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Science and Redemption: The Future of Creation

At the Center for Theology and the Natural Sciences (CTNS) in Berkeley, California, we look for both consonance and dissonance between scientific claims and theological claims. My colleague and friend, Robert John Russell, has on repeated occasions demonstrated the consonance between Big Bang cosmology and the biblical account of creation; and he has shown the dissonance between the biblical prophecy of a new creation and physical cosmology.[1] On the one hand, what natural science tells us about the origin of the universe seems consonant with Christian and Jewish theologies of creation, even creation out of nothing, creatio ex nihilo. On the other hand, scientific prognostications of the future of the universe which ends in either a freeze or fry scenario – either a collapse to a hot center or an everlasting expansion into frozen equilibrium – flatly contradict the New Testament promise of a renewal of all things in the new creation. We must take on board both consonance and dissonance when pressing our agenda: creative mutual interaction between science and theology, or CMI for short.

In what follows we will give our attention to the dissonance: the future of creation. The dissonance in this case is not due to what Ian Barbour calls the "Independence" model of the relationship between science and religion,[2] or due to what I call the "Two Language" model.[3] The dissonance regarding the future of the universe is not due to a model, according to which science and theology speak different languages or go about their work independently. Rather, the dissonance is the result of different sources of knowledge. Scientific cosmology prognosticates about the future based upon its observations of the history of nature thus far and speculations of what to expect based upon known natural

1 Russell, Robert J., *Cosmology from Alpha to Omega: The Creative Mutual Interaction of Theology and Science* (Fortress Press, 2008) and Time in Eternity: Pannenberg, Physics, and Eschatology in Creative Mutual Interaction (University of Notre Dame Press, 2012).

2 Barbour, Ian G., *Religion and Science: Historical and Contemporary Issues* (Harper San Francisco, 1997), 84–89.

3 Peters, Ted, "Science and Theology: Toward Consonance," in *Science and Theology: The New Consonance*, ed. Peters, Ted (Harper San Francisco/Westview, 1998), 17.

processes. Theological cosmology, in contrast, relies upon a divine promise, namely, the promise that God plans a transformation and renewal of all that has hitherto existed. This is the difference.

The theologian may call upon the scientist for an expanded understanding of natural processes, to be sure. Yet, this will not suffice for theological knowledge. At the basis of theological speculation is the historical event of Jesus' Easter resurrection and the accompanying New Testament promise that this is but a foretaste of a future for all of reality.[4] From the point of view of the theologian, scientific explanations obtain for the universe as we know it today, for the present creation; but the ultimate future of creation will include a redemptive power which is not included in scientific prognostications.

In the tradition of Augustine and Anselm, we think of theology as faith seeking understanding. The picture of the universe painted by science aids in the expanded understanding theology seeks. But, the point of departure for the theologian is faith and faith's foundation in special revelation.

At CTNS we frequently employ the image of the bridge to depict our understanding of the relationship between science and theology. Typically, the traffic goes one way: from science toward religious reflection. Might the traffic go the other way as well: from theological reflection toward science? When the traffic goes both directions, we have CMI, creative mutual interaction. In what follows, I'd like to follow the traffic from theology in the direction toward science. I'd like to precipitate interaction, but certainly not a head on collision.

How might the theologian expand our understanding of the divine promise for a new creation in light of the picture of physical reality painted by the physical sciences? I will try to answer this question in a series of theses. One theme will become quickly evident, namely, my own conflation of creation with redemption. The promise of new creation takes priority over the present creation, in my interpretation; and I would like to explore what this could mean in the context of the existing worldview so influenced by scientific assumptions and methods.

4 "On the basis of the biblical witnesses to the resurrection [theologians can] go a long way with the conditions of certainty and rationality set by the exact sciences." Welker, Michael, "Resurrection and Eternal Life: The Canonic Memory of the Resurrected Christ, His Reality, and His Glory," in *The End of the World and the Ends of God: Science and Theology on Eschatology*, ed. by Polkinghorne John and Welker, Michael (Trinity Press International, 2000), 281.

