Bethany Sollereder

Evolution, Suffering, and the Creative Love of God

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In 1859 Charles Darwin uncovered, in The Origin of Species, *a world that evolves on the basis of natural selection. The natural world is competitive, violent, and careless of the amount of suffering it produces. Yet, Christian theologians identify God as the creator of the evolutionary process. This raises serious theological questions, including "Why would a good God ordain a process that necessarily involves pain, suffering, and death for so many creatures?" This article will explore the theological implications of evolutionary suffering, and begin to ground a theology of evolutionary creation in the love and work of God.*

In 1859, Charles Darwin proposed, in *The Origin of Species,* a radical new idea for how life developed into its various forms. Instead of a comfortable, well-designed world in which everything was specially designed, Darwin proposed a world full of conflict in a cut-throat race for survival. The happy theological systems developed by theologians such as William Paley in his 1802 *Natural Theology*, in which every creature was specifically designed for a harmonious place in nature, were shattered. Theologians were left trying to find a solution to the question of how the good God of love could create through such a violent, competitive, and often ruthless process as evolution.[1] Today, we are still wondering, still working out the implication of Darwin's theory for theology and how we understand the nature and the love of God in light of a creation "red in tooth and claw."

The question of nonhuman animal suffering has, in the last decade, become a topic of increasing interest. The publication in 2008 of the first two book-length treatments of the problem, Michael Murray's philosophical *Nature Red in Tooth and Claw* and Christopher Southgate's theological *The Groaning of Creation,* opened space and set a foundation for a growing discussion.[2] The expanding literature has recently been joined by Nicola Hoggard Creegan's *Animal Suffering and the Problem of Evil*, Trent Dougherty's *The Problem of Animal Pain*, and Ronald Osborn's *Death before the Fall*.[3]

This article will be structured around three questions: What (really) is the problem? Who is to blame? and What is God going to do about it?

What (Really) Is the Problem?

The first distinction to make before we can start in earnest is to distinguish between moral and natural evil. Moral evil—the actions and consequences of sinful action in the world—raises different theological questions and is beyond the scope of this article. Therefore, although the current ecological crisis and modern farming practices cause untold suffering to creatures around the world, I will not investigate them here. To narrow the scope still further, I will not deal

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with human suffering at all, even when that suffering is caused by natural disasters or other natural evils. Humans have unique abilities to respond to suffering in ways unavailable to the nonhuman world, ways that allow for different sorts of justification for human sufferings. We might, for example, say that suffering opens an opportunity for us to draw close to God, or to be transformed by suffering into more-Christ-like forms.[4] Suffering in the nonhuman or prehuman animal world raises unique questions because these justifications are not available, nor can we depend on the free will defense that suffering is due to human evil (a point I will explore later in greater detail).

So, let us begin with the most important question, as Austin Farrer asks: "Poor limping world, why does not your kind Creator pull the thorn out of your paw?"[5] Could God have created a world without the harmful elements of natural disasters, predation, suffering, and death? The answer, if we believe in an omnipotent God, must be "yes." Yet we must also ask, "at what cost?" If we remove these elements of creation, what else is lost?

First, if we conceived of God intervening and preventing all harm that might occur, the logic of a physical universe would soon disintegrate, since nothing could be depended upon to happen. If I jumped from a high tree and a great feather pillow appeared to catch me, or if, when I tripped over a stone, it turned into a marshmallow so that I would not stub my toe, the universe would stop being a place where I could make causally effective decisions, because I would rely upon these interventions continually. Nor could I understand the outcome of my actions.[6]

Quite apart from the necessity for physical regularity (also known as "nomic regularity"), many of the aspects of life that we find so deeply disturbing actually provide necessary functions without which life would be impossible. They are "package deals."[7] Let us take two examples: earthquakes and pain.

Geology: Plate Tectonics and the Renewal of the Earth

Most people are familiar with the basics of plate tectonic theory: the continents and the oceans are all founded upon great plates that make up the earth's crust. When two plates run into each other, one is pushed under, over, or alongside the other causing earthquakes and volcanic activity.[8] We are also familiar with the devastating side effects of these processes, such as the tsunamis they often instigate. Whether it was the 2004 Indian Ocean tsunami, or the Japanese earthquake that caused the Fukushima disaster, we know how destructive plate movement can be.[9] The toll on human and nonhuman life can be extremely high. However, the more information that scientific investigation uncovers, the more we find that these destructive processes are absolutely necessary to life. We can see this in at least three ways.

First, the active recycling of carbon dioxide into the atmosphere through plate subduction leads to a stable temperature and the primary necessity for life: liquid surface water. It is thought that the "one-plate" nature of Mars is one of the main reasons that, although there is evidence of liquid water in the early Martian history, water has not remained; thus life has not had a chance to develop there.[10]

Second, the release and recycling of greenhouse gases such as carbon dioxide into the atmosphere is only helpful if the gases are then trapped near the planet's surface, allowing the surface to retain heat. Earth's magnetic field wards off "a potentially lethal influx of cosmic radiation and solar wind 'sputtering'"[11] that would slowly disintegrate the atmosphere, as it has done on Mars, once again not allowing for the possibility of liquid water. Those same cosmic rays and radiation would also soon extinguish life, if they were to reach the earth's surface.[12] Thus, we are provided an important protective shield by the same processes that drive plate movement.

