Engaging Robert J. Russell's Alpha and Omega

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ROBERT J. RUSSELL'S ESCHATOLOGICAL THEOLOGY IN THE CONTEXT OF COSMOLOGY

by Willem B. Drees

Abstract. The main title of Robert J. Russell's *Cosmology from Alpha to Omega: The Creative Mutual Interaction of Theology and Science* catches the substance of the essays; the subtitle his methodological vision. The *mutual* is modest as far as the influence from theology on science goes; in no way is Russell curtailing the pursuit of science. Driven by intellectual honesty, he holds that in the end religious convictions will have to stand the test of compatibility with scientific knowledge. And as a Christian he believes core beliefs of Christianity, reformulated as needed, will be able to stand this test. The essays address the origin and contingency of our universe in relation to belief in creation, and his proposal for noninterventionist objective divine action. For him a stumbling block is natural evil; the evolutionary intelligibility of evil falls short of what would be desirable theologically. As steps toward an adequate eschatology Russell seeks to develop a more complex understanding of temporality, and proposes to understand the resurrection of Jesus as the First Instantiation of a New Law of the New Creation. This area is more in tension with current science, but that could be expected when one moves from creation to redemption. Within his self-imposed boundaries, these essays are well informed and well argued, and together they provide a sincere and sustained research program.

Keywords: bridge metaphor; contingency; cosmology; eschatology; mutual interaction of religion and science; Robert J. Russell

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When one looks out from Berkeley, California, toward the Pacific, one sees the beautiful Golden Gate Bridge, a prominent iconic element in the presentation of the Center for Theology and the Natural Sciences (CTNS) in Berkeley, founded and directed by Robert J. Russell. I had the privilege of spending half a year there beginning in the fall of 1987, a formative period for my own work in religion and science. Russell has set a major example in this field by his deep engagement with the physical sciences and his relentless efforts to articulate theological issues in this context. In the introduction to *Cosmology from Alpha to Omega: The Creative Mutual Interaction of Theology and Science*, Russell writes about theology and science: "In many ways the bridge is now complete and we can concentrate fully on the rich opportunities and challenges brought on by the flow of knowledge and vision in both directions across the bridge: the creative mutual interaction between theology and science" (Russell 2008, 2).

I have the honor and pleasure here of reporting on and responding to Russell's book, which is a volume in the late Kevin Sharpe's distinguished Theology and the Sciences series with Fortress. It includes ten of Russell's finest essays, dates of publication ranging from 1984 until 2006, some revised. Two have been published in *Zygon*. The book's extensive introduction describes well his core commitments and the development of his thought on major issues in theology and science. It also includes a nine-page bibliography of Russell's publications, indexes of names and subjects, and a foreword by Ian Barbour. The main title catches the substance of the essays (cosmology, beginning and end) and the subtitle the methodological vision, articulated in various places but primarily in the introduction.

In my opinion, speaking of a bridge suggests too much that there are two land masses, stable givens of a similar kind, and traffic flowing in both directions. Given the iconic role of the bridge in the presentation of CTNS, it is interesting to note the relative absence of the bridge metaphor in this book. It is not in the title, not represented on the cover, and not to be found in the table of contents. When he mentions it in the introduction, Russell speaks of "Barbour's 'bridge'" (p. 4). Russell is fair in recognizing others, but in this way the bridge also seems an image of an earlier stage. It will be interesting to see what Russell's view of the relationship, methodologically and substantially, has become.

Creative Mutual Interaction: Not a Bridge

On the same page where Russell speaks of Barbour's bridge he emphasizes that "doctrines and theories change in time" (p. 4). There go the landmasses at both ends of the bridge. The bridge, then, connects not bodies of knowledge but human epistemic enterprises. Although theology is a mode of reasoning that is to some extent analogous to scientific reasoning, there also are dissimilarities: "Religious models serve noncognitive functions

which are missing in science, such as eliciting attitudes, personal involvement, and transformation" (p. 5).

Russell documents some of the stages of his own journey from critical realism to the "creative mutual interaction" (as the subtitle of the book has it) he now advocates: interest in the roles of metaphors, the musical metaphors of consonance and dissonance, and the reconstruction of theoretical and doctrinal development as Lakatosian research programmes. In doing so he covers much of the literature on religion and science of the last decades.

The most contestable word in "creative mutual interaction" might be *mutual*—the idea that there is also an influence from theology to science. It should be emphasized that this is absolutely not similar in kind to the Intelligent Design discussions, as an attempt to legislate on scientific research and limit science teaching. Russell in no way intends to curtail the pursuit of science; he is too much a lover of truth and earnest inquiry who holds that in the end our religious convictions will have to stand the test of compatibility with well-established scientific knowledge. And, it seems to me, as a religious believer he expects that in the end core beliefs of his Christianity, perhaps reformulated but not abandoned, will turn out to be compatible with at least one legitimate scientific perspective on reality.

