

# *Engaging Robert J. Russell's Alpha and Omega*

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## IS PHYSICS FUNDAMENTAL? ROBERT RUSSELL ON DIVINE ACTION

by John F. Haught

*Abstract.* Robert Russell's theological work has been a helpful stimulus to the task of understanding the meaning of divine action and providence in the age of science. He relates God's direct action "fundamentally" to the hidden domain of quantum events, and his theology of nature deserves careful attention. It is questionable, however, whether the term *fundamental* as applied to quantum events by physical science may be taken over by theology without more careful qualification than Russell offers.

*Keywords:* abstraction; divine action; fundamental; metaphysics; ontology; quantum mechanics

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For many years, with unflagging passion and ingenuity, Robert Russell has pursued the question of how God acts in nature. The quest to understand the meaning of divine action seems to be the defining feature of his work in science and religion, even though he has dealt fruitfully with other questions as well. His concern to make sense of the biblical claim that God acts powerfully and providentially in the whole of creation stems not only from his contagious Christian faith but also from his uncompromising demand for the intellectual integrity of theology. Russell's concern that theologians should look for increasingly appropriate ways of articulating the consonance of science and theology, especially on the issue of divine action, is

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[*Zygon*, vol. 45, no. 1 (March 2010)]

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especially laudable. Those who work in the increasingly important field of science and religion rightly admire Russell for his leadership in uniting scientific rigor with the good news of faith. In this respect he has used his expertise in both physics and Christian theology to great advantage. And even though in the following comments I express concern about the way in which he links divine action to the world as science understands it, whatever hesitancy I have in no way detracts from my respect for his theological skill or from my gratitude for his being a trailblazer for theology in the age of science.

I am especially appreciative of Russell's insistence that a lawfully governed natural world still leaves ample room for both human freedom and divine action. I also agree with his proposal, shared with many others, that divine action is nonintervening. When Russell speaks of the nonintervention of God in nature he is not espousing deism but instead pointing out that the laws of nature do not have to be broken or suspended in the slightest way in order for God to be powerfully active in nature or for humans to be endowed with freedom. For Russell the recent movement of physics from classical determinism to the indeterminism of quantum mechanics allows theology to affirm divine action and human freedom in principle without contradicting what physics is now saying about nature.

Quantum physics for Russell, therefore, is the good luck of contemporary theology, not entirely unlike the way in which existentialist philosophy was taken to be the good luck of Christian theology in the mid-twentieth century by theologians such as Paul Tillich and Rudolf Bultmann. Bultmann, for example, took advantage of existentialism's delineation of a realm of freedom distinct from nature in order to allow theology to find a space for divine action in an age still encumbered by mechanistic interpretations of science. For Bultmann it was sufficient that God act powerfully in the realm of existential subjectivity, an arena considered distinct from nature. In this sphere a person may move from inauthentic existence to the authentic life of faith and true freedom without this transition ever becoming publicly accessible or available to scientific observation. This personal transformation is all that faith needs to witness in order to affirm the reality and power of divine action in the world.

Unfortunately, however, Bultmann's theology was content to allow determinism to reign pervasively in the nonhuman natural world while relegating freedom to a domain of subjectivity ontologically severed from nature. Russell rightly rejects this subjectivist (he calls it liberal) theological approach for not doing justice to the biblical references to the mighty acts of God in the whole of creation. So he proposes that the arrival of quantum theory in physics now allows theology to understand the natural world itself as being open, from the bottom up, to a divine influence that is concretely real but that does not have to suspend the laws of physics or submit to specification in scientific terms.

Russell assumes that quantum indeterminacy at what he calls the foundational level of physical reality provides the needed openness or receptivity to divine action, and this openness swells somehow from the bottom up into the macroworld so as to open up everything else in nature to the impact of divine action while allowing a cove for human freedom as well. Consequently, the strict existentialist severance of a (human) realm of freedom from a mechanistically understood natural world, in order to make a space for God's influence and human ethical responsiveness, is no longer necessary. Neither is Bultmann's call for demythologizing the Bible's many stories about divine action in the natural world.

