NATURAL LAWS AND DIVINE INTERVENTION: WHAT DIFFERENCE DOES BEING PENTECOSTAL OR CHARISMATIC MAKE?

by Amos Yong

Abstract. The question about divine action remains contested in the discussion between theology and science. This issue is further exacerbated with the entry of pentecostals and charismatics into the conversation, especially with their emphases on divine intervention and miracles. I explore what happens at the intersection of these discourses, identifying first how the concept of "laws of nature" has developed in theology and science and then probing what pentecostal-charismatic insights might add into the mix. Drawing from the triadic and evolutionary metaphysics of Charles Sanders Peirce, I propose a reconsideration of the "laws of nature" as habitual, dynamic, and general but nevertheless real tendencies through which the Holy Spirit invites the world to inhabit the coming kingdom of God. This proposal contributes to the articulation of an authentic Pentecostal-charismatic witness at the theology-and-science table while also enabling a more plausible and coherent account of divine action for pentecostal-charismatic piety and Christian practice in the twenty-first century.

Keywords: eschatology; Holy Spirit; miracles; natural laws/laws of nature; Charles Peirce; pentecostal theology

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This essay explores what happens when the discussion about divine action in theology and science is seen from a Pentecostal-charismatic (PC) perspective.[1] I believe the invocation of such a distinct epistemic sensibility in the theology-and-science arena will be a catalyst for a productive conversation. I would wager that the PC experience will open up new questions and perhaps lead to some fresh insights on the topic of divine action. More to the point, this thought experiment is motivated by the conviction that

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current work in theology and science stands to gain from the contributions of specific (rather than generic) Christian perspectives heretofore absent from the dialogue.[2] I also am convinced that PC scholarship will benefit from engaging issues in theology and science for at least two reasons. First, from the beginning of the now 100-year-old movement, modern Pentecostalism and its charismatic renewal traditions have embraced modern science, especially its technological and communications media, but have neglected to think through the theological questions pertaining to this set of practices. Second, such an exercise will chasten, sharpen, and even transform PC theological reflection as it engages the wider conversation.[3]

I argue here that a PC perspective invites rethinking the notion of divine action in pneumatological and eschatological terms. By this, I mean that God's action in a scientific and lawful world can be profitably illuminated when conceived in terms of the Holy Spirit and that this is suggestive of divine activity as occurring, in a sense, "from the future."[4] I explore this hypothesis in five steps, correlating with the five sections of this essay, by (1) showing how the apocalypticism, miraculous supernaturalism, and divine interventionism of the PC worldview is conflicted because it uncritically accepts certain debated notions about the laws of nature; (2) briefly sketching the history and then laying out a philosophical typology of the idea of natural laws; (3) showing how these developments in modern science and philosophy have constrained theological reflection on miracles, prayer, and divine providential action; (4) developing an understanding of the laws of nature as habitual, dynamic, and teleological in dialogue with the American scientist-philosopher, Charles Sanders Peirce; and (5) bringing such a triadic view of the laws of nature into dialogue with the pneumatological, charismatic, and eschatological sensibilities of the PC imagination. In the end, I hope to both further discussion on divine action in theology and science from a PC perspective, and provide a more plausible and coherent account of divine action for PC piety and practice in the twenty-first century.

Divine Action in Pentecostal-Charismatic Perspective: Challenges and Possibilities

PC piety and spirituality assumes God is present and active in the world. In this section, I elaborate on what it has meant historically for PC theology to affirm divine action. I show that although PC theology has always sought to ground its beliefs and practices in the apostolic witness of the New Testament, there are alternative readings of the canonical narratives that invite different understandings of divine action that may not be as conflicted in the world of modern science.