Finally, the processes of plate tectonics help maintain a stable surface temperature by using up heat produced by the earth's radioactive core and mantle. The importance of the heat used up in tectonic processes is amply demonstrated by its absence on Venus. On Earth, the production and subduction of plates uses at least 90% of the heat produced by the earth's interior radiation. Venus, lacking plate recycling, loses its heat only through mantle plumes[13] and delamination.[14] Since these processes are not nearly as efficient as Earth's tectonic processes, the surface temperatures soar to an average of near 500 °C.[15] At its most extreme, this heat conduction through the crust can cause the surface of the planet to melt (named, understatedly, as a "resurfacing event") as apparently happened on Venus about a billion years ago.[16]

These are some examples of why plate tectonic movement is necessary to the maintenance of life. While earthquakes and tsunamis can have devastating effects, the processes that cause them are absolutely essential to life. As John Lynch asked, "Which would you rather have, a bursting planet or an earthquake here and there?"[17] It seems that there is no other choice if we are to have a rocky planet in a physical universe like ours.[18]

Pain

We might think that a good God should have created a world without pain. However, we find that if we are to live in physical, mobile bodies, we cannot do without pain. There are some who are born without the ability to feel pain, and their life expectancy is hugely reduced; they face massive daily challenges because they do not naturally learn how to avoid injury.[19]

Another example of life without pain is the experience of leprosy patients. When the bacteria *Mycobacterium leprae* invades the body's nerves, the body's defensive response causes inflammation. Unfortunately, nerves are covered tightly within a lipid-protein sheath which does not allow room for swelling. As the pressure increases within the sleeve, the blood supply, which runs alongside the nerves, is cut off, causing the cells to die.[20] Once dead, the nerves do not regenerate and can no longer send pain signals to the brain. All the well-known symptoms of leprosy, such as fingers "falling off," are a result of this inability to feel pain—not as a direct result of the bacterial infection itself. In fact, because the nerves never recover their ability to send pain signals to the brain, the debilitating effects of the disease continue forever, even after the leprosy infection is cured.

The inability to feel pain is not (as the Superman movies would have us believe) the fodder of legends, but the stuff of nightmares. Paul Brand, who spent his life in the vanguard of leprosy research and treatment, was one of the first to discover that it was the painlessness which caused subsequent injury to the patients, not the disease itself. While trying to track each and every injury his patients received, he found that some were waking up in the morning with pieces of fingers and toes mysteriously missing or with large ulcers. For a while, Brand worried that the myth of leper's "bad flesh" might indeed be true. What else could explain these wounds appearing overnight? Finally, he posted an overnight guard and the mystery was solved:

> In the middle of the night a rat climbed onto the bed of a fellow patient, sniffed around tentatively, nuzzled a finger, and, meeting no resistance, began to gnaw on it. The lookout yelled, waking the whole room and scaring away the rat. At last we had the answer: the boys' fingers and toes had not dropped off—they were being eaten![21]

Pain protects us in ways of which we are very rarely conscious. Furthermore, if pain nerves are severed, the ability to feel pleasure is equally impeded. Slowly, those who lack the ability to feel pain begin to regard the offending limb as a mere tool or even a burden. With neither pain nor pleasure, the sense of personal ownership is lost. The body becomes a prison instead of being a gift. Soon, the body is no longer seen as intrinsically part of being human. The body, considered to be of no consequence, is treated either with extreme asceticism (it is evil, and should be heeded as little as possible) or with extreme hedonism (it is temporary, and thus bodily actions have no impact on the eternal soul).[22] Neither of these reflects the Christian understanding of the body, which views the body as an intrinsic part of being human. Since pain plays an important part in claiming ownership of and living well in our bodies, it helps us to be fully human.[23]

The deep irony is that the more we avoid pain, the more we are unable to deal with the small remnants of pain that we do experience. Paul Brand, after a lifetime of working in India and the United States, reflects,

> The average Indian villager knows suffering well, expects it, and accepts it as an unavoidable challenge of life. In a remarkable way the people of India have learned to control pain at the level of the mind and spirit, and have developed endurance that we in the West find hard to understand. Westerners, in contrast, tend to view suffering as an injustice or failure, an infringement on their guaranteed right to happiness.[24]

Pain, once accepted, can become a great ally. If it is rejected, it can tyrannize lives, keeping people from the very happiness that they feel can only come about through its absence.[25]

I have used only two examples to show how the harms of the world are constitutively linked to the goods—are "package deals"—in our lives.[26] Many

more could be found. Even Farrer, who started our enquiry by asking why God does not pull the thorn from the paw of creation, goes on to answer his own question:

> But what sort of a thorn is this? And if it were pulled out, how much of the paw would remain? How much, indeed, of the Creation? What would a physical universe be like, from which all mutual interference of systems was eliminated? It would be no physical universe at all. It would not be like an animal relieved of pain by the extraction of a thorn. It would be like an animal rendered incapable of pain by the removal of its nervous system; that is to say, of its animality. So the physical universe could be delivered from the mutual interference of its constituent systems only by being deprived of its physicality.[27]

The very harms we hate and fear often produce the skills and goods we value. Evolutionary history has shown how the devastations of the past—such as the great extinction events and the development of predator-prey relations—have generated immense amounts of biodiversity and physical values. In the poetic words of Holmes Rolston, the "cougar's fang has carved the limbs of the fleet-footed deer."[28] In light of Farrer's question and the innumerable creative possibilities opened by natural evils, we might be tempted to join with Kierkegaard in saying: "With the help of the thorn in my foot, I spring higher than anyone with feet in the best condition."[29]

In summary, when we ask "What (really) is the problem?" we must conclude that it cannot rest on the mere *existence* of natural disasters or pain or predators. All of these are necessary to the existence of a good and flourishing world with sentient animals. The problem instead revolves around the issues of the extreme suffering of individual creatures, particularly those multitudes of nonhuman animals whose lives are cut off in infancy before they have had any chance to flourish and whose experience of life is predominated by pain, suffering, and neglect.[30] The problem of extreme suffering is further sharpened by the fact that the traditional explanations for human suffering do not apply. We cannot use a free-will defense because nonhuman creatures do not sin. Nor can we use a "vale of soul-making" argument—that the experience of suffering forms robust souls—for nonhuman animals because it does not seem to be the case that they can draw close to God in any willful way in response to suffering.[31] Without these traditional arguments, the comprehensibility of their suffering becomes extremely opaque.

