
- 2. "The only way argument." Southgate immediately follows this with the additional crucial insights about suffering in nature given us both by science ("pain, suffering, death and extinction are intrinsic to a creation evolving according to Darwinian principles") and by revelation (see his reference to the "groaning of creation" drawn from Romans 8:22). Southgate then unfolds his "only way argument" which I find extraordinarily promising: "An evolving creation was the only way in which God could give rise to the sort of beauty, diversity, sentience and sophistication of creatures that the biosphere now contains."

My Response to 1 and 2:

I first want to underscore the fact that Southgate's insightful juxtaposition of the goodness and the groaning of creation is not separable into "theology

(goodness) vs. science (suffering)" as one might initially assume. Instead what science gives Southgate is the insight that the values or goodness of creation are intrinsically linked to the evolutionary processes by which these values are achieved, and these processes, in turn, inevitably come with the cost of inherent disvalues. I will refer to this juxtaposition of goodness and groaning in terms of the ambiguity or the ambivalence of the goodness of creation. And so, unlike the usual exposition of the doctrine of creation ex nihilo which insists on unblemished goodness of all that God creates, Southgate points profoundly to the fact that both the Bible and science lead us to a nature whose goodness is deeply refracted everywhere with tragedy and brokenness, and that science gives us the additional insight that connects tragedy and brokenness in nature to the long sweep of natural processes. I am reminded of Paul Tillich who famously called the ambiguity of nature the "universal existential estrangement" of reality as a whole as a way of reclaiming the symbol of the Fall, now discarded as an historical event, in terms of scientifically and psychologically informed consciousness (Tillich 1967, 29-44). And with John Hick, Wolfhart Pannenberg, Ted Peters, and many others, I affirm that the ambiguity of creation does not derive from an historical fall from an unambiguously good past: rather its unambiguous goodness is eschatological (Southgate 2008a, 80). Indeed, with Karl Rahner, Christ can be seen as the fulfillment of evolution even without a fall (Rahner 1983, 157-92, especially 184-92).

Next I want to make several points in detail in response to Southgate's points 1 and 2.

2a. The "only way argument": Darwinian evolution is the only way for natural processes to produce the variety of species on Earth. Here Southgate turns directly to the core insight of his compound theodicy: the "only way argument." As cited above, he holds that "an evolving creation was the only way in which God could give rise to the sort of beauty, diversity, sentience and sophistication of creatures that the biosphere now contains." In his extended discussion (2008a, Chapter 3) Southgate describes this argument as a "developmental good-harm analysis" and explores a number of approaches to it, and to related topics which I'll discuss below, by such scholars as Denis Edwards, George Ellis, Richard Kropf, Nancey Murphy, Arthur Peacocke, Holmes Rolston, III, and my own writing. He even cites Michael Ruse who, while never an unqualified friend of Christianity, nevertheless offered a helpful response to the way the problem of biological natural evil is used by Richard Dawkins to support atheism. Following a particularly stark quotation taken from Dawkins in support of the meaninglessness of the world given the astonishing adaptation of both predator and prey to the predator-prey cycle, Ruse writes that God is not really to blame for this kind of evil through, basically, an "only way argument":

Dawkins ... argues strenuously that selection and only selection can [produce adaptedness]. No one—and presumably this includes God—could have got adaptive complexity without going the route of natural selection.... The Christian positively welcomes Dawkins's understanding of Darwinism. Physical evil exists, and Darwinism explains why God had no choice but to allow it to occur. He wanted to produce designlike effects (including humankind) and natural selection is the only option open. (Ruse 2004, 136–37, my italics; see Southgate 2008a, 48, endnote 49, and Ayala 2007, 159–60)

2b. Natural evil is an unintended consequence of these Darwinian processes. The "only way argument" is certainly an important step to take in developing a vigorous natural theodicy. However there is an additional insight awaiting our exploration. It emerges when we build on the "only way" argument using what is often called a "consequentialist theodicy": Natural evils are an unintended consequence of God's choice to create life through the processes of nature without intervening in them. The laws of nature (whether viewed philosophically as prescriptive/ontological or descriptive/regulative) explain the occurrence of particular events of natural evil; God did not directly cause them. I take this approach to natural evil, as do other scholars such as Nancey Murphy and William Stoeger (Murphy, Russell, and Stoeger 2007; see in particular the very illuminating description in Figure 1, "Reasons for Evil," in Murphy's article, p. 137).