At the core of the PC experience is a palpable, tangible, kinesthetic encounter with the living God. This foundational conviction is most clearly manifest in the various spiritual or charismatic gifts of the Spirit prevalent

in PC worship: tongues and prophecies, healings, and miracles. In fact, in some PC circles, speaking in tongues (glossolalia) is considered to be an evidential sign of the speaker's having received the gift or baptism of the Holy Spirit (McGee 1991). More important, in almost all PC contexts, God is believed to respond to the earnest and intercessory prayers of the saints through the meeting of human needs, the healing of sick and diseased bodies, and the provision of miracles.[5]

Most PC Christians expect God's ongoing intervention in the same manner as divine action was displayed in the lives of the earliest Christians. In their fairly straightforward and literal reading of the New Testament narrative, God healed the sick, cleansed lepers, and raised the dead by the power of the Holy Spirit given on the day of Pentecost—doing all of this in response to the prayers and requests of God's people. As Jesus taught, "Ask, and it will be given to you; search, and you will find; knock, and the door will be opened for you" (Luke 11:9 NRSV). Of course, God can and does also act sovereignly, before prayers are offered up, to reveal God's power, goodness, and glory, and PC Christians are grateful for this when it occurs. However, PC beliefs in an interventionist God are based on their sense of following in the footsteps of the early Christians as participants in an ongoing drama in which God is the major actor while they are the minor cast. In fact, it is precisely when human beings cry out to God in prayers and supplications when they are incapable of remedying their own situations that God's miraculous and timely interventions are most undeniable.

This evidentialist aspect of PC theology of divine intervention needs further comment. For lay PC believers, what counts evidentially for them is not what counts as evidence in formal argumentation. Rather, PC piety recognizes divine presence and agency whenever things are otherwise inexplicable. In a sense, theirs is a hermeneutics of charity: What is impossible for human beings can be made possible only if God intervenes.[6] In that sense, PC Christians embrace a supernaturalist worldview in opposition to both the cessationism of much of fundamentalist Christianity on the right and the naturalism of some branches of liberal Protestantism on the left. These were the dominant theological options during the first half of the twentieth century against which early modern Pentecostals reacted and with which many PC Christians continue to wrestle in sorting out their theological commitments. Cessationism limited the miraculous workings of the Holy Spirit to the apostolic age and therefore rejected PC manifestations as spurious rather than religiously authentic. PC spirituality insists that the charisms of the Spirit have never been revoked and that, in fact, there has been an intensification of the Spirit's powerful workings in and through the modern PC renewal.[7]

On the other side, the theological naturalism that emerged during the first half of the twentieth century spurred PCs to adopt a supernaturalistic

view of divine action. PCs resisted naturalistic definitions of what was possible (or not); they were interested, rather, in the God who could bring about what could not be accomplished by ordinary means. PC supernaturalism questioned neither the logical nor the metaphysical underpinnings of the naturalistic paradigm. In fact, supernaturalism actually requires a fairly robust view of nature governed by physical laws to begin with, because without this all-encompassing framework, divine signs, wonders, and miracles would not stand out from such laws and thereby would lose much of their capacity to evoke astonishment.

Ironically, then, it was this assumption regarding the laws of nature propounded within a naturalistic framework that secured the interventionist and supernaturalistic worldview of PC Christianity. After all, if the laws of nature dictated that things happen in this or that way, only the supernatural intervention of God into the natural order of things could cause events to turn out differently. At the same time, it was this unquestioning view of natural laws that rendered PC supernaturalism and interventionism increasingly problematic vis-à-vis developments in modern science.

Before we demonstrate this claim through a brief history of the idea of natural laws, we need to point out that for all their reliance on the apostolic witness to undergird their expectancy of miracles, PC Christians have not usually noticed that the earliest Christians did not have similar assumptions regarding the laws of nature. Whereas PC supernaturalism and interventionism contest the naturalistic paradigm, early Christian miracles opposed not naturalism—an Enlightenment and post-Enlightenment phenomenon—but pagan magical practices (Kee 1986; Neusner 1989; Reimer 2002); God's power was needed not to overthrow the laws of nature but to expose the futility of pagan magic. More important, divinely wrought miracles were intended not to reveal God as more powerful than the laws of nature but to validate the ministry of Jesus and to produce faith in his announcement of the coming kingdom of God.[8] Might it be that the PC appeal to the canonical witness heretofore has been selective, in a sense driven by contemporary apologetic interests shaped by popular understandings of how physical laws work? If so, how might a PC reading of the New Testament on its own terms rather than that of modernity's inform an alternative, no less pentecostal or charismatic, view of divine action?