Furthermore, the arguments that the "greater good" is being served by suffering (such as nomic regularity) only take us so far, and it is not usually any consolation to the individual that their life serves a greater purpose if it entails the complete loss of their own chance of flourishing. The white pelican is a species often held up as an example of suffering for the "greater good" because its reproductive cycle involves laying two eggs with the strategy of only raising one chick. The second chick, sometimes called the insurance chick, is pushed out of the nest by its older sibling, only to be ignored by its parents until neglect or a passing predator brings its untimely death.[32] In a small minority of the cases, the first chick dies from some cause and the second is raised, ensuring that at least one offspring will continue into adulthood in each reproductive cycle. How can we think theologically about that second chick whose life is characterized almost entirely by neglect, suffering, and an early death? The rest of this article will focus on this theological development.

Who Is to Blame?[33]

I wrote above that we cannot use the free-will defense because nonhuman creatures do not sin. However, throughout most of Christian history, the free-will defense was used to explain nonhuman suffering by rooting the existence of natural evil in human sin. Calvin, for example, wrote,

> For it appears that all the evils of the present life, which experience proves to be innumerable, have proceeded from the same fountain. The inclemency of the air, frost, thunders, unseasonable rains, drought, hail, and whatever is disorderly in the world, are the fruits of sin. Nor is there any other primary cause of diseases.[34]

However, there is an insurmountable chronological difficulty with this approach: death has been present as long as there has been life, for over three billion years. Predation dates back to the Cambrian period 350 million years ago. Dinosaurs had cancer. Paleontological discoveries show that violence and disease abounded long before humans were around to sin. While humans *are* currently wreaking ecological havoc on the world due to our greed and consumerism, most nonhuman suffering has happened independently of human action. There

have been a few attempts to save the appearances of a theology that maintains both the long history of violence in nature and the full blame of humans for its existence. The most notable of these is by William Dembski, who argues that we should understand the effects of human sin to have been retroactively applied to the creation from the beginning of time.[35] However, a God who would inflict untold suffering on billions of nonhuman animals over millions of years, without any good emerging out of it for the creatures themselves (and only a very indirect benefit for humans[36]), is morally repulsive.[37]

The majority of theologians find the chronological problem of prehuman animal suffering compelling enough to look elsewhere for explanation. How else can we account for the suffering in the evolutionary story? Taking their cue from the traditional story that suffering is a result of sin, several theologians have proposed a prehuman moral agent who could have inflicted such devastation on the world: Satan.

C.S. Lewis wrote in his early work that in light of the long history of nonhuman animal suffering,

> It seems to me … a reasonable supposition, that some mighty created power had already been at work for ill on the material universe, or the solar system, or, at least, the planet Earth, before ever man came on the scene … If there is such a power, as I myself believe, it may well have corrupted the animal creation before man appeared.[38]

Michael Lloyd, Gregory Boyd, Paul Griffiths, and Nathan O'Halloran have all joined Lewis in affirming a Satanic origin for natural evil.[39] While appealing, the solution raises many more issues than it solves. First, God in scripture regularly claims the creation, even the violent creation, as God's own work. In Genesis 1, in Job's divine speeches, and in Psalm 104 (to name a few), the uncontrollable, unpredictable, and even violent nature of the world is held forth as evidence of God's power.[40] Second, God calls the completed creation "very good." If the nonhuman creation was utterly corrupted at some early stage, we might expect divine warning to show up in the human commission in Genesis 1. Instead, we find God approving of creation, calling it "very good," and blessing it. Even if it was not a finished project, we have no evidence that it was corrupted. Finally, we have noted that it is the very competitiveness and strife of the evolutionary process that pressures it into such wonderful creativity. Many of the values of creation are directly attributable to the harms that cause them to arise. If Satan was the originator of the cougar's fang, we would also have to attribute the elegance and speed of the deer to Satan's creative powers, since they directly result from the fang. In the end, we would be left wondering what precisely was left of creation that could be attributed to God.

So, we are unable to point to humans or Satan (or other shadowy spiritual figures[41]) for the existence of natural evil. The responsibility, then, must fall squarely on God's shoulders. God, it seems, has chosen to use an evolutionary process to create the world even though it is replete with suffering, death, and extinction. Why?

Some, as we noted above, have suggested that it is to make a realm in which creatures' choices are truly effective, making things such as physical planning and, more importantly, morality, true possibilities.[42] Others, such as Christopher Southgate, have suggested that evolution involving death, pain, and predation is the only way to develop creaturely selves in a physical environment without constant intervention.[43] It is the "only way" to make a world that makes itself; a world that produces novel and complex creatures. The argument could even be pushed to say that evolution is not only the sole available option to fill the earth, but perhaps it is also the only way to give rise to beings that will one day populate heaven.[44]

From another perspective, I think that there is something of the creativity and respect of love in the evolutionary narrative. Love, by its very nature, will not control the beloved.[45] Where we see controlling behavior in the guise of love, such as a parent who dominates every aspect of their child's life, we recognize that what we see is not, in fact, love, but some form of fear or will to exert power disguised as love. Love allows the other to be him or herself. So when we think about God creating the world in love, we should not be surprised that God gives created beings significant freedom with real consequences. This is a different kind of "only way" argument: it is not rooted in the constraints of physics, the laws of nature, or the limits of physical possibilities,[46] but it emerges out of the necessary self-limitations of love.[47] As John Polkinghorne has argued, God—out of love—made a world with free process, which also means that not every result of the process is the result of divine design.[48] Just as we might intentionally bring a child into the world but then not support some of his or her actions in life, so too, God brought

the world into being but did not specially design, for example, the parasitic Ichneumon wasp whose larvae eat their way out of the bodies of living caterpillars.