Another way to put this is that Darwinian evolution has removed the "design" argument of William Paley and replaced it with the "unintended consequences" argument. We know that a tremendous amount of suffering in nature arises from the tragic characteristics of the biology of animals. Francisco Ayala cites as examples "the incompetent design of the human jaw, the narrowness of the birth canal, and our poorly designed backbone." He writes that we should "accept natural selection as the process that accounts for the design of organisms, as well as for the dysfunctions, oddities, cruelities and sadisms that pervade the world of life." Ayala helpfully concludes that God is not the explicit designer of each facet of evolution (pace "intelligent design") and thus is not responsible for the suffering found throughout nature (Ayala 2007, 159–60).

2c. I urge that we move 'down' from biology to physics and discover latent there a "cosmic theodicy—and its failure." "Only way" scholars (Darwinian evolution is the only way to produce life) such as Ruse and Southgate and "consequentialist" scholars (natural evil is the unintended consequence of Darwinian evolution) such as Ayala and Murphy usually start with evolutionary biology as the foundational science on which to develop their theodicy. But this starting point overlooks the underlying physical processes that serve as necessary preconditions for

the possibility of biological evolution, and which raise challenges to both the "only way" and the "consequentialist" arguments.

As an example, one need only think about how thermodynamics plays a variety of crucial roles in making biological evolution possible: (1) Biological metabolism, organic disease, even biological death as disintegration involve the second law of thermodynamics which describes the inevitable increase of entropy to a maximum in closed systems. (2) The whole sweep of the evolution of species requires the massive energy gradient between the surface of the sun (~6,000 degrees C) and the microwave radiation of energy away from Earth (~3 degrees C). According to nonlinear, non-equilibrium thermodynamics, when an open system, like earth's ecology, is nested within a larger system, here the earth-sun system, the entropy of the open system can decrease and the complexity of its systems can increase as it exhausts entropy into the larger environment (see, e.g., Prigogine 1980). (3) Thermodynamics plays a fundamental role in scenarios being developed to explore the origin of life and not just the evolution of new species. One of the most promising is that of Terrence W. Deacon. In his groundbreaking work *Incomplete Nature*, Deacon (2011) moves in three steps from first-order, homeodynamic processes to second-order, morphodynamic processes to third-order, teleodynamic processes. These three steps are illustrated, respectively, by surface tension in a liquid; by hexagonal Bénard cells in a heated liquid; and by the autocatalysis and containment reactions in an "autogen" (coined so by Deacon, who also refers to it with the remarkable term "negentropy ratchet"). All of these are based on the foundational role of thermodynamics. In this sense, the physics of thermodynamics makes the biological evolution of life possible. It underlies the life and activity of sentient creatures as well as their dissipation and death, as well as the extinction of species. In short, the production of entropy in closed and in open systems underlies both what is tragic (Southgate's "disvalue") and what is glorious (Southgate's "value") about biological life; what I would call both natural evil and natural goodness. The presence together of both natural evil and natural goodness highlights the ambiguous value of biological life, a fact which I have explored in a variety of essays starting in 1984 (Russell 1984, reprinted in Russell 2008, Chapter 7). (4) Numerous other examples can be considered: how gravity, geology, and the specific orbit of the moon lead to the tidal patterns of the Earth's oceans and thus to both the environment in which early life evolved and in which tsunamis bring death and destruction to countless thousands of people; how gravity made possible the 10 km asteroid that wiped out the dinosaurs 65 million years ago and at the same time opened the way for the eventual evolution of primates including *Homo sapiens*; and so on.