We are not there yet; our ideas are fallible and up for development. Science may offer new data for theology, challenge certain philosophical assumptions, and inspire certain models and analogies. And theology may inspire scientific models and analogies, shape philosophical assumptions brought to science, and play a role among the criteria for choosing between rival theories. Such pathways fill in the *mutual* in the interaction.

For Russell a prime example is Fred Hoyle's development of the steady-state theory in the 1950s as an alternative to the Big Bang theory. This work was inspired by Hoyle's theology (that is, atheism); he disliked the idea of an initial moment and thus sought to develop a model for a universe without a beginning. That was legitimate science, in the course of time tested against observations and abandoned as it failed by regular scientific criteria. Its religious or antireligious inspiration has not counted against its scientific credentials.

I see no problem at all with such pathways from theology to science, as long as their role is in the context of discovery, the creative stage of the scientific process. The religious beliefs carry no weight in the scientific process except maybe in a few areas such as speculative cosmology, where underdetermination and scarcity of data is so persistent that specific philosophical assumptions about the nature of time or of the whole may continue to play a role. I return to this in the next section.

Neither do I see the significance of these pathways from theology to science. They provide no standing for the theological ideas involved or for the scientific theories proposed. Good ideas may be promoted for the wrong

reasons; good intentions may motivate misguided theories. Has the case for atheism been different as a result of Hoyle's theory? I do not think so. A theist might point out that Hoyle's theory required acts of creation all over the universe all the time. And atheists did not lose heart when the steady-state theory failed to account for the cosmic background radiation.

Cosmology from Alpha to Omega

Alpha. The first three essays address the origin and contingency of our universe in relation to belief in *creation ex nihilo* (creation from nothing). Russell does not identify the Big Bang and the moment of creation, for at least two good reasons. First, in its expectations regarding the future the Big Bang theory has features that go against a theistic view. Thus, claiming the model for its scientific perspective on the beginning would be an unsatisfactory form of selective shopping. Second, the Big Bang theory cannot be the final theory. Russell discusses proposals for theories that go beyond the Big Bang theory—if not in time, at least in explanatory ambition. By stressing the plurality of such theories Russell underlines the contextuality of all theological interpretations, especially in an area such as cosmology where theories are underdetermined by data.

Given the plurality of theoretical options, personal philosophical preferences regarding the nature of time and explanation thus may come to play a role in choosing which scientific cosmology to develop. British cosmologist Christopher Isham (who surprisingly does not appear in Russell's index of names) is an important guide in this part of the analysis. In a review article Jeremy Butterfield and Isham (2001, 38) wrote about theory construction in the field of quantum gravity and quantum cosmology:

> In this predicament, theory-construction inevitably becomes much more strongly influenced by broad theoretical considerations, than in mainstream areas of physics. More precisely, it tends to be based on various *prima facie* views about what the theory *should* look like—these being grounded partly on the philosophical prejudices of the researcher concerned, and partly on the existence of mathematical techniques that have been successful in what are deemed (perhaps erroneously) to be closely related areas of theoretical physics. . . .
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> The situation . . . tends to produce schemes based on a wide range of philosophical motivations, which (since they are rarely articulated) might be presumed to be unconscious projections of the chtonic psyche of the individual researcher—and might be dismissed as such! Indeed, practitioners of a given research programme frequently have difficulty in understanding, or ascribing validity to, what members of a rival programme are trying to do. This is one reason why it is important to uncover as many as possible of the assumptions that lie behind each approach: one person's "deep" problem may seem irrelevant to another, simply because the starting positions are so different.

Such underdetermination seems a real issue in such speculative areas of cosmology, and especially so when one comes to metaphysical conclusions regarding the nature of nature. However, Butterfield and Isham also indi-

cate that in this respect this area of science differs from mainstream areas of physics. Thus, in quantum cosmology one can argue for the possibility of a role for philosophical (and theological or metaphysical) assumptions and preferences but that potentiality of an influence from theology to the sciences can hardly be extrapolated to areas outside cosmology and the most speculative frontiers of theoretical physics. Russell draws his examples of mutual interaction from cosmology (also the Hoyle case), but his plea for such pathways from theology to science is presented as if it applies across the whole range of sciences. However, cosmology may be exceptional rather than typical in this respect.