However, by limiting the scope of God's design in the world, we wield a double-edged blade: we must say also that God did not specially design the softness of rabbit's fur, the cooperation of symbiotic life, or the grandeur of mountains. Both the attractive and the horrific are results of the same good: free process. The orca who plays with the seal pup, skinning it alive, is expressing its freedom and is being true to its nature as much as the doe who nuzzles her fawn.

Yet, even with the acknowledgment of great freedom, it still seems that a heavy weight of responsibility for the suffering that results from evolution rests on God. If God gives creatures such terrible power that results in so much suffering—power ultimately rooted in God's choice to create a wildly free world—it leads naturally to our third question.

What Is God Going to Do about It?

God's response to the suffering of the nonhuman world can be thought of in three ways: companioning, luring, and redeeming.

Divine Companioning

As the Creator and Sustainer of all life, God is intimately involved in the life of every organism, companioning each creature as it walks, flies, swims, or crawls through life. When Holmes Rolston III reflected on the evolutionary process, he said, "If God watches the sparrow fall, he must do it from a very great distance."[49] But, along with Jay McDaniel and others, I think that this is completely wrong.[50] In every instance, God is with each creature: inspiring its every breath, constantly giving it the power to be, and accompanying it through life. This also means that whenever any creature suffers, God suffers with it, feeling the full extent of its pain.[51] We may think this is a rather impotent response, since God's presence does not seem to lessen any creature's pain, but it does mean that no animal suffers and dies alone, and that God does not volunteer the creation for suffering which God will not also experience.[52]

The difference between Rolston's conception of a distant God and the immanent God of McDaniel is illustrated vividly in the 2001 movie *Shrek*, when Lord Farquaad decides to send knights to rescue the princess Fiona.[53] As he stands on a high balcony looking down at the brave knights, he says, "Some of you *may die* … but that is a risk *I* am willing to take." If God does not somehow suffer with those who suffer, then God becomes a distant Lord Farquaad, willing to send the innocent to the slaughter for the realization of God's own purposes. Instead, we must envision God as the one who walks with, who grieves with, and who comforts a suffering creation. And perhaps it does make a difference: a newborn baby is comforted by a mother's presence long before abstract concepts of "self" or "love" are thought of. So too, the prerational creation may be comforted by God's presence in their suffering, even if they cannot recognize God as its source.

Instead of a distant Lord Farquaad, then, our picture of God's companioning is similar to that of a historical midwife accompanying the labor pains of creation. The midwife cannot take away the pain of the mother, nor even significantly lessen it, but instead she accompanies, encourages, embraces, and sits in solidarity with the suffering (and sometimes dying) mother. Better yet, to adopt a possibly scandalous image from Lady Julian of Norwich, God is the mother who is painfully laboring to bring forth creation.[54] God does not take away creation's pain,[55] but God's presence in creation helps us accept the suffering of creation, even if God's presence does not necessarily alleviate creation's pain or brutality.

Divine Lure

I think that God is also present in what many process theists would call a divine lure to the good. It is an action that complements divine companioning and understands God as active in influencing (though not determining) the outcomes of creation. Now, for process thinkers who embrace panpsychism or panexperientialism,[56] God lures all entities toward good and harmonious relationships: for them, evil occurs only when and where the actual entities of creation choose to resist that divinely inspired call toward the good—choosing violence and conflict instead.[57]

I am not as confident as these thinkers that predator-prey relationships ought not to exist or that a natural process such as an earthquake is a result of the resistance of earthly entities to the lure of God toward the good. I would not want to extend the call of God or the ability to respond to God so far down the scale of being, yet I do think that there is a sense in which all living creatures are called by God into participation

in the gift of life, into their own unique place in the history of the world.

Each creature's life and death ripples out into the ongoing streams of existence. God calls creatures toward participation in life, and as Southgate proposes, toward moments of creaturely self-transcendence.[58] In nonhuman animals, this self-transcendence may mean the moment of trying a new food source, or pushing one's physical abilities to a new limit, or developing a new tool. In humans, it may mean all these things as well as the lure toward love and conscious relationship with God. The lure of God toward life means that creatures will continually become more complex and that the interrelationships between various life forms will become more elaborate. It is the pattern that we have seen throughout evolutionary history: prokaryotic cells become eukaryotic, single-celled organisms join colonies, colonies become multicellular organisms, organisms specialize into diverse and complex organisms, which in turn promote complex ecological relations. Even when cataclysmic devastations threaten to wipe out life on Earth, each time life has bounced back and displayed even more diversity and complexity than before. The divine lure means that all animal suffering will be drawn toward good ends.

Still, we must keep a single-minded focus on the fact that the experience of life is often, in Thomas Hobbes's vivid words, "Solitary, poor, nasty, brutish, and short" for many of life's participants. There is a need for something more than simply pointing out that life's overall arc is toward richer interrelationship. How are we to account for the suffering of the individual? We come, then, to the possibilities of redemption.

Divine Redemption

It is in redemption more than in any other doctrine that the possibility for explaining the suffering of individuals arises. I propose three different models: immediate, eschatological, and dual-aspect.

Immediate redemption

The first type of redemption, advanced by Holmes Rolston III, is redemption played out immediately in the lives of others: that is, because of the way ecosystems work along with the exchange of life and death, the death of a creature is never wasted.[59] Most of the lives cut short are brought to an end because they are eaten by something else—the lives lost are directly involved in the flourishing of another. Even when they are not directly eaten, the energy and materials stored in their bodies are eventually recycled and reused by other organisms. How are the evils of death and painful suffering accounted for? According to Rolston, when we take the story of ecosystems and translate it "into theological terms, the evils are redeemed in the ongoing story."[60] Wherever we see harmonies in nature, balanced ecosystems, or the development of new and more complex species, we see a sort of redemption for the creatures who died, because that reality could never have happened without their death. Still, this model is a little hard on the individuals who experience no redemption in and of themselves.