Hence, while agreeing with both Southgate's biological "only way argument" and with consequentialist views such as those of Ayala and Murphy,

I want to move below the domain of biology and reach down to the fundamental laws of physics, such as those of the electro-weak and the gravitational interactions, and to the elementary physical constants, such as Planck's constant and the speed of light, which underlie all physical processes and thus all biological processes. But this immediately takes us to the widest possible "theater" in which to pose the problem of theodicy: the universe as such, since fundamental physics provides the basis for a scientific cosmology, such as Einstein's Big Bang cosmology, which describes the physical universe and its 13.8 By history. (Whether it necessarily describes the far future of the universe leads to a lengthy interaction with Christian eschatology when it is based on the bodily resurrection of Jesus. I'll return to this topic briefly below.) Here we are drawn irresistibly to challenge the "only way" argument in the deepest and most profound and universal character: Could God have created a different universe with very different fundamental laws and constants, one in which life could have evolved without the extent of natural evil entailed by Darwinian evolution? Or did God's intention to create life through natural processes require that God create this particular universe with these particular fundamental laws and constants even at the cost of widespread natural evil? In previous writings I have called this question "cosmic theodicy" (Russell 2007). Southgate briefly describes my "cosmic theodicy" with approval in Groaning (48).

Let me pause for a moment to offer an important clarification about the term "cosmic theodicy." The term combines four distinct ideas: (1) It is a "cosmic theodicy" in scope: the scope in which this theodicy is articulated is the largest possible one, namely the universe itself as understood by scientific cosmology. As such, and at the conclusion of this paragraph, I will claim that it poses the terminus of a succession of backward-looking theodicies whose scope broadens backward from their initial basis in the Eden story and the static/Biblical sense of all divinely created life, to the dynamic sense of all life now on Earth as arising in the modern evolutionary sense, over billions of years, to the underlying basis of physics in making such biological evolution possible. (2) It is a "cosmic *theodicy*" in character: it is a theodicy in some ways like other theodicies that look back in historical time (which Hick describes as "Augustinian") but it is a theodicy unlike all other backward theodicy/ies in that it reveals the utter failure in principle of this and all backward-looking theodicies. (3) It is a "consequentialist theodicy" in that natural evil is the result of the regular processes of nature and not specific divine actions. (4) It is also an "only way theodicy" in that these processes, and their descriptive laws, are the only way God could create life by evolutionary means without violating these processes (e.g., without miracles in the Humean sense). Finally, (5) because it is spelled out in terms of physics and not biology it cannot appeal to prior or further underlying laws of nature to absorb its failures as a theodicy, the way Ruse did using Dawkins. In essence, this cosmic theodicy is really "the end of the line" of all backward-looking theodicies.

Details: In essence, then, my response is that cosmic theodicy marks the end of the kind of theodicies which start with the givenness of biological evolution and deploy "consequentialist" plus "only way" arguments to account for natural evil (and natural goodness) and thus attempt to shield God from blame for even those particularly "horrendous evils" in nature, to use the powerful term developed by Marilyn McCord Adams (2000, 2006). Instead we must recognize that these "biological only way" theodicies eventually fail because biology is not a given; it depends on physics and its physical description of the most basic material character of our universe.

But as we move "down" from biology to physics and "back" from the way creation is now to its beginning in the cosmic singularity, t = 0, all "physical only way" theodicies fail for several reasons. It is extremely difficult, if not impossible, to answer the question, drawing on science, about whether this universe with these physical laws and constants is uniquely capable of life (e.g., "anthropic") or whether other combinations of the fundamental laws and natural constants could have yielded an "anthropic" universe with no, or even with less, natural evil. To pursue such research, it is increasingly clear that we need to move carefully and speculate about such topics as "eternal inflation" and the "multiverse" from which our universe might have arisen. At some point the project seems, to me at least, to founder under the weight of exponentially increasing scientific unknowns and endlessly repeating "but why these laws" questions.

The failure of cosmic theodicy, in my view, marks the end in principle of "backward-looking" approaches to theodicy, or what I have often called a "Fall without the Fall scenario" in response to natural evil—the attempt to construct a robust theodicy within the confines and limitations of the character of creation as we know it now theologically (partially good), and not as we believe it will be eschatologically (wholly good). Instead, I believe we must look not backward, but forward to "the future of the future" for a robust theodicy based ultimately on a theology of redemption focused on the eschatological New Creation. More so, I would make the response to natural evil into a *criterion of theory choice* when seeking to construct such an eschatological vision of the New Creation.