Retroactive Ontology

Because this is a report on CTNS research and publication over time, I must begin with a rather decisive assumption. I work with an assumption that for many seems counter-intuitive. Yet, I hope as the paragraphs whiz by, you the reader will see the coherence that this assumption yields. Here it is: the power of being works retroactively from the future, from God's creative and redemptive future.[5]

The New Testament promise is this: all things will be transformed at point omega (to borrow a term from Teilhard de Chardin). If this is our expectation, then just what is the ontological status of all things right now? Whatever things are, they will not remain as they are. Nothing remains the same. Nothing avoids undergoing change. This is empirically observable. We have long discerned that change involves deterioration, dissolution, death, and dissipation. Change may also incorporate temporary advancements in creativity, to be sure; but creativity will peak and then decline as well. So, process and change and even decline is a given. What can we expect to be the effect of omega?

Perhaps we can say that nothing in our present reality has attained its final state. Nothing has attained is final definition. Everything is subject to routine process and modification; and everything is subject to total redefinition at the coming of omega, God's eschatological transformation. Omega, then, becomes that which determines reality, that which defines who we are and what all things are.

Because God is gracious, according the Christian claim, omega will be different from ordinary change. Ordinary change is associated with disease, death, and disappearance; and in the case of evolutionary biology, extinction. Our gracious God promises healing, redemption, and renewal. We can expect omega to provide transformation, salvation, and eternal definition. The meaning of our existence and self-understanding today is contingent on our transformation in the future. Our final future will retroactively transform who we are today. It will determine who we had been as we anticipated who we would become.

I would like to call this line of thinking retroactive ontology. The fundamental insight is that our being is determined by, and defined by, our future. The transformed reality promised by God is the ground for all other reality that anticipates it. One important implication is this: creation is contingent on transformation.

5 For a fuller exposition of these theses, see my previous work: Peters, Ted, *Anticipating Omega: Science, Faith, and Our Ultimate Future* (Vandenhoeck & Ruprecht, 2006).

The meaning and even being of the past is contingent on its future. God's omega redefines—actually defines—all that has gone before. Who we are now is dependent on who we will be at omega.

In order to explicate this constructive proposal and draw out some of its implications, I would like to set forth a series of theses. In the explication, I will at points refer to understandings of the natural world as changing. Nature is malleable. Nature has a history; and it has a future. What we can see in nature is contingency; what we cannot see without looking through theological lenses is that the decisive contingency is God's promised action at omega. Connecting scientific perception with theological vision will be part of faith seeking understanding.

Thesis 1. God creates from the future, not the past.

This thesis – "God creates from the future, not from the past" – may seem to fly in the face of common sense. As we look around at the objects in the room, we recognize that each one either grew or was manufactured. Should we investigate, we could find out where and when in time each item came into existence. Before that time, there was no such thing. Even the plants in the room came from seeds. Similarly, each one of was born once. Before our birth, we did not exist. So, common sense would place the creation of things in the past. What we see daily is the result of past creativity.

In common parlance, when we think of the cause and effect nexus of finite events, we place the cause in the past and the effect in the present. What exists in the present is the result of past causes, it appears. When we think of the creation of the world, then, we look to the past. We look to the arche, to the beginning, to the point of origin. We look backwards to alpha. What we find back at alpha we call genesis. Common sense places creation at genesis.

Is such common sense exhaustively explanatory? I don't think so. Let us look once again, a bit more closely. Just what does it mean to be, to have existence? Can we exist without a future? No. Without a future, we are not. If someone takes away our future, we drop from existence into non-existence. This is what death is, the loss of our future.