The shift from classical to quantum physics, according to Russell, alters the whole intellectual landscape on which theology may now make a case for divine action in the age of science. Refining earlier insights of Karl Heim, William Pollard, and Eric Mascall, he now claims that it is possible to understand divine action as taking place in a hidden dimension of nature—the quantum domain—rather than being confined to a supposedly inaccessible sphere of human freedom as understood in existentialist terms. Following the Copenhagen interpretation of quantum events as ontologically indeterminate, Russell argues that God can act *directly*, in an objectively real though hidden way, at the scientifically undetectable level of quantum events. Then divine action can be manifested indirectly and visibly when the quantum effects are amplified in the macroworld. So there is no need any longer to water down the saving message of the Bible by leaving the natural world out of the sphere of Christian hope for renewal and resurrection. Moreover, the new physics makes room for theology to understand human freedom as more than an illusion (Russell 2008, 110–211).

Now, some critical reflections. Is this a fruitful way for theology to think about divine action in the light of contemporary science? In his acronym NIODA (noninterventionist objective divine action) Russell has set forth the theological requirements that (a) divine action must be objectively real, not simply a human construct; otherwise Christian faith has no substance and must be considered illusory; and (b) divine action must be noninterventionist. Russell interprets nonintervention to mean that divine action can be physically effective without having to violate any laws of science. Divine action must therefore be concealed from ordinary observation and scientific specification, or else God would appear to be just one actor or one cause among others in the natural continuum. It is theologically essential—and here I believe that Russell would agree with Bultmann—that God not be understood as one agent among others in nature. God, Russell believes, is “wholly other, not a cause among the causal network (of nature), not a marauder in the dark recesses of nature's womb of chance” (p. 155). Divine action must *not* be located as part of a physical continuum even if such location were to place God in a position of causal primacy. Why not? Because every attempt to *specify* divine action in terms of natural

occurrences or causes runs the risk of naturalizing the divine, that is, compromising the transcendence of God by situating it too snugly within the natural order.

Thus Russell insists not only that divine action is hidden in principle from scientific specification but also that it is noninterventionist. Once again, he would argue that nonintervention must not be interpreted in a deistic sense, because this would contradict the Christian belief that God is lovingly involved in the world of natural and historical events. Insistence on nonintervention is in no way intended to water down the idea of divine power or the Bible's sense of the mighty acts of God.

I want to ask, however, whether theology for the sake of its own integrity should ever employ concepts from physics, including contemporary quantum physics, as anything more than analogies in its always inadequate attempts to make sense of the strong biblical belief in a God who acts. Moreover, is it wise at the level of theory to speak of God's action in the world without the mediation of a more robust metaphysical conceptuality than Russell employs? Where Russell's thought seems most problematic to me theologically is in his specifying a particular region in the physical world, that of quantum events, where God acts *directly* to cause specific effects. I am aware that Russell also agrees that divine action applies to the rest of nature indirectly, but clearly he gives an honored place to the quantum level as the characteristic point of insertion of divine influence in the world. He refers to his approach as employing a "thin metaphysics" (p. 179), but it is difficult for me to distinguish it from physics.

Russell's favoring an invisible subatomic sphere as the privileged port of divine influence is consistent with the fact that he takes the quantum domain to be the *underlying* (p. 156) or *foundational* level (pp. 152, 161) of nature's being. He refers to the quantum level as nature's *bottom rung* (p. 156), brought to light by a physics that provides a *fundamental* theory of nature (p. 161; emphasis added). Quantum mechanics, Russell claims, is "the foundational theory in physics, dealing with the subatomic realm of nature. Accordingly, the acts of God at the quantum level should be considered direct acts; more precisely, the effects of God's direct, mediated action may occur initially at the quantum level. The events we attribute to God at the macroscopic level would be their indirect result" (p. 152). Russell allows that God works at higher levels in nature as well (p. 157), although presumably indirectly, and God's activity in quantum events is "mediated by nature" (p. 154), but "when a quantum event occurs, it occurs by God's direct action" (p. 157).

Russell tries valiantly to defend his position from misunderstanding (pp. 159–96), but if I am not mistaken he consistently assumes that the quantum level is fundamental. And if God acts at all, God would act directly at the fundamental level of nature's being and indirectly at all other levels. Theology can do better, Russell seems to assume, than fall back on analogies or resort to pre-quantum era metaphysical systems. Physics itself now

allows us to envisage “the God who acts” as intersecting directly and objectively with the bottommost level underlying (p. 156) natural process. In this covert arena special providence may produce subtle, scientifically indefinable effects that in turn can influence the whole of nature indirectly.