Before continuing, though, I do want to note a minor disagreement between Southgate and me on this point. Southgate writes that I suggest we "must accept an 'agnostic cosmic theodicy' ... (and search for) more complex responses to natural evil" (quoting me here). Instead, Southgate continues to explore the "only way" argument through the presupposition that "a good and loving God would have created the best of all possible universes, in terms of the balance between its potential for realizing creature values and the concommitment pain." In fact what I meant by searching for a "more complex response to natural evil" is that we should turn away from

a theodicy based in the way creation is now, with its universal existential estrangement, and turn towards the eschatological New Creation as the best (only?) possible response to theodicy.

ARGUMENTS 3 AND 4

- 3. "The co-suffering argument:" The response of Southgate's theodicy to the brokenness of creation is that God co-suffers with "every sentient being in creation."
- 4. *The* eschatological *argument*: Moreover, the Cross of Christ is "the epitome of this divine compassion," and the Cross and Resurrection together "inaugurate the transformation of creation."

My Response to 3 and 4

The "co-suffering argument" discussed by Southgate is, in one form or another, a frequent part of the variety of evolutionary theodicies found in the theology and science literature. Southgate cites examples of panentheist versions by Holmes Rolston, III and Arthur Peacocke, by Jay McDaniel's process version, and by John Haught's "fusion of process thought with Roman Catholic thinkers" (Southgate 2008a, 50-54, 56-57). But Southgate adds to his compound theodicy the claim that the Cross and the Resurrection "inaugurate the transformation of creation." This is a rare move in the field, particularly when the theological term "creation" is taken, as Southgate correctly does, to include the entire physical universe as understood by Big Bang cosmology, and not just our planet and its evolutionary history of life. Here Southgate cites John Polkinghorne and me as "scientist-theologians who have done most to develop this important area" of research (Southgate 2008a, 79). He recounts my claiming that "the resurrection of Christ (is) the beginning of a final act (of God) that will transform the character of all creation," and my insisting that a "wide-ranging eschatological vision" of the transformation of the universe is required if an evolutionary (theodicy) can be vindicated" (Southgate 2008a, 80).

With Southgate we now enter into highly problematic and conflictual grounds. Big Bang cosmology of the latter twentieth century put forth two widely regarded scenarios for the cosmic future: "freeze" or "fry." In the freeze scenario, the universe continues to expand forever and endlessly cools. In the fry scenario, the universe expands to a maximum size and then recollapses to zero size with infinite temperatures and densities. Current views strongly favor the freeze scenario over the fry scenario. In both cases, however, if cosmology has the last word about the cosmic future, there will be no New Creation within the future of our universe, although in the initial fry model one might speculate about a New Creation after the present

one ends (there is no "after" to the freeze model in which the universe lasts forever). Note: In recent decades, however, even the fry option has been more firmly cut off. It is now strongly believed that the universe will not only expand endlessly, but its rate of expansion is accelerating indefinitely. Eventually all that will remains is a universal cloud of elementary particles drifting in endless darkness. This prognosis challenges, conflicts with, and undermines the hopes of any Christian eschatology which takes the physical world seriously as that out of which the New Creation will be formed by God.

Before continuing, I want to call attention to a minor error in Southgate's text. Southgate describes the two possible futures for the universe according to Big Bang cosmology but suggests that in both the universe has an end:

One of the clearest conclusions of contemporary cosmology is that this universe will not persist forever; it will either collapse in on itself (the so-called "big crunch"), or expand away to infinity (so-called "heat death"). (Southgate 2008a, 78; but see endnote 6, 168)

He goes on to point to "a consonance between cosmology and Christian tradition"—"both suggest that this present universe in its present form will have an ending or culmination" (Southgate 2008a, 81). But this is simply incorrect. In the freeze model, the future of the universe has no end. I wrote that the freeze model points to "dissonance" between eschatology and cosmology some forty years ago (see Russell 2008, Chapters 1–3).