Our first thesis has two corollaries, the first of which is this: To be is to have a future. If this is the case, then the way God gives being is to give a future. Each moment, God gives the cosmos the next moment. God is moment by moment giving to all of realty its future. Without this future-giving on the part of God, all of reality would freeze up and cease. [NRS] Romans 4:17b God "gives life to the dead and calls into existence the things that do not exist."

The second corollary is this: the first thing God did for the cosmos was to give it a future. Back at the beginning, God called the universe from nothing into something by bestowing a future that set reality on the course of historical becoming. By creation, we refer to God's gracious gift of futurity. And moment by moment with unceasing faithfulness God continues to bestow a future.

In this moment by moment future-giving God bestows a future in two ways: by calling the world into existence plus, curiously, by allowing it to drop back into non-existence. Not only does God provide physical reality with its existence, that very existence is characterized by openness, contingency, and even freedom. This means that God's future-giving is both positive and negative. It is positive in that God is the ground of being, the one who protects what is now from ceasing to be. God's work is also negative [negating of the past], in that by giving a new future God releases the present from the grip of the past. Contrary to common sense, past causes do not hold the present moment in the grip of exhaustive determinism. The present moment is open to change, open to what is new. This is because God liberates the present from the oppression of the past. New things can happen because God prevents the past from overpowering the present.

In this way God's future-giving is what makes both contingency and freedom possible. The course of natural events is subject to contingency—that is, events in nature are not exhaustively predictable. Despite the determinism of the laws of nature, natural history does not operate like a machine. New and unpredictable events happen. Then, when we turn to the course of human events, we take a giant step beyond contingency. Human actions are not predictable because they are freely determined. The human reality adds a subjective self that envisions the array of potentials and then makes a conscious decision to actualize some and not others. The openness of the future is the condition that makes freedom possible.

Thesis 2. The concept of creation out of nothing (creatio ex nihilo) should be combined with continuous creation (creatio continua).

Although the opening verse of Genesis does not state unequivocally that God creates the material world out of nothing, this has become an indispensible assertion in Christian theology. Creatio ex nihilo is a conceptual explication of what theologians believe the biblical symbols are telling us. The point of this thesis is that creatio continua is an appropriate complement to creatio ex nihilo.

"God is continuously creating," wrote Arthur Peacocke. "God is semper Creator...the scientific perspective obliges us to take more seriously and concretely than hitherto in theology the notion of the immanence of God as Creator – that God is the Immanent Creator creating in and through the processes of the natural order."[6]

The act of drawing the world from nonbeing into being is not limited to a once-for-all event in the past. God is doing it right now. Without God's vigilant activity as what we call the primary cause, the world would immediately cease to exist and we would never know the difference. Moment by moment in a continuous temporal flow, God is drawing the world into being and protecting it from falling into nonbeing; and this accounts for what previous theologians thought to be God's sustaining or preserving work. Rather than preserving a creation already complete, I view God's creative work as ongoing; it is yet to become complete in the eschatological future. Right now, we creatures are on the way to becoming who we will be. So also is the entire creation still under construction, so to speak, yet to be completed and yet to be judged "very good."

Thesis 3. God's creative action within nature and within history is derivative from the divine act of redeeming and creating the whole of the cosmos.

When some theologians employ the term creation, they limit creation to a single act that happened just once a long time ago. In contrast, I think of creation as a single event incorporating the whole history of the cosmos, including but not limited to human history. Although we mistakenly think of God's creation as a once-upon-a-time event in the past, we unknowingly experience God's creative work as a constant durative process. Each moment of our lives God is drawing our personal reality out of the nonbeing of the past into the actual existence of the present moment, while maintaining a destiny for us, an as-yet-unrealized purpose which will become realized only in the consummate future.