Eschatological redemption

A second type of redemption is what Jay McDaniel calls "Pelican Heaven": the idea that the nonhuman individuals who have never had a chance to flourish will be redeemed by a new life in heaven where they will be able to experience all the things that they could not have here.[61] New life is not only for humans, but also for all sentient creatures who have interests in pleasure and pain avoidance—essentially, those with a sense of self. For McDaniel, however, this heaven is particularly for those who have lost the chance to flourish here on Earth.[62] Pelican Heaven is a compensation for when the risk of a free creation causes an unjust amount of suffering for an individual.

Now, there is little in the history of theology or philosophy to directly endorse the idea of a heaven for nonhuman animals. The Bible contains a few hints that the redeemed world order will include more than simply humans: Isaiah 11 includes all sorts of animals, from wolves and leopards, to cows and lambs, in its vision of the peaceable kingdom. Romans 8 describes the whole creation being set free from the bondage to decay, caught up in redemption with humans. Also, on the topic of nonhuman resurrection, opinions of theologians have varied throughout time. Aquinas did not think that animals had the capacity for life beyond physical death.[63] John Wesley not only included the nonhuman creation in the resurrection, but thought that nonhuman animals would also have increased cognitive capacities (on the level of human intelligence) so that they could experience resurrected life and praise God with self-awareness.[64] While there may not be direct scriptural warrant for the resurrection of the nonhu-

man creation, I think that reflection on the nature of the love and generosity of God would tip the scales toward affirming the resurrection of the nonhuman creation. After all, because of the great power of God, there can be no worries that there would not be enough resources or space in the new heavens and new earth to accommodate the whole of the nonhuman creation. And if God's love and care extends beyond the human creation, as the divine speeches in Job and Psalm 104 strongly argue, then it is hard to imagine God simply abandoning so much of creation to annihilation or nothingness.

Dual-aspect redemption

So far, the models of redemption have polarized redemption into being either immediately present as in Rolston's ecological model, or distantly eschatological, as in McDaniel's Pelican Heaven. A third model combines the insights of both these models into a dual-aspect redemption. Rolston focused on the fact that suffering is often generative and life giving for those beyond the sufferers themselves. McDaniel proposed that even nonhuman individuals will have a place in the new creation. The idea I propose is that the story of each creature, both in its flourishing and in its suffering, is combined with all the other narratives of creation in such a way as to make an overarching narrative that reflects back to the glory and honor of the individual.

The image I use for redemption is that of a photo mosaic. Most of us have seen the computer-generated images in which a picture is made up of hundreds or thousands of pixels, each of which is a full picture itself. Our lives, and the lives of all living creatures, are like those pixel-pictures. Each is a whole in itself, unique and necessary. No other picture could bring the exact arrangement of light, shadow, and color that each picture contributes. God arranges the stories one against another in order to bring out larger redemptive patterns: an image of universal harmony. Nor is the construction limited to two levels: each smaller picture could itself be a mosaic, and each pixel of that smaller picture a mosaic as well, and so on. We end up with what Eleonore Stump calls "nested fractal narratives," a pattern in which each scale of measurement contributes to all the other levels, and where self-similar patterns (of redemption) appear at each level.[65] And because each pixel or narrative is a necessary component of the whole, the beauty, harmony, and glory of the whole reflects back onto each individual part.

The photo mosaic of nested fractal narratives holds together two major theological emphases: freedom and meaning. Each creature's life is a photograph, full of its own meaning, open to the creature's own contribution. This differentiates my model from a basic mosaic or a tapestry model, in which the component pieces do not hold any meaning on their own.[66] (A thread is much like any other thread, and a small piece of colored stone does not tell much of a story until it is part of the mosaic.) Creatures build their own life stories in freedom, with their own meaning in light of their environments and relationships, but the final arrangement of those pieces in the great mosaic of redemption comes from God. That great picture will pick up the photographs that creatures have made with their lives—and is thus responsive to the freedom of creation—but it will also arrange them in a new and unforeseen pattern, making new and positive meanings out of old, and sometimes extremely negative, events. The new creation is an act of *creation*. There is no preset pattern that things have to accommodate to fit into a predetermined pattern. Rather, the multileveled, nested, fractal narratives of Earth's history grow and are responded to by God in redemption.

What sort of example might illustrate the concept of nested fractal narratives? We might think of dinosaurs.[67] Sixty-five million years ago a meteorite hit the Yucatan peninsula, causing widespread climate change to which the dinosaurs could not adapt. They went extinct. Yet, the ecological niches freed by the extinction of the dinosaurs were soon taken up by one of the most entrepreneurial forms of life: mammals. One branch of those mammals evolved into humans. Eventually humans began to compose music, create art, and build flying machines. How does this link back to the dinosaurs? Depending on how we build our narrative structure, we can see direct links between the extinction of dinosaurs and the soaring music of Bach and Mozart. Without the extinction of the dinosaurs, the universe may never have produced violin concertos or cello suites. I propose that in the new creation, the glories of human achievement will be reflected back on those nonhuman individuals who suffered and died and went extinct and thus made human achievements possible. The individual will have a share in the glory of the whole to which they contributed, however distantly, and this new meaning for the individual will contribute to the beauty of the whole picture. Perhaps, as Wesley imagined, this sharing in glory will require

an increase in the capacities of creatures so that they can receive the gift of redemption fully.