The Laws of Nature: Historical and Philosophical Perspectives

Our present understanding of the laws of nature is the result of discussions and debates going back more than two thousand years. In the following overview, we survey the major historical developments of the prescientific and scientific concepts and map out a basic typology of contemporary philosophical views. Having a clear comprehension of the issues will en-

able us to better appreciate the specifically theological challenges related to divine action.

Although we should be wary of generalizations, it is fair to say that the ancient Greeks and Hebrews had contrasting views of the way in which the world worked.[9] Whereas the Greeks believed in a rationally ordered universe that even the gods and their ideas were subject to, the Hebrews affirmed instead an only God who created the world, established covenants with creatures, and made promises to the people of God—all of which implied that the world was under divine control. Thomas Aquinas attempted to hold both views together—for example, through the doctrine of divine simplicity, which fused the divine mind and the divine will—but what emerged from the medieval discussions was a voluntarist theology in which the world and all its events is the result of the immutable decrees and dictates of an eternal and omnipotent God (see Oakley 2005, chap. 2; Oakley 1984).

This theological universalism and determinism was transformed over the next few centuries into the idea of a mechanistic and law-governed universe, a process aided by the rise of modern science. The seventeenth century was a crucial period that saw the formulation of Johannes Kepler's geometrically and algebraically articulated laws of planetary motion, Galileo's principle of inertia, Robert Boyle's laws of gases, G. W. Leibniz's law of conservation of kinetic energy, and Isaac Newton's three laws of motion and law of universal gravitation, which were applicable not only to celestial but also to terrestrial bodies, among other scientific breakthroughs (Steinle 1995). In keeping with these discoveries, philosopher-theologians such as René Descartes began to imagine a lawful and mechanistic universe, especially because the laws of nature could be mathematically quantified (Descartes [1983] 1984, 76–77 [II.64]). Continued advances along this front would produce claims such as those made by the French mathematician and astronomer Pierre-Simon Laplace (1749–1827) that if at any instant the positions, velocities, and accelerations of all things could be known, the entire future of the universe and all of its parts could be predicted (Green 1995, 13–15). Clearly, by the eighteenth century, the regularities of the world once thought to be the product of the divine will were naturalized and dislodged from their theistic underpinnings. Developments in the nineteenth and early twentieth centuries, especially James Clerk Maxwell's discoveries regarding electromagnetism and Albert Einstein's theories of relativity, further confirmed the view of the world as a lawfully organized space-time system of interconnected parts.

Such mechanistic laws of nature would undergo one more set of transformations in the twentieth century. The advent of quantum mechanics, while also deterministic at the level of the Schrödinger equation for the wave function, has invited a rethinking of the laws of nature along three lines.[10] First, the superposition principle suggests that quantum realities,

unlike macroscopic things which obey the laws of Newtonian physics, can be in multiple states or locations simultaneously, as long as they are not measured. This raises, second, the measurement problem: that quantum "realities" are less actualities than they are potentialities (that include possibilities and probabilities) and that such become actualities only when observed or measured. This implies, again contrary to the objective world of classical physics, that the quantum world is a dynamic sea of potentialities dependent on interaction with subjective (conscious) observers. Third, as possibilities and probabilities quantum events are not only indeterministic until measured, but Heisenberg's uncertainty principle says that it is impossible to simultaneously measure both the position and momentum of quantum particles.

The resulting picture is that two sets of laws appear to be at work in the world: classical laws that govern the behavior of large objects or systems, and quantum potentialities that describe behaviors at the microscopic level.[11] There have been attempts to unify the two domains by suggesting that with regard to macroscopic phenomena the lower possibilities at both ends of the spectrum cancel out, leaving us with increasingly probable, stable, and predictable outcomes. Although this may resolve the problem of quantum indeterminism, it raises profound questions regarding creaturely freedom and addresses neither the superposition principle nor the measurement problem.[12]

This overview of developments in the concept of natural laws sheds light on why there is no consensus today about how to understand this notion (Harré 1993). Because science does not prescribe any one view regarding the laws of nature, it has been left primarily to philosophers, including philosophers of science, to reflect on what the empirical data suggest. A number of theories have been put forward. In the following, I sketch three general approaches to laws of nature, among which there is some overlap: the necessitarian model, the regularist position, and the antirealist view.[13] There are important nuances within each approach, but I mention these only insofar as they concern our discussion about divine action and miracles.