This concept of creation requires a holistic model of reality. Included in the holistic model is the notion of downward causation. Whereas in upward causation the parts alter one another and the whole; in downward causation the whole

6 Peacocke, Arthur, *Theology for a Scientific Age* (Fortress Press, 1993) 105, Peacocke's italics.

alters the parts by incorporating their participation in the dynamics of the whole. "Top down causality...must imply that the nexus of bottom-up causality is not drawn so tight as to exclude room for the influence of the whole upon the parts," writes John Polkinghorne.[7] With this in mind, can we conceive of the creation as itself a whole, perhaps a whole of wholes plus parts? Can we think of God acting on the whole of creation and, thereby, reorienting and redefining all of the parts within? And if we add time to this holistic vision, can we predict the emergence of a future whole of wholes which will retroactively determine the place of all the parts?

Might holism apply on a cosmic scale in a way that makes scientific sense? At present, we cannot easily consider the entire cosmos as a single whole with downward causation. In various locations within the cosmos dynamic changes are taking place, super novas and similar change events that initially have little or no relation to what is happening in very distant regions of the same cosmos. Because light travels at a finite speed, and because the universe is so vast and galaxies are flying away from one another, the ripple effect of events in one galaxy simply cannot catch up to escaping galaxies in order to have an impact. What we mean by the word 'universe' might be a totality; but it does not look like a single whole. Must we resign ourselves to dissonance here?

Perhaps the concept of time can help us at this point. If we go backwards in time, say 13.82 billion years, we return to what appears to be a minute singularity.[8] All things were but just one thing prior to the Big Bang. Although physicists disagree as to whether we can refer to the initial reality at the onset of the Big Bang as a singularity in the sense of an inert unit, we can say that all physical reality belonged together in a single inertial frame of reference. Only when the post-Big Bang expansion carried the developing universe beyond the threshold where all its light shared a common inertial frame did we lose the causal glue that holds the parts of the material world together.

What about the future? Physical cosmologists can only project on the basis of present observation that the universe will continue to expand for the foreseeable future. On the one hand, the second law of thermodynamics and its partner,

7 Polkinghorne, John, *Science and Theology: An Introduction* (SPCK/Fortress, 1998), 88–89.

8 On March 21, 2013 the Planck space telescope team released the highest precision map yet of the cosmic microwave background, revealing that the universe is a little older than previous estimates: from 13.7 to 13.82 billion years. Peplow, Mark, "Planck snaps infant universe." Nature 495:7442 (28 March 2013): 417–418, 417.

the law of entropy, would suggest that as time passes and the universe expands further, it will die out. As we move from hot to cold, from concentrated energy to dissipated energy, like an old car the universe will run out of gas and just stop at a state of equilibrium. Particles will be so spread out and so cold that they simply will lose a causal relationship to one another. On the other hand, the observation that distant galaxies seem to be accelerating rather than slowing down leads to counter speculations. Might there be some sort of vacuum energy that accounts for this increase? Might this mean that entropy will not apply? In sum, based upon present observations, the future of our cosmos is barely understood or predictable. Still the theologian needs to pose the question: do all things including all galaxies constitute a single whole? Or does their wholeness exist only in the mind of God? And, if the latter, at what point will God's thought become physical reality?

Perhaps dissonance rather than consonance between the scientific vision of the far future and the eschatological vision is unavoidable. The winding down to a state of equilibrium due to entropy or other such scenarios that forecast the demise of physical reality do not dovetail conceptually with the biblical symbols of God's ultimate future. [NRS] Isaiah 11:6 "The wolf shall live with the lamb, the leopard shall lie down with the kid, the calf and the lion and the fatling together, and a little child shall lead them." Or, [NRS] Revelation 21:23 "And the city has no need of sun or moon to shine on it, for the glory of God is its light, and its lamp is the Lamb." Such biblical symbols of the new creation bespeak harmony, of a full integration of the divine life with cosmic life. They draw a holistic picture in which the contentious forces within the present creation are reconciled. Such salvation must apply to all things if it is to apply to one thing. If God be the creator of all that is, then nothing would be left out of this eschatological vision. For this to come to pass, God would have to act in such a way that few if any past events have set the precedent. The Easter resurrection of Jesus Christ just might be the only precedent.