My hesitation regarding all of this is that in spite of Russell’s endeavor to avoid naturalizing and thereby diminishing divine action, his project may have just such an unwanted effect anyway. I am especially skeptical toward Russell’s at least implicit supposition that the quantum domain is the bottom rung or the fundamental level of nature. Following the discourse of most of his fellow physicists, Russell naturally takes the quantum level to be foundational. It is this same assumption that leads Steven Weinberg to claim that if God does not show up at the fundamental quantum level of nature, the chances are good that the whole idea of divine action is an illusion (Weinberg 1992, 241–61). Even though Russell rejects Weinberg’s atheism, he seems to agree that the prime location of direct divine action would lie at the same fundamental level of natural reality that Weinberg declares to be devoid of deity. Russell can think of divine action as taking place in a bottom-up manner only because he too conceives of the quantum domain as somehow ontologically and not just scientifically foundational. It is important to his whole project to think of the quantum level as the footing on which the rest of nature’s architecture stands. In order for divine action to have an indirect effectiveness in the macroscopic world, therefore, God must act directly though perhaps not exclusively at what Russell and other physicists take to be nature’s ground level.

In response I want to make three points. First, the language and conceptuality of physics can become misleading for a theology of divine action because it fosters a confusion of what is fundamental and concrete in nature with what in fact are scientific abstractions that leave out most of the real world. Although quantum events are fundamental to scientific analysis, they are not necessarily fundamental ontologically speaking, that is, in terms of the degree or level of being they possess. Ontologically speaking, the sphere of quantum events delineated by microphysics is elemental, not fundamental; and the elemental is arrived at only by abstracting from what is concretely fundamental. Russell, however, thinks of quantum events as ontologically fundamental, so he understandably wants to connect divine action directly and primordially to this allegedly foundational sphere of nature’s being.

Russell realizes that if the notion of divine action is to make good sense in an age of science, theology must find an opening for it in nature. By locating nature’s openness to objective and direct divine action at the quantum level, however, he seems to be duplicating, although in a more nuanced way, the implicit ontologizing of abstractions that has characterized scientific thought throughout the modern era. In his illuminating critique of seventeenth-century scientific and metaphysical assumptions, Alfred North Whitehead notes that physics always arrives at its understanding of

nature only by leaving out, or abstracting from, our tacit awareness of the tangled, obscure, and relationally convoluted character of the concrete world (Whitehead [1925] 1967, 51–59). According to him, “those elements of our experience which stand out clearly and distinctly in our consciousness are not its basic facts” ([1929] 1978, 162). Rather, they are the product of a mental process of abstracting, and to abstract means “to leave out.” The deepest and most fundamental strata of nature’s being cannot be captured by physics or any science. Although abstractions are necessary to focus our thought scientifically, they cannot adequately represent in depth what is really going on in the universe. To sound the depths of nature we need the dimmer, less sharp-edged language of analogy, metaphor, symbol, and myth. Relating divine action to the quantum level may not be wrong, but it is not fundamental, ontologically speaking.

What is fundamental, or concretely actual, in nature is the complex, organic *web of relationships* from which scientists have mentally isolated such constructs as those of classical, and—one may now assume—quantum physics. In his proposal about where to locate the necessary openness to divine action in nature Russell, in my opinion, is still taking the abstractions of science as though they are concretely fundamental.

It is important to recall here that the process whereby the human mind arrived, only recently, at the idea of a quantum level required increasingly refined mathematical representations of experimentally constrained observations. The idea of a quantum level, therefore, can hardly be called fundamental. That which is mathematically clear and distinct, Whitehead insists, is by no means fundamental ([1929] 1978, 162, 168–83). “It must be remembered,” he adds, “that clearness in consciousness is no evidence for primitiveness in the genetic process: the opposite doctrine is more nearly true” (p. 173). “It follows that the order of dawning, clearly and distinctly, in consciousness is not the order of metaphysical priority” (p. 162).

This does not mean that new developments in physics have no implications whatsoever for our theological understanding of divine action. But in great measure their importance lies in the fact that the new models expose the even cruder abstractions of the mechanistic era of physics in which the universe came to be imagined as utterly impermeable to divine influence and incompatible with human freedom. Russell rightly wants to get beyond the shallow and abstract universe of atomistic and mechanistic materialism that had excluded freedom and apparently closed the world off to divine action. But he wants to defend the idea of nature’s openness to God against materialism and mechanism not by moving to the battlefield of metaphysics but by remaining on the terrain of physics. Here he simply points out to his adversaries that science has now graced theology with a more supple and less deterministic understanding of physical reality, one that seems more porous to divine action and open to the reality of human freedom than the earlier physics permitted. However, it seems to me that even apart from the fact that deterministic interpretations of mac-

rocosmic reality have not been decisively defeated by the new physics, the question remains whether physics of any sort can provide a fundamental, rather than elementary, framework for conceiving of God's action in nature.