An analogy to the concept of later works reflecting on previous lives may be found at the end of Hebrews 11. The writer, after listing the long line of "heroes of the faith," goes on to say, "Yet all these, though they were commended for their faith, did not receive what was promised, since God had provided something better so that *they would not, apart from us, be made perfect*."[68] The writer then launches into "Therefore … let us also lay aside every weight and the sin that clings so closely, and let us run with perseverance the race that is set before us …"[69] followed by the instructions on righteous living. There is some implication that without the present race being run well by the first-century hearers, the saints of the past cannot be made perfect.

The stories of the ancient heroes of the faith are somehow completed by the ongoing stories of God's people. I would extend the same idea to all of creation: all of creation is completed by the ongoing history of the universe. God—both in the ongoing narrative of living organisms, and also eschatologically in the final wrapping up of all things—will so arrange the narratives of pleasure and suffering, of loss and fulfilment, that each life will contribute to the fullness of every other life in such a way that redemption will be found everywhere. Even in the hardest cases of seemingly senseless suffering, we can listen to what Thomas Merton said, "The grace of Christ is constantly working miracles to turn useless suffering into something fruitful after all."[70] In the redemptive work of God, all the suffering that occurred because of the freedom given in love will be healed and clothed in glory.[71]

Divine companioning, divine lure, and divine redemption represent just three of many possible ways in which God is active in the world; three possible ways in which God takes responsibility for and responds to the suffering of creation. There may be many more. In light of biblical descriptions of divine action, which stretch from creation to Incarnation, from wrestling with Jacob in the mud to empowering servants to speak boldly, it would seem a false step to limit the ever-surprising God to one or two courses of action. The character of divine action can be more precisely defined: God acts in perfect love. What that looks like in practice, however, will be as unique as the creature who is loved.[72]

Conclusions

We have come a long way in a short time. We began by asking what the problem of nonhuman animal suffering really is. We saw that pain, suffering, and natural disasters are necessary parts of the "package deal" of creation. The most difficult case was refined to the individual whose life was cut off before any significant flourishing could be had, or when a life was full of nonbeneficial pain. The problem was made more difficult in the case of the nonhuman animal which could not avail of the classic argument that death and suffering are a result of sin, nor could suffering be a pathway to greater union with God.

Our second question asked who is to blame for such a state of affairs. For biblical, philosophical, and chronological reasons, we saw that neither human sin nor demonic forces could explain nonhuman suffering satisfactorily. God, then, must be recognized as responsible for the groaning of creation.

In answer to our third question of how God is at work responding to the suffering of creation, we explored the concepts of divine companioning, divine lure, and the work of redemption. Redemption was seen to incorporate both immediate and eschatological elements, and the image of a fractal mosaic was used to illustrate how the life of a seemingly inconsequential part of creation contributed to the larger-scale patterns of redemption, and how the glory of the whole is then reflected back onto the individual.

All of these considerations need to be held together when we theologically evaluate a circumstance of nonhuman animal suffering. We can find, to our surprise, that even the competitive, violent, and suffering world of Darwinian evolution can reveal the love and grace of God. ✞

Notes

[1]For those interested in some of the theological responses in Darwin's day, see Bethany Sollereder, "The Darwin-Gray Exchange," *Theology and Science* 8, no. 4 (2010): 417–32.

[2]Michael J. Murray, *Nature Red in Tooth and Claw: Theism and the Problem of Animal Suffering* (Oxford: Oxford University Press, 2008); Christopher Southgate, *The Groaning of Creation: God, Evolution, and the Problem of Evil* (Louisville, KY: Westminster John Knox Press, 2008).

[3]Nicola Hoggard Creegan, *Animal Suffering and the Problem of Evil* (Oxford: Oxford University Press, 2013); Trent Dougherty, *The Problem of Animal Pain: A Theodicy for All Creatures Great and Small* (New York: Palgrave Macmillan, 2014); Ronald E. Osborn, *Death before the Fall: Biblical Literalism and the Problem of Animal Suffering* (Downers Grove, IL: InterVarsity Press, 2014).

[4]Eleonore Stump's *Wandering in Darkness: Narrative and the Problem of Suffering* (Oxford: Clarendon, 2010) is a good example of a Thomist theodicy that argues human suffering is allowable along these lines, as well as the classic soul-making argument advanced by John Hick in *Evil and the God of Love* (Houndmills, UK: Palgrave Macmillan, 2007).

[5]Austin Farrer, *Love Almighty and Ills Unlimited: An Essay on Providence and Evil* (London: Collins, 1962), 51.

[6]Philip Clayton and Steven Knapp, *The Predicament of Belief: Science, Philosophy, Faith* (Oxford: Oxford University Press, 2011), 47. C.S. Lewis and Michael Murray also point out that there would be no place for moral development, since people could never make effective choices to hurt one another. However, this is of major benefit to human beings only, and does not tell us why (without gross anthropocentrism) God would have subjected billions of nonhuman animals to pain and suffering. C.S. Lewis, *The Problem of Pain* (New York: HarperOne, 1996), 24; Murray, *Nature Red in Tooth and Claw*, 130–65.

[7]Niels Gregersen, "The Cross of Christ in an Evolutionary World," *dialog: A Journal of Theology* 40, no. 3 (Fall 2001): 197–99; Denis Alexander, *Creation or Evolution: Do We Have to Choose?* (Oxford: Monarch, 2008), 279–80; see also the discussion on constitutive good-harm analyses in Christopher Southgate and Andrew Robinson, "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*, ed. Nancey Murphy, Robert J. Russell, William R. Stoeger, SJ (Vatican City: Vatican Observatory Foundation, 2007), 67–90.

[8]James Monroe and Reed Wicander, *The Changing Earth: Exploring Geology and Evolution* (Belmont, CA: Thomson Brooks/Cole, 2006), 28.

[9]A note is in order about the word "destructive." In this case, I mean destructive from a biocentric point of view. Plate movements cause damage and death to living organisms. Geologically, however, volcanic activity is constructive, as are plate boundaries where mountains form (though these orogenic events destroy the previously existing environment).