Thesis 4. God is the primary cause of nature's secondary causes.

I affirm as does virtually the entire Christian tradition that the God of Israel is the creator of all that is. In classical and especially medieval theology, God is identified as the primary cause of the world's existence; and the sequence of activities within the world are linked by secondary causes. From Aristotle on we have presumed that a secondary cause (causa secunda) precipitates a change or

an effect in preexisting matter. It took God as the primary cause (causa prima) to bring matter into existence in the first place.[9]

My own variant on designating God with the task of primary causation avoids dating the divine work of creation at a single moment in the past, say 13.82 billion years ago at the moment of the Big Bang. Rather, God's exercise of primary causation continues. It is exercised moment by moment or, better, as a ceaseless durative relation between creator and what is becoming created. The relations between creatures characterized by secondary causation is subject to scientific study. In our modern context, only the philosopher or the theologian can point in the direction of God as primary cause.

In classical theism, God's power is absolute. Yet, once the plan of creation is set in motion, God places absolute power in abeyance and ordains power to creatures to maintain the preordained plan of creation. God invests creatures with their own natural powers. Hence the medieval distinction (potentia dei absoluta et ordinata) between the absolute power of God and the power God ordains be exercised by the world's creatures.

The distinction between primary and secondary causation is an abstraction from the concrete flow of physical and extra-physical becoming. Primary causation is not absent when secondary is in effect; rather, they constitute two dimensions of a single reality. This permits a noninterventionist theory of divine action. God does not intervene in the sequence of secondary causes, because God's primary causation is always coincident with whatever is happening within the world. This does not preclude divine action at the secondary level; rather, it simply depicts God's ordinary relation to the world as that of primary cause while making no commitment to extraordinary interventions such as miracles.

Through the eyes of science what we see is the sequence of secondary causes. We do not see miracles, nor do we see primary causation. Science is free to limit itself to secular explanations for natural phenomena. Science provides theories of explanation within the self-imposed parameters of secondary relationships.

9 Russell, Robert J. does not rely upon the distinction between primary and secondary causality as I do here. Rather, as an incompatibilist, he prefers to see divine action as ubiquitously present in the physical world at the quantum level; therefore, he does not need to employ the concept of secondary causation.

Thesis 5. Our human nature is not yet fully created; we are still becoming.

The human race in its entirety and each human person as an individual does not arrive complete as the result of God's primary creative action. Our creation is not something past. It is present. We are not done yet. We are not yet what God the creator intends for us to be. We are still baking, so to speak; we still need to emerge from the oven in our final form.

The human reality is a becoming reality. On a planetary scale, the human race is evolving and changing physically and culturally. On an individual scale, we are not born as mature adults. We grow and change and mature and deteriorate and die. At what point do we become human? Or, does our humanity include our entire evolutionary history and personal history? Does humanity require a biography? If so, then we are not yet there. We await a fullness yet to come.

Built into the definition of the human reality is life, eternal life. This is the way it was in the opening chapters of Genesis when the divine image was ascribed to the human race. When Jesus Christ—whom the New Testament describes as the true image of God, the εικον του Θεου or imago dei—rose from the dead on Easter, this introduced resurrection into the definition of what a human being is. NRS 1 Corinthians 15:22 "for as all die in Adam, so all will be made alive in Christ." We will not become who God intends us to be until we ourselves share in the resurrection at omega. Once raised, we will look back over our biographies and over the evolutionary biography of the entire human race and understand who we are in our totality. Who we are will be defined by the length and breadth of our relationship with our Creator God.

As we examine the human condition as we find it now, we are examining a slice of human history and only a slice of the human reality. We can incorporate some of our past—both our prehistoric and historic past—but we cannot except in only the most vague way incorporate our future destiny. We must define our human reality as best we can by including some speculation about our ultimate future.