The Necessitarian Model. The classical mechanical paradigm seems to have underwritten, in general, the necessitarian view regarding natural laws. Necessitarians say that the laws of nature are relations among universals that actually *govern* the world so that the world's particularities "obey" its legal principles, and this governance enables us to project future developments and events.[14] Laws of nature are universal truths that are ontologically real and independent of our epistemic considerations. Hence, they await our discovery and tell us what must happen, not merely what has happened or what will happen under certain conditions. The advantages of the necessitarian model include its capacity to account for why things happen as they do, to explain how we can predict what will happen or why

we can expect things to continue as they do, and to justify our claims about what might happen under counterfactual conditions. Necessitarian advocates also point out that only this view helps us distinguish between nomological statements (which describe relations among universals that admit of neither logical nor empirical exceptions) and accidental but true generalizations (which are a posteriori descriptions about particulars, without any necessary reason why they might not be otherwise).[15]

The Regularist Position. Regularists think that necessitarians are unsuccessful in making such a distinction between nomological statements (especially regarding counterfactuals that are never instantiated) and accidental but true generalizations (perhaps such a distinction should not and cannot be made). Regularists insist that necessitarians have to either overqualify their nomological statements (see further the discussion of *ceteris paribus* clauses below) in order to account for the many exceptions to the governance ascribed to natural laws or, as is more often the case, that necessitarians end up taking leave of the empirical data in order to make their metaphysical claims about the laws of nature. Regularists point out that necessitarian views are valid, if at all, only at the level of the physical sciences and not across the spectrum of the social sciences where the element of creaturely freedom wreaks havoc with deterministic theories of how the world works. In contrast, regularity views are more empirical than metaphysical, apply across the entire spectrum of the physical and social sciences, and provide a better account of free agency (Swartz 1995, 86–88).

Put positively, regularists say that the laws of nature are statements that *describe* what usually or regularly happens in the world, and such statements are contingent truths that are empirically determined (Swartz 1985). Rather than the laws of nature imposing themselves on us, we identify such laws retroactively, based on our experience and experimentation. So while the necessitarian maintains that the world has to be a certain way because of the laws of nature, the regularist answers that the world just is this way, although it could very well have been and might be otherwise. Because there is no necessity to the laws of nature, there also is no such thing as a violation of nature's laws. Now, if in this account necessitarians wonder how predictions can be made so scientific hypotheses can be tested, regularists respond that the laws of nature are empirically justified inferential rules of science that are reliable and accurate enough for scientific inquiry and practice (Lange 2000).

There are three variations of the regularity view, the first of which suggests that what we call the laws of nature are supervening descriptions of contingent and particular facts and events. Sometimes called Humean supervenience, proponents follow David Hume's view that natural laws are no more than contingent generalizations drawn from, and hence descriptions overlaid upon, experience (Lewis 1996; Loewer 2004; Beebee 2004).

Supervenient accounts are, from the standpoint of the particular data, unnecessary. From a scientific perspective, however, such descriptive generalizations are helpful and even needed, so long as they are not illegitimately extended into metaphysical claims. Ironically, it may turn out that Hume was an "imperfect regularist" because his rejection of miracles assumed a necessitarian view of the laws of nature (Swartz 1985, 107).

The second variation of the regularity view also sees the laws of nature as being descriptive rather than prescriptive but goes further to emphasize that nature's laws are approximate abstract formulations rather than completely isomorphic mappings of the world's regularities.[16] Physicist John Polkinghorne, for example, suggests that the laws of nature "can be interpreted verisimilitudinously, as the tightening grasp of an actual reality" (1999, 429). Polkinghorne is not suggesting that such lack of exactitude is due only to our epistemic limitations. Rather, the laws of nature appear as "asymptotic approximation[s] to a more subtle (and more supple) whole" (1999, 431) because reality as revealed by the new sciences—such as quantum mechanics and chaos theory—is loosely rather than rigidly structured. Such an approximationist position, however, does not merely degenerate into a constructivist position on natural laws. Rather, laws are regularities operating according to a dynamic and interrelational manner that do not necessarily impose hard-and-fast constraints on the way the world is or should be.