In my opinion this conflict remains largely ignored by almost all of the scholars in theology and science. Still, a few important and promising steps have been taken. The first one, and one which I have taken repeatedly over the past decade and a half, is to recognize that the conflict is not really between theology (eschatology) and science (cosmology) but between theology and a routine philosophical assumption which can be traced back to Hume's reliance on induction, namely that scientific predictions about the future of the universe must be accepted if the theories on which they are built are accepted. But if we assume instead that (1) science describes the processes of nature (i.e., that these processes are not determined by the scientific laws of nature), and (2) that the ultimate cause of these processes is the will of God, then if God chooses to act in a new way, the predictions science makes based on the present natural processes will simply not come to pass. (3) Because the God who creates and sustains the universe is of unlimited freedom to love the universe into a new way of being, and if we believe that God is doing so beginning with the Cross and Resurrection of Christ, we have grounds to hope that the future of all that is will be something truly like the New Creation that Biblical and theological accounts offer.

As Southgate tells us, Polkinghorne has taken a very important step in this direction by claiming that the "transformation" of the universe by God will include both elements of continuity and of discontinuity, offering us a hint of what the New Creation will be like. According to Polkinghorne, in the New Creation there will be "embodiment (but) no transience, pain or suffering," "temporality (but) no tendency to disorder," and so on. And since there are elements of continuity, I have suggested that science can help us shed light on suggestions such as those of Polkinghorne about the *present* form of nature. So, for example, can the first law of thermodynamics (e.g., the conservation of energy) be true in the New Creation while the second law (regarding the increase of entropy as a tendency to disorder that underlies much of transience, pain, and suffering) no longer will hold? There is, of course, much more that needs exploration here (see Russell 2008, Chapter 10; and Russell 2012), but I will leave it for another occasion and return with enthusiasm to Southgate's excellent book.

ARGUMENT 5

5. "The pelican heaven argument:" Eschatology must include the fulfillment of creatures "that have known no fulfillment in this life." No creature should be regarded as an "evolutionary expedient."

My Response to 5

I support Southgate's point very strongly. It includes at least three distinct claims:

- (1) Rejection of any "means/end" argument that the evolution of any species (usually this means humans) justifies the suffering and extinction of any prior species that led to it.
- (2) Here Southgate expands upon his "co-suffering argument" (see point 3 above) which expresses his concern for all creatures that have the capacity to suffer. In addition, he affirms here that all creatures which have died without their full potential having been realized must be given fulfillment elsewhere.
- (3) The only satisfactory understanding of that "elsewhere" is the "heaven" promised in the apostolic confession of the Christian church. Better put, it is the eschatological hope that the present creation will be transformed by God the Trinity into the New Creation, with its new heaven and new earth, based on the bodily Resurrection of Jesus.

With Southgate, I too reject any "means/end" argument that the evolution of future species justifies the extinction of previous ones. Instead, the unfulfillment of these previous species and all their members must be taken up into the healing, everlasting life with the Triune God.

Here, though, an important issue arises on which Southgate and I might seem to disagree. I believe that God suffers with all creatures, and not just all types (indeed, what are "types" in an evolutionary context, species?; Russell 2006, 52–53). Southgate rightly criticizes me for writing that "each creature, or species at least, must have an eschatological future of its own." (The italics are Southgate's.) His concern is that a limitation of redemption to species and not to individual animals "runs the risk of not doing full justice either to the richness of individual animal experience, or to the theodicy problems that evolutionary creation poses."

Actually, I entirely agree with Southgate. I failed to footnote the reason for my qualification "or species at least": it was out of deference to a disagreement between Denis Edwards and Philip Hefner over this very point, and I had hoped to acknowledge the value of both sides without taking sides. I believe that the rest of my comments on the pages cited make it clear that I agree with Southgate about the redemption of all creatures—of at least animal sentience.

Southgate's position is nicely articulated in a recent publication by Bethany Sollereder. It is worth quoting Sollereder at length here:

Is it plausible that God, who knows and loves every creature more than we have ever known or cherished even the most beloved pet, only values non-human creatures for their type?... Redemption, for all animals, is not just freedom from suffering, but the embrace of a new capacity for union with God. The individual fully enjoys God, both knowing and being completely known by divine love. God too, made vulnerable to creation's "otherness," finds love's endeavour fulfilled.... In light of God's generosity and love, I hold the view (alongside Jürgen Moltmann and Elizabeth Johnson) that all non-human creatures will be raised, fulfilled, and exalted. (Sollereder 2015).