Thesis 6. Our human reality is in continuity with the surrounding natural world, including suffering and sin.

DNA is DNA is DNA. The four chemicals—ACGT – that make up DNA are the same in all life forms on planet earth. Whether with chimpanzees, Chihuahuas, chickens, Chinooks, or chickpeas, we human beings share a pattern of genetic

activity. Just as Genesis 2:7 says we are formed from the soil, Adamah, and therefore are made up of our planet's material, we can also say that what makes us live is in continuity with what makes anything alive in our world. And if Darwin's theory of evolution holds, we will have to conclude that all living things share a single biological history, perhaps even a single biological origin.

The relational model for understanding the human condition warrants adherence. The relational model cedes ontological priority to the relationship and subordinate status to the relation's terms. What we know as human individualism finds its place within the more comprehensive network of relationships. The human soul, for example, is not an isolated metaphysical monad, but rather a cipher that locates the dimension of the human reality that overlaps with the presence of God in a person's life. God has a relationship with each of us individually, to be sure; yet, even this relationship is tied to the network of connections with the rest of reality. Our resurrection, to cite a second example, is tied to the advent of the new creation, the eschatological renewal of the entire created order.

When it comes to understanding the shadow side of human existence—evil, frustration, suffering, sin, and death—we need to look first at the continuity between the human race and other forms of life, even pre-animate matter. We need to look at nonhuman life forms to compare our experience of suffering with that of other animals. We need to ask whether our evolutionary history has disposed human beings for violent and destructive behavior, and whether even sinful behavior might be commonplace in the wild kingdom. We might even want to ask if preanimate physical matter operates according to principles that make possible the rivalry for resources and the conflict between life forms that leads to the predator and prey relationship. The theological concept of the fallenness of nature needs to be explored in light of a relationalist model for apprehending the interconnectedness of the living and nonliving domains.

Thesis 7. We need to think epigenetically, not archonically.

We need to elect one of two options when thinking about matters of definition or essence: archonic or epigenetic forms of thinking. The archonic path takes us back to the origin, to the beginning. I elect this term because its Greek root, αρχη, has a relevant double meaning. It means both beginning and governance. In the word archaeology it means origin, for example; and in monarchy or hierarchy it means governance.

The word arche betrays a structural propensity in human thinking, namely, we associate the definition or essence of something with its origin. The rule or governing principle is coincident with the way something begins. The nature of things is established at origin, so whatever comes subsequently is a betrayal or deviation from a thing's original nature. Analysis takes the form of seeking origins, because in an origin we believe we find the essence. What this leads to is the concept of revolution—to revolve—as a return to an original essence by means of clearing away unwanted accruals.

Myth provides the paradigm of archonic thinking. Here is my working definition: a myth is a story about how the gods created the world in the beginning, in illo tempore or the time before there was any time, which explains why things are the way they are today. Whether providing etiologies for the cosmos or one's nation or name or disease or whatever, the myth reveals a thing's essential nature by telling us a story of its origin. We may tell very few myths in the modern world, but the archonic path is still followed. Physical cosmologists still look back to the Big Bang in hopes of devising a Grand Unified Theory (GUT). Medical researchers still look for the ontogenesis of maladies. Archonic thinking is common to both myth and science.

The other path is epigenesis. If we take this word apart, we can see that 'genesis', reminding us of 'generate', refers to bringing something into existence for the first time. It is no accident that the First Book of Moses or the Torah is called "Genesis." If we prefix it with 'epi', the Greek preposition for 'upon' or 'after', we get a compound word that suggests ongoing or repeated genesis. Epigenesis is the process by which new things continue to emerge. The way the world begins is not the way it remains. It changes. New things appear. New things do not need to bow in allegiance to what preceded them, nor is their essence reduced to the nature of their predecessors. The reality of new developments is not suspect because they were not present at the point of origin.