Russell is careful in his reflections on the contingency of the initial conditions and particular constants of nature (anthropic arguments). Perhaps the values of these constants may be explained in a future theory with multiple worlds (or domains). However, according to Russell a theist may then respond with a higher-order design interpretation: Perhaps the whole many-worlds arrangement is set up in such a way as to make life possible by allowing for domains with different constants though structurally similar laws. And this could be repeated at a higher level, with different structures for the laws, and beyond that with different logical systems. Even successful explanatory theories have residues of contingency. And "the kind of contingency which exists in each particular scientific theory provides a special context of meaning for our understanding of divine creativity" (p. 51). No design argument here, but the claim is that at each level of scientific understanding there is some form of contingency that a theist might appreciate in terms of design. Although I am basically in agreement with this persistence of limit questions, as I call them, I am not sure that beyond logic the scale can be extended as Russell has it (p. 50). Besides, the same reasoning makes clear that anything claimed as contingent may well be explained, and thus to some extent necessary, when one gets to a higher theory. Does this show the persistence of contingency or its frailty?

Divine Action in the Midst of Time. The next three essays present Russell's quest for a plausible model for noninterventionist objective divine action (NIODA), a core issue of his work in the context of the conferences on divine action in scientific perspective jointly organized by the Vatican Observatory and CTNS. It is a daring approach that argues for a middle ground between those who understand divine action as interventions that go against the laws of nature and ordinary historical processes and those who speak of God's mighty acts as a term of praise for something that happened without thereby asserting that objectively God has made a specific difference. Russell argues that the understanding of reality at the fundamental level has enough flexibility built in to allow for specific divine decisions without God's abrogating the laws of nature that God created in the first place. He argues further that decisions that determine

processes at the quantum level may make a difference at the genetic level and thus for the history of life. Others have written in some detail about the divine action conferences (for example, Wildman 2004).

Evil and the Turn to Eschatology. If God through divine action can change the course of events, why aren't things more pleasant? Two essays deal with attempts to make natural evil intelligible in the framework of thermodynamics and to justify natural evil in an evolutionary perspective or a theology of creation. Russell's conclusion is that this falls short of what is desirable theologically. A robust eschatology of the new creation is needed.

Eschatology is the topic of the two final essays. This seems the most daring part, "given the overwhelming prospect of a universe existing for billions of years after the extinction of all life" (p. 275). Russell points to scientists Freeman Dyson and Frank Tipler, who have developed more hopeful eschatological models within the confines of physical cosmology, but then turns to theologians Karl Rahner, Wolfhart Pannenberg, and Ted Peters. The bodily resurrection of Jesus and the expectation of the parousia, the second coming of Christ, are taken to be central to Christian faith. This conflicts with current cosmological expectations of a universe that either collapses into a new singularity or expands forever. Thus, it is a major test for any theology with a strong eschatology to see whether cosmology may be revised in such a way that it is adequate to all data about the history and present state of the universe while allowing for theological core commitments regarding Easter and eschatology. If not, Christianity, or at least a Christian eschatology that includes a bodily resurrection and a parousia, is falsified (pp. 267, 282, 289, 299).

Given underdetermination by data and the role of aesthetic and other elements in theory formation, the desire to have such an eschatology may influence research in scientific cosmology. "I see no reason why the cognitive component of theological doctrine could not serve as a source for certain metaphysical elements out of which to construct a testable alternative scientific theory. I would of course insist that such a theory be judged strictly by the standard criteria of scientific rationality," writes Russell (p. 289f.). He suggests that for an eschatologically adequate cosmology we have to go beyond "linear time," although we do not have to return to a cyclical understanding. One potential resource is Roger Penrose's way of diagramming time at the cosmic scale, including black holes.

In the first essay forms of contingency were distinguished, including the contingency of the first instantiation of a law of nature. Ice was always frozen water, conceptually speaking, but this was not a fact until it happened for the first time, long after the Big Bang. A similar notion recurs in the final chapter, when Russell proposes to understand the resurrection of Jesus as the "first instantiation of a new law of the new creation" (FINLONC). Russell considers the contingency of first instantiation in its mild form as "closely related to what many philosophers of science call 'emergence' in

nature" (p. 37). Since the first publication of this essay, in 1989, the theme of emergence has gained in popularity in religion and science. Although it is a most important phenomenon in natural processes, worth substantial scientific analysis, I do not think it delivers us genuine contingency (water freezes for the first time when the conditions are right; the first instantiation is unavoidable) or that it delivers us from reductionism; emergentists say that more complex phenomena arise out of underlying processes, and so do reductionists. The main difference, in my perception, is in the attribution of significance—whether one marvels about molecules, which have the possibility to bring forth humans, or about humans, who have come to be out of molecules.