I strongly agree with Sollereder's passionate statement here. I have elaborated this point of view in recent writings, claiming that every creature is given its own "proleptic" event at death: its final and proleptic encounter with its redeemer, Christ. I have described this by saying that the normative prolepsis (Easter), in which the eschatological future was manifested in the ambiguous historical present, can be generalized to manifestations of countless prolepses given by God's grace to all the creatures in their suffering and death (Russell 2015).

ARGUMENT 6

6. "The *co-Redeemer argument*:" Southgate's "high doctrine of humanity" sees creatures like us as in some sense "a goal of evolutionary creation." "Humans have a crucial and positive role, cooperating with their God in the healing of the evolutionary process."

My Response to 6

I have recently developed the idea of interpreting the *imago dei* as the "eschatological companion" of all life on Earth (Russell 2018). Here I focus on one particular aspect of our cooperating with God in the healing of the environment: namely our response to global climate change due primarily to anthropogenic causes. Climate change poses a severe challenge to both human and nonhuman life on Earth and requires a prophetic call for a decisive response from Christian and other religious leaders.

Previous writings in environmental and ecological ethics have often lifted up "stewardship" as the most promising way to envision our relationship to the nonhuman ecological sphere and thus, by default, to address climate change (Barbour 1980, Chapter 2). This is particularly underscored theologically when stewardship is used to interpret our being created in "the image of God (*imago dei*)" as found in Genesis 1:26–28. I am convinced, however, that scientific findings over the past several decades have challenged the adequacy of the stewardship model for at least two reasons: (1) because of its dependence on the assumption of a sharp distinction between humans and the rest of nature and (2) because the severity of global climate change demands a response that far exceeds the concept of stewardship. It is my hope that a new paradigm of humanity as created in the image of God, one that overcomes this sharp distinction, can contribute to a more promising response to global climate change.

I will suggest we call this paradigm "the eschatological family of life on Earth" because it combines two views:

(1) "Family," a term suggested in conversation to me by Joshua Moritz, connotes the growing scientific understanding of humanity's extremely close relation to nonhuman animals from canines to primates. We now know there are critical factors of continuity in the evolution of primate species as well as factors of genuine novelty in humankind. In this "familial" view of the evolutionary narrative, the "uniqueness" of humanity can be seen in quantitative forms of social behavior but not in the qualitative ways traditional theological and secular thought assumed. For example, ethological research ranging from studies of canine behavior to primate behavior point to forms of moral social behavior that appeared long before humanity's evolution in "species-specific" ways. Yet such behavior clearly served as a basis (as "latent") for its full expression in Homo sapiens (Deane-Drummond 2009). But even without a strong empirical basis for the claim of radical human uniqueness, there is still a robust theological option for asserting human uniqueness based on the image of God. This is basically the position that Joshua M. Moritz (2016, Chapter 7) takes, and I'll be drawing on his writings extensively here. In this view of the image of God, God freely chose humankind from among the hominids of the past ~100–200K years not because of our absolute, empirical uniqueness

(as traditionally assumed) but because of God's absolute freedom (i.e., "grace").

(2) "Eschatology" is that part of Christian theology which deals with the most all-inclusive creaturely framework within which salvation occurs. In the twentieth century it came to be identified with the "realized/not yet" character of the saving events in the birth, life, death, and resurrection of Jesus, and it was expanded to include the ultimate future of all life on Earth—and even in the cosmos. Eschatology includes a *prophetic* view as we see in the early Hebrew Bible's understanding of salvation as requiring massive political change that yields a new society embodying God's will for authentic human life (Isaiah 11: 1–9). It also includes an *apocalyptic* view as found in the later Hebrew Bible (second Isaiah, Daniel), intertestamental texts, and the New Testament. Scripture combined both of these views in its account of Jesus' life and ministry (although mostly the prophetic theme) and in his death and resurrection (here mostly the apocalyptic theme). In the New Testament as a whole, the Kingdom of God is both realized in Jesus (e.g., Luke 4: 14–21, 17: 20–25) and yet is still to come.