Perhaps I should interject a disclaimer. My term, epigenesis, should be distinguished from its use in genetics research or the sociobiology of E. O. Wilson. Among geneticists, epigenetics refers to intra-cellular or inter-cellular processes which influence gene expression such as methylation. Or, "epigenetics can be defined as a set of modifications to our genetic material that change the ways genes are switched on or off, but which don't alter the genes themselves."[10] A completely unrelated use of the term can be found in the theorizing of entymologist and social commentator, Edward O. Wilson. With the term epigenetic rules, Wilson

10 Carey, Ness, *The Epigenetics Revolution* (Icon Books, 2011), 7.

intends to say that "human nature is not the genes underlying it.... Human nature is the inherited regularities of mental development common to our species. They are the epigenetic rules."[11] This notion is scientifically vague and seems unconnected to any empirical research. However, my point here is merely that my use of epigenetic thinking should be distinguished from these two other uses. My own use is derived from that of biologist and philosopher, J.C. Smuts, according to whom "evolution is not merely a process of change...it is creative."[12]

What does epigenetic thinking imply for theology? To be sure, much of the Bible follows the archonic path. The book of Genesis is rife with etiological narratives, stories about the origin of virtually every aspect of daily life for Israelites in ancient Canaan. The origin of Israel is given in the story of Abraham's call; and the name 'Israel' is given in the story of Jacob. Yet, this is not all. The God of Israel makes promises to do new things; and this God fulfills these promises. The people of Israel live between promise and fulfillment. God is not stuck in the past. God's future relationship to the covenant people is not determined by what happened at origin.[NRS] Isaiah 43:19 "I am about to do a new thing; now it springs forth, do you not perceive it?" We will miss perceiving God's new things if our eyes look only toward the past and not toward the future.

The lens of epigenesis helps us perceive the dynamism of every day existence as well as view with credibility the divine promise for an eschatological consummation where God will become all in all. New things happen every day, both in natural history and human history. The eschatological transformation is continuous with daily newness, even though the breadth of the eschatological transformation is total. Only by liberating our thought processes from reliance upon archonic ontologies can we come to appreciate the Christian gospel that anticipates omega.

Conclusion

In the tradition of Thomas Aquinas, I believe the task of theology is to explain all things real in relation to their creator, God. "In sacred science all things are treated of under the aspect of God, either because they are God Himself, or because

11 Wilson, Edward O., *The Social Conquest of Earth* (W.W. Norton&Company, 2012), 194–195. See: Peters, Ted, "E.O. Wilson's Conquest of Earth," *Theology and Science* 11:2 (May 2013), 86–105.

12 Smuts, Jan C., *Holism and Evolution* (Macmillan, 1926, and N&S Press, 1987), 89. See: Peters, Ted, God-The World's Future (Fortress Press, rev. ed., 2000), 18–19.

they are ordered to God (sub ratione Dei) as their beginning and end."[13] Nothing smaller than the cosmos with its past and its future can encompass what we mean by God's creation.

Theological reflection on what we have learned about physical reality through science leads to both consonance and dissonance. The theory of the Big Bang with its concomitant notion of natural history over time is roughly consonant with what the religions of the book see as divine creation. However, scientific prognostications regarding the far future of the cosmos seem dissonant with biblical promises of a new creation, promises of an eschatological salvation. I have sought here to develop a theological ontology that draws both creation and new creation into a single conceptual scheme, a conceptual scheme intended to enhance consonance and reduce dissonance. The elimination of dissonance between naturalistic and theological visions of the future cannot be easily erased, of course. This is because of their respective methodologies; because the different disciplines rely upon different sources of knowledge for their points of departure. The truth or falsity of the Christian claim that a new creation is coming has the status of a hypothesis, subject to confirmation or disconfirmation by what happens in the future.

13 Thomas Aquinas, *Summa Theologica*, I:1:Q.7.