Second, I would suggest (although I do not defend the point fully here) that the appropriate place to speak of divine action in a fundamental way is not at the level of elemental (abstracted) quantum events and then indirectly in their alleged amplification in the macroworld. Rather, theology may fruitfully employ a more metaphysical language and speak of divine action as the ultimate principle of *unification* that brings reality into being out of the elemental. Creating is the characteristic mode of divine action, and the theological notion of creation underlies the doctrines of redemption, providence, and eschatology. But *to create is to unite*, as Jesuit paleontologist Pierre Teilhard de Chardin has so often emphasized in his Christian theology of nature (1974, 134, 178, 182). In other words, the *fundamental* way in which God acts is to lure the scattered elements characteristic of the cosmic past toward a *future* coherence that can finally give intelligibility and concreteness to nature. Here it is the future rather than the past that the world leans on as its true foundation (Teilhard 1970, 239). Metaphysically speaking, therefore, we may think of divine action as integrating the elemental *many* into the metaphysically concrete *one*. Here being and oneness (the coherence of many in a differentiated unity) are correlative notions. To focus on the elemental, as quantum physics does, is certainly appropriate for science, but it cannot be the most appropriate starting point for a Christian theology of divine action.

By specifying quantum events as the place where the world opens up to direct divine action Russell is still indulging, although not to the same degree, the seventeenth-century mental habit that Whitehead named simple location. The assumption of simple location takes for granted that a piece of nature can be abstracted, isolated, and adequately understood without taking into account the whole set of relationships it has to the rest of nature ([1925] 1967, 49). Russell allows a subordinate place for a more organismic top-down and whole-part causation in his theology of divine action. But it seems to me that he nonetheless loads scientifically abstracted quantum events with an ontological weight too heavy for them to carry by themselves.

Third, the openness to divine action that theology needs in its understanding of nature does not have to be located by looking for more elbow room, as it were, at what Russell thinks of as the fundamental level of nature to which quantum physics refers. Even if strict determinism prevailed at that level, it would not logically entail that such predictability precludes indeterminacy at the living and thinking levels. Russell fears that if determinism were to prevail at what he calls the foundational level of nature it would freeze nature all the way up, and so he is happy that quantum physics allows for indeterminacy at the bottom level. Such apprehension on Russell's part is further evidence that he privileges the quantum level as fundamental.

However, even the most rigid determinism and predictability at the level of physical and chemical activity would not necessarily rule out an emergent indeterminacy and openness to divine action at the levels of life and mind. In fact, predictability and determinism at a subordinate level may be essential to the emergence of indeterminacy and openness at a more encompassing one. To use an analogy, on the page you are reading, black ink bonds “deterministically” with white paper according to invariant, predictable, chemical laws. But the unbendable physical routines depicted by chemistry do not prevent the letters and words from being strung together in an indeterminate and novel way at another level of activity and being. In order to write this sentence by using an unprecedented sequence of letters, I do not have to petition the gods of chemistry to relax their wonted rigor; instead I want them to keep on being remorselessly consistent.

Similarly, even though the same rules of grammar are being followed in the writing of each essay in this journal, this formal rigidity does not forbid an opening or indeterminacy that allows each author to write something completely unprecedented. Consistent grammatical “laws” both constrain and render possible the emergence of new meaning on each page. Analogously, determinism in physical and chemical processes need not prevent indeterminacy at the level of informational sequencing of nucleotides in a DNA molecule (Polanyi 1969, 225–39). Nor would physical determinism at a hierarchically subordinate level in nature prohibit the emergence of free will at the level of human existence. Russell’s assumption that we need to look to physics to find a fundamental understanding of nature may have led him to assume that if theology cannot locate nature’s openness to freedom and providential influence *primarily* at the quantum level, there is a danger that determinism will creep into every other level of nature’s emergence.

In conclusion, however, I want to thank Russell for his tireless work on the question of divine action. It has provided a needed stimulus to contemporary theology, and I fully expect that his response to my comments will only advance the conversation he has so creatively initiated.

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