According to the new paradigm I'm suggesting, prophetic eschatology offers a frame for our renewed commitment to challenging global climate change as a generalization of all those liberation theologies which lift up the oppressed in human society and offers them real hope while challenging their oppressors. Apocalyptic eschatology speaks Good News to our personal realization of ultimate absurdity in the face not only of personal death but now the mass extinction of species due to climate change. It proclaims that God the Creator and Redeemer is able to save all life from the ultimate challenge of death and extinction through the eschatological coming of the eternal Kingdom of God and the transformation of the universe, with its laws of dissipation and death, into the blessed New Creation (Southgate 2008c). It inspires and emboldens us to tackle climate change regardless of our success in dealing with it because we know that the power of the eschatological victory is with us always thanks to the grace of God whom we serve.

CONCLUSION

Southgate has traversed a long and winding road in his mission to construct a compound evolutionary theodicy that affirms

- the goodness of creation found in all sentient creatures who share in such values as fellowship with God even at the cost of suffering, death, and extinction;
- Darwinian evolution as the only way God could create a universe with these values;
- God as suffering with every creature;

- the Cross as the epitome of divine compassion and the inauguration
 of the eschatological transformation of the universe, with a particular
 concern for all creatures who have known no fulfillment in this life;
- our role as "co-redeemer" with God in the healing of the evolutionary process.

It is a magnificent achievement, one which builds on much of his previous writings and which hold enormous promise for future development.

I wish to close by pointing to a gem tucked away in the final short section of Chapter 5 of *Groaning*. Here we find a remarkable insight into what I take to be one of the most arduous challenges in the discussion of theodicy, both natural and moral: "Why did God not just create heaven?" (Southgate 2008a, 90–91). Southgate offers us this gem as a response to a blistering attack by Wesley Wildman on the God whom Wildman rejects because of, in part, the problem of evolutionary theodicy and, in Wildman's mind, the inevitable failure of eschatology to respond persuasively to such a theodicy. Quoting Wildman that if God really is to create a heavenly world of "growth and change and relationality yet no suffering," that world and not this world would be the best of all possible worlds, and a God that would not do so would be "flagrantly morally inconsistent" (quoted in Southgate 2008a, 90–91).

Southgate replies first by repeating his "only way" argument: This evolutionary environment, full as it is of both competition and decay, is the only type of creation than can give rise to creaturely selves.

He then offers us his theological point in light of that argument and based on his confession of faith in God:

Since this was the world the God of *all creativity* and *all compassion* chose for the creation of creatures, we must presume that this was the only type of world that would do for that process. (My italics.)

Southgate then gives us his brilliant conclusion:

In other words, our guess must be that though heaven can eternally preserve those selves, subsisting in suffering-free relationship, it could not give rise to them in the first place.

It is not only an amazing response to the powerful charge made by Wildman against the kind of theism Southgate and I share. It offers the beginning of a very positive and extremely promising response to one of the most notoriously challenging issues in the whole field of Christian theology and science: why not just heaven? Joshua Moritz cites Southgate on this point in his remarkable text *Religion and Science* (Moritz 2016, 265, footnote 122; see also the "two goods" argument of Sovik, 2011, 257, 262). I eagerly look forward to exploring the promise of Southgate's position in future writings.

In sum, I am personally and professionally deeply grateful to Chris for the illumination his work on theodicy brings to the landscape of theology and science where its gorges are darkened by the tragic ambiguity of goodness and suffering in creaturely life even when its peaks are aglow with the light of their current, joy-filled lives and with the breathtaking promise of an endless sunrise which we will all celebrate eternally and together in the new world to come, thanks be to God.