[10]Wanda L. Davis and Christopher P. McKay, "Origins of Life: A Comparison of Theories and Application to Mars," *Origins of Life and Evolution of the Biosphere* 26 (1996): 67–69. None of the other terrestrial planets have plate tectonics.

[11]Peter Ward and Donald Brownlee, *Rare Earth: Why Complex Life is Uncommon in the Universe* (New York: Copernicus, 2004), 194.

[12]Ibid., 212–13.

[13]Mantle plumes are "stationary columns of magma, originating deep within the mantle … [which] slowly rise to the surface to create volcanoes" (Monroe and Wicander, *The Changing Earth*, 48).

[14]Delamination is a process by which the bottom of the lithosphere sinks into the mantle.

[15]Kent C. Condie, *Plate Tectonics and Crustal Evolution*, 3rd ed. (Oxford, UK: Futterworth-Heinemann, 1997), 234. There are other reasons for the high surface temperature, but lack of heat recycling is thought to be a main contributing factor.

[16]Ward and Brownlee, *Rare Earth*, 215.

[17]John Joseph Lynch, SJ, "In Defense of Earthquakes," quoted in Eric R. Swanson, *Geo-Texas: A Guide to the Earth Sciences* (College Station, TX: Texas A&M University Press, 1995), 74.

[18]There are, of course, many who want to speculate about whether we could imagine a universe with completely different physical properties, dimensions, and so on, in which a different combination might allow for the same values with less suffering. However, these speculations are largely unhelpful. First, they can never account for every variable, and often (as with earthquakes) we might try to eliminate one variable only to find that many other variables are connected in ways that we did not anticipate. Before we knew the benefits of plate tectonics, earthquakes seemed an unnecessary evil, easily speculated out of existence with great benefit. Since we do not have a full understanding of this universe, it is unlikely that we will be able to speculate constructively about other possible universes, though some have tried. See examples in Robert John Russell, "Physics, Cosmology, and the Challenge to Consequentialist Natural Theodicy," in *Physics and Cosmology*, 109–30. Second, such speculation serves as a distraction from more fruitful work on tangible elements of theodicy. There is no way to prove or disprove another possible physical configuration, and it can be used as an evasion of the issues. Better, then, to deal directly with the universe we know.

[19]Known as congenital insensitivity to pain, or congenital analgesia, the condition is due to a specific genetic mutation. James J. Cox et al., "An *SCN9A* Channelopathy Causes Congenital Inability to Experience Pain," *Nature* 444 (December 14, 2006): 894–98.

[20]Paul Brand and Philip Yancey, *The Gift of Pain: Why We Hurt & What We Can Do about It* (Grand Rapids, MI: Zondervan, 1993), 152.

[21]Ibid., 127.

[22]Both of these were found in ancient Greek thought, among the Stoics and the Epicureans respectively. The Gnostics, another philosophy which competed with early Christianity, sought to escape the body and the flawed material creation, deeming them to be the results of the creation attempts of a lesser god (demiurge).

[23]It is interesting to note that if the lepers in the Gospel accounts had real leprosy (and not simply any sort of skin disease), then Jesus's healing actually restored their ability to feel pain.

[24]Brand and Yancey, *Gift of Pain*, 187–88.

[25]This does not mean that there is no gratuitous or unnecessary pain in the world. There is, as I go on to note.

[26]See note 7 above for more scholarship on this concept.

[27]Farrer, *Love Almighty and Ills Unlimited*, 51.

[28]Holmes Rolston III, *Science and Religion: A Critical Survey* (West Conshohocken, PA: Templeton Foundation Press, 2006), 134.

[29]Søren Kierkegaard, *Journals and Papers*, quoted in Abraham Sagi, *Kierkegaard, Religion, and Existence: The Voyage of the Self* (Atlanta, GA: Rodopi B.V., 2000), 106–107.

[30]Southgate, *Groaning of Creation*, 48–50.

[31]For the classic statement of the vale of soul-making argument, see Hick, *Evil and the God of Love*.

[32]Jay B. McDaniel, *Of God and Pelicans: A Theology of Reverence for Life* (Louisville, KY: Westminster/John Knox Press, 1989), 19–21.

[33]For those theologians objecting right now: I realize that this is the wrong question. Sometimes even the wrong question can get you to the right place, as I think happens here.

[34]John Calvin, *Commentaries upon the First Book of Moses Called Genesis* (1554) in *Calvin's Bible Commentaries: Genesis,* Part 1, trans. J. King (1847; Forgotten Books,

2007), 113, http://www.amazon.co.uk/Calvins-Bible-Commentaries-Genesis-Forgotten/dp/1605062359.

[35]William Dembski, *The End of Christianity: Finding a Good God in an Evil World* (Nashville, TN: B&H Publishing, 2009).

[36]Dembski argues that the benefit granted to humans is that the corruption of the world teaches them of their own need for salvation.

[37]For a further critique, particularly of the anthropocentrism of the approach, see Christopher Southgate's review of *The End of Christianity* by William A. Dembski, in *Reviews in Science and Religion* 60 (November 2012): 43.

[38]Lewis, *The Problem of Pain*, 138.

[39]Michael Lloyd, "Are Animals Fallen?," in *Animals on the Agenda*, ed. Andrew Linzey and Dorothy Yamamoto (London: SCM, 1998), 147–60; Gregory Boyd, *Satan and the Problem of Evil: Constructing a Trinitarian Warfare Theodicy* (Downers Grove, IL: InterVarsity, 2001); Gregory Boyd, "Evolution as Cosmic Warfare: A Biblical Perspective on Satan and 'Natural Evil'," in *Creation Made Free*, ed. Thomas Oord (Eugene, OR: Wipf & Stock, 2009), 125–45; Paul Griffiths, "Impossible Pluralism," *First Things* (June/July 2013): 44–48; Nathan W. O'Halloran, SJ, "Cosmic Alienation and the Origin of Evil: Rejecting the 'Only Way' Option," *Theology and Science* 13, no. 1 (2015): 43–63.