Russell is well aware that a mild form of first instantiation (emergence) will not do for his purposes. Already in his 1989 essay he sees the resurrection as a more aggressive form of first instantiation,

> a transformation of the present nature *beyond* what emergence refers to. . . . If emergence is an element of novelty or discontinuity within an overarching framework of continuity (for example, the beginnings of evolutionary biology layered upon pre-existing fundamental physics), then aggressive first instantiation contingency consists primarily in discontinuity . . . within which a small element of continuity is maintained (for example, it is the same Jesus of Nazareth who is now the Risen Lord). (p. 37)

If one accepts this observation, his attempt to save a particular Christian eschatology by appealing to first instantiation places this ambition at quite a distance from science as we know it. The sciences regularly seek to make something that is at first unintelligible intelligible within the framework of laws and conditions pertaining. And if this seems impossible, scientists may seek to propose a modification of the laws—but then that modification becomes part of the framework that is intended to govern past, present, and future processes. Over time we have changed our understanding of the fabric of reality, but surprising "new" phenomena are again and again included, either by application or by modification of our understanding of the laws. Here, Russell wants something different: a law of the new creation. It is a most remarkable step in his work, as the quest for eschatology comes closer to a separation of scientific and theological ideas than anything else in Russell's writings and thus puts strain on his methodological commitments.

Whether even an objective eschatological reality would suffice to justify and redress evil might be disputed. Russell looks for "an eschatological context, for only such a context can offer a goodness sufficient to address the extent of evil in the history of the universe (the *Brothers Karamazov* problem)" (p. 266). As I read Dostoyevski's novel, Ivan's objections are not about the extent of evil; even if it were necessary to build the universe on the tears of a single child, that would already be unacceptable, both to Ivan and to Aljosja, his pious brother. And, at least for Ivan, an eschatological

resolution cannot compensate or justify the evil done to children: "When the mother embraces the murderer whose dogs tore her son apart, and all three shall cry out weeping, 'You are just, O Lord'—that, of course, will be the summit of all knowledge, and all will be explained. But here's the snag; that's just what I can't accept." And a few lines down: "And if the suffering of the children is required to make up the total suffering necessary to attain the truth, then I say here and now that no truth is worth such a price. . . . I don't want harmony; for the love of humankind" (Dostoyevski [1880] 1994, 307). Even if the eschatology envisaged by Russell would be possible, it is doubtful whether the problem of evil would be solved.

Concluding Remarks

For anybody interested in these topics, the essays in this book should be required reading. For those who know them already, having the articles together in a single volume reveals them as elements in a larger argument. Russell is extremely well informed on the scientific issues, engaged with classics from recent and contemporary theological literature, and original in his analysis.

I do find the number of references via notes overdone. I do not need to be persuaded that he has read widely and has considered alternative points of view. I hope that the monograph announced in the bibliography, *Time in Eternity*, will present his constructive proposal with fewer defensive layers. So too for the insertion of *sic* in quotations of older authors; that Langdon Gilkey (p. 115), John Hick (p. 261), Bertrand Russell (p. 280), and Karl Rahner (p. 286) spoke of human beings as "man" or of God as "he" is typical for the language at the time they wrote. These *sic*s may be more than just a matter of correctness, however. There is something ahistorical in the way Russell involves theologians and doctrines in the discussion, as if they were our contemporaries. However, doctrinal claims have a historical setting. Why did people in those circumstances, in dispute with such-and-such competitors, articulate their vision this way? Bypassing the situated, functional character of ideas may create interesting intellectual engagement, but it also may miss motives and existential concerns. In my opinion, to avoid naive translations and tendencies toward literalism it is important to see beliefs and doctrines in their context and to pay attention to the underlying concerns, because the continuity may be found there rather than in the theories themselves.

Let me give an analogy from the history of science. In the succession of theories, whether of gravity or of combustion, the theoretical framework and ontology may undergo drastic changes, but real-world observations have to be covered as well by newer theories as by their predecessors. The dynamics that Russell incorporates would be complicated but enriched if the real-life dynamics of religious beliefs and believers were allowed to be

part of the understanding of beliefs such as those about the resurrection and the eschaton.

I also am concerned about the absence of the human, religious dimension of theology. When speaking of dissimilarities of theology and science, there is a brief reference to noncognitive functions, but the human communities who use doctrines and metaphors to articulate values and meaning play no role. Or, rather, there is one community that is present all along, in the form of an occasional "we" and "our": "In the quiet dawn of Easter we Christians confess . . ." (p. 273), and "we are a people of tradition, rooted and growing in the biblical witness to a creator God whom we worship" (p. 33). Such expressions signal the nature of this book, as the essays are primarily written from within a particular tradition. For a more complete engagement with the scientific perspective, one has to acknowledge that religion is not just a set of ideas about the world (and thus a potential conversation partner of the sciences) but also a bewildering variety of human practices and beliefs, and as such an object of study in the social sciences as well as in religious studies. This is not a criticism, because it isn't announced in the title or the preface, but it does indicate the particular intellectual, Christian theological niche in which this collection of probing essays functions.

Note

This article was completed while the author was the Houston Witherspoon Fellow for Theology and Science at the Center of Theological Inquiry, Princeton, and affiliate fellow of the Center for the Study of Religion of Princeton University.

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