REFERENCES

- Adams, Marilyn McCord. 2000. Horrendous Evils and the Goodness of God. Ithaca, NY: Cornell University Press.
- 2006. Christ and Horrors: The Coherence of Christology. Cambridge, UK: Cambridge University Press.
- Ayala, Francisco J. 2007. Darwin's Gift to Science and Religion. Washington, DC: Joseph Henry
- Barbour, Ian G. 1980. *Technology, Environment, and Human Values*. Santa Barbara, CA: Praeger. Deacon, Terrence W. 2011. *Incomplete Nature: How Mind Emerged from Matter*. New York, NY: W. W. Norton.
- Deane-Drummond, Celia. 2009. Christ and Evolution: Wisdom and Wonder. Minneapolis, MN: Fortress Press.
- Moritz, Joshua M. 2016. Science and Religion: Beyond Warfare and Toward Understanding. Winona, MN: Anselm Academic.
- Murphy, Nancey, Robert John Russell, and William R. Stoeger, SJ, eds. 2007. *Physics and Cosmology: Scientific Perspectives on the Problem of Natural Evil*, Volume 1. Vatican City State: Vatican Observatory Publications, and Berkeley, CA, Center for Theology and the Natural Sciences.
- Prigogine, Ilya. 1980. From Being to Becoming: Time and Complexity in the Physical Sciences. San Francisco, CA: W. H. Freeman.
- Rahner, Karl. 1983. "Christology within an Evolutionary View of the World." In Rahner, Theological Investigations V. New York, NY: Crossroads.
- Ruse, Michael. 2004. Can a Darwinian Be a Christian? The Relationship between Science and Religion. Cambridge, UK: Cambridge University Press.
- Russell, Robert John. 1984. "Entropy and Evil." Zygon: Journal of Religion and Science 19: 449–68.
- ———. 2006. Cosmology, Evolution, and Resurrection Hope: Theology and Science in Creative Mutual Interaction, edited by Carl. S. Helrich. Goshen, IN: Goshen College/Pandora Press.
- 2007. "Physics, Cosmology, and the Challenge to Consequentialist Natural Theodicy." In *Physics and Cosmology: Scientific Perspectives on the Problem of Natural Evil, Volume 1*, edited by Nancey Murphy, Robert John Russell, and William R. Stoeger, SJ, 109–30. Vatican City State: Vatican Observatory Publications, and Berkeley, CA: Center for Theology and the Natural Sciences.
- 2008. Cosmology from Alpha to Omega: The Creative Mutual Interaction of Theology and Science. Minneapolis, MN: Fortress Press.
- . 2012. Time in Eternity: Pannenberg, Physics and Eschatology in Creative Mutual Interaction. Notre Dame, IN: University of Notre Dame Press.
- 2015. "Jesus: The Way of All Flesh and the Proleptic Feather of Time," In *Incarnation: On the Scope and Depth of Christology*, edited by Niels Henrik Gregersen, 341–54. Minneapolis, MN: Fortress Press.
- 2018. "The Eschatological Family of Life on Earth: A Christian Response to Global Climate Change." In Russell, *Sustainable Societies: Interreligious Interdisciplinary Responses*. New York, NY: Springer.
- Sollereder, Bethany. 2015. "When Humans Are Not Unique: Perspectives on Suffering and Redemption." *Expository Times*. 127(1): 17–22.

- Southgate, Christopher. 2008a. The Groaning of Creation: God, Evolution, and the Problem of Evil. Louisville, KY: Westminster John Knox Press.
- ———. 2008b. "Creation as 'Very Good' and 'Groaning in Travail': An Exploration in Evolutionary Theodicy." In *The Evolution of Evil*, edited by Gaymon Bennett, Martinez J. Hewlett, Ted Peters, and Robert John Russell, 53–85. Gottingen, Germany: Vandenhoeck & Ruprecht.
- 2008c. "Protological and Eschatological Vegetarianism." In Eating and Believing: Interdisciplinary Perspectives on Vegetarianism and Theology, edited by David Grummet and Rachel Muers. London, UK: Continuum.
- Southgate, Christopher, and Andrew Robinson. 2007. "Varieties of Theodicy: An Exploration of Responses to the Problem of Evil Based on a Typology of Good–Harm Analyses." In *Physics and Cosmology: Scientific Perspectives on the Problem of Natural Evil, Volume 1*, edited by Nancey Murphy, Robert John Russell, and William R. Stoeger, SJ, 67–90. Vatican City State: Vatican Observatory Publications, and Berkeley, CA: Center for Theology and the Natural Sciences.
- Sovik, Atle Ottesen. 2011. *The Problem of Evil and the Power of God.* Leiden, The Netherlands: Brill.
- Tillich, Paul. 1967. Systematic Theology, Volume II. Chicago, IL: University of Chicago Press.