[40]See Terence E. Fretheim, *Creation Untamed: The Bible, God, and Natural Disasters* (Grand Rapids, MI: Baker Academic, 2010).

[41]Celia Deane-Drummond, "Shadow Sophia in Christological Perspective: The Evolution of Sin and the Redemption of Nature," *Theology and Science* 6, no. 1 (2008): 13–32.

[42]See note 6 above.

[43]Southgate, *Groaning of Creation*, 29.

[44]Ibid., 90. This claim helps deal with the question, "Why didn't God just make heaven first?"

[45]W. H. Vanstone, *Love's Endeavour, Love's Expense: The Response of Being to the Love of God* (London: Darton, Longman, and Todd, 1977), 45–49.

[46]Southgate, *Groaning of Creation*, 47–48.

[47]I certainly want to invoke all the notions of kenotic creation advanced by Jürgen Moltmann, Ian Barbour, Keith Ward, and the many other authors contained in the volume *The Work of Love: Creation as Kenosis*, ed. John Polkinghorne (Grand Rapids, MI: Eerdmans, 2001).

[48]John Polkinghorne, *Science and Providence: God's Interaction with the World* (West Conshohocken, PA: Templeton Foundation Press, 1989), 77. This is where, once again, the notion of blame fades away.

[49]Rolston, *Science and Religion*, 140.

[50]McDaniel, *Of God and Pelicans,* 19–20.

[51]For a philosophical and theological defense of God's ability to suffer, see Paul S. Fiddes, *The Creative Suffering of God* (Oxford: Clarendon, 1988), 46–76.

[52]See Christopher Southgate, "Does God's Care Make Any Difference? Theological Reflection on the Suffering of God's Creatures," in *Christian Faith and the Earth: Current Paths and Emerging Horizons in Ecotheology*, ed. Ernst M. Conradie, Sigurd Bergmann, Celia Deane-Drummond, and Denis Edwards (London: Bloomsbury T&T Clark, 2014), 110–12.

[53]*Shrek*, directed by Andrew Adamson and Vicky Jenson (Glendale, CA: DreamWorks, 2001), DVD.

[54]Julian of Norwich, *Revelations of Divine Love* (New York: Penguin Classics, 1998), chapter 57. Cf. Marilyn McCord Adams, "Julian of Norwich: Problems of Evil and the Seriousness of Sin," *Philosophia* 39, no. 3 (2011): 445.

[55]I intentionally use "does not" rather than "cannot" here. It is not that God lacks the power to act, as process theists or as Thomas Oord would claim. I think that God does not regularly do so because those interventions would destroy the integrity of the "otherness" of creation. I have no problem, however, with God doing so on occasions when such action is deemed necessary by God, although I do not think that there are such occasions in the nonhuman world. I therefore do not ascribe to the "not-even-once" principle of Philip Clayton and Stephen Knapp.

[56]Ian G. Barbour, *Religion and Science: Historical and Contemporary Issues* (San Francisco, CA: HarperCollins, 1997), 288; David Ray Griffin, *God, Power, and Evil: A Process Theodicy* (Louisville, KY: Westminster John Knox Press, 2004), 248–49; David Ray Griffin, "Panexperientialist Physicalism and the Mind-Body Problem," http://www.anthonyflood.com/griffinpanexperientialism03.htm.

[57]John B. Cobb Jr. and David Ray Griffin, *Process Theology: An Introductory Exposition* (London: Westminster Press, 1976), 53. "Actual entities" in process thought, however, are not individuals in the usual sense, but rather are processes, or occasions.

[58]Southgate, *Groaning of Creation*, 62–66.

[59]Holmes Rolston III, "Does Nature Need to be Redeemed?," *Zygon* 29, no. 2 (June 1994): 205–29.

[60]Ibid., 213.

[61]McDaniel, *Of God and Pelicans,* 41–47.

[62]Christopher Southgate agrees, and says that the problem is lessened for creatures who do not suffer. Those creatures might still have eternal life, but not as a type of compensation. Southgate, *Groaning of Creation*, 84–85.

[63]Paul Griffiths, "What Remains in the Resurrection? A (Broadly) Thomist Argument for the Presence of Nonhuman Animals in Heaven" (Aquinas Lecture, Blackfriars, Cambridge, January 31, 2013).

[64]John Wesley, "The General Deliverance: Sermon 60," http://www.umcmission.org/Find-Resources/John-Wesley-Sermons/Sermon-60-The-General-Deliverence.

[65]Stump, *Wandering in Darkness*, 219–26, 466–67.

[66]Augustine, for example, used the idea of a mosaic. Philip Tallon, *The Poetics of Evil: Toward an Aesthetic Theodicy* (Oxford: Oxford University Press, 2012), 125.

[67]See a longer treatment in Bethany Sollereder, "The Purpose of Dinosaurs: Evolutionary Extinction and the Goodness of God," *The Christian Century* 130, no. 20 (2013), http://www.christiancentury.org/article/2013-09/purpose-dinosaurs.

[68]Hebrews 11:39–40, NRSV. Italics mine.

[69]Hebrews 12:1, NRSV.

[70]Thomas Merton, *No Man Is an Island* (Tunbridge Wells, UK: Burns & Oates, 1955), 80.

[71]Nor do I think that the redemption will be limited to those creatures who suffer. Redemption happens because "all things" are created by Christ, held together by him, and reconciled to God through him (Col. 1:15–20). I think that the new creation will include all creatures who are loved by God … which would be all creatures.

[72]In describing divine action, then, our compassionate imagination—rather than our logic—may be the more reliable guide.