A third regularist interpretation of natural laws has been called the statistical or probabilistic theory. From the side of the physical sciences has emerged the notion of statistical laws—for example, "the half-life of radium is 1,600 years," meaning 50 percent of any sample of radium atoms will radioactively decay over the course of 1,600 years. Since the quantum revolution, the uncertainty principle has given further impetus to this view, especially with its probabilistic interpretation of quantum events. Regularists believe their view can accommodate either theory, especially because neither prescribes how the world must work—precisely the weakness of the necessitarian model.

The Antirealist View. The antirealist position explicitly opposes necessitarianism but also raises questions about and stretches the regularist views.[17] Antirealists make their argument at two levels. First, there is the issue of the various qualifications usually attached to how, when, or where laws work. Known in Latin as *ceteris paribus*—"with other things [being] equal"—such qualifications or provisos are claimed by antirealists to undermine the ontological status of almost all identifiable natural laws.[18] Our formulations of laws do not seem to "work" unless we manipulate the equations, redefine (seemingly constantly) the terms and assumptions, specify the variables in our experiments, or even establish limits regarding the reach of what were considered to be universal laws (Holton and Brush 2001,

195–96). Even Newton's first law of motion is stated explicitly as a contingency: Every object in a state of uniform motion tends to remain in that state of motion *unless* an external force is applied to it. If the laws of nature each require provisos of various sorts—and this applies also in the regularity view of laws as approximations of reality (as presented above)—antirealists argue, "it is impossible to fill in the proviso so as to make the resulting statement true without rendering it vacuous" (Giere 1994, 91).

Going beyond the *ceteris paribus* issue, antirealists distinguish between laws of nature as models or simulacra that are applicable to our theories about the way the world works, and laws of nature as metaphysical realities that either describe literally or govern the world. The rejection of the latter is what earns the anti-realist label, but some version of the former is what allows for scientific inquiry to proceed.[19] This reflects the empiricist bent of antirealist approaches, which insist that "the aim of science is not truth as such but only *empirical adequacy*, that is, truth with respect to the observable phenomena. . . . [The] criterion of success is not truth in every respect, but only truth with respect to what is actual and observable" (van Fraassen 1989, 192–93).

The challenges for antirealist approaches, and even for regularists, have to do with how to account for counterfactuals or inductive inferences (as both seem to assume a natural law), natural tendencies (for example, why we expect rocks to remain solid), and causation (why or how events are causally connected). It is especially difficult to be an antirealist about laws without being ad hoc about these and other nomic concepts. Precisely for this reason some philosophers have sought to develop theories about capacities or dispositions (Cartwright 1989; Molnar 2003; Mumford 1998; 2004). Even for those who retain the concept of laws of nature, such are now understood as enduring tendencies. In fact, particular things are constituted by active properties like powers and propensities rather than passive qualities like size, shape, and color, and the former are irreducible to causal laws.[20] Capacities ground our expectations—for example, that aspirin relieves headaches, that knives cut, that diamonds resist scratching. They enable us to make inferences, help us to explain counterfactuals, and contribute to a more dynamic, flexible, and interrelational account of how the world works. Unlike laws, which are often thought to provide a one-to-one correlation between causes and effects, capacities allow us to see how any event is actually a holistic nexus of many powers, dispositions, and tendencies (Chalmers 1993; 1999).

Hence, while some capacity theorists such as Nancy Cartwright and Stephen Mumford are antirealists regarding the laws of nature, most agree that an ontological and metaphysical account of capacities or dispositions does all the work (and more) natural laws were supposed to have done when formalized in the seventeenth century, but without the liabilities of the latter (Mumford 1998, chap. 10).[21] The burden placed on natural laws

to do more explanatory work than they were capable of may have derived from the legacy of the early modern thinkers who assumed a mechanistic and inert natural world consisting of discrete things and hence needed a metaphysical conception of natural laws in order to explain how things could move and interact (Mumford 2004, part I). But in this mechanistic universe, the laws of nature are caught on the horns of a dilemma: Either such laws are external to things, in which case there has been so far no plausible account of how they interact with things, or they are internal to things, in which case they either lose their capacity to govern or degenerate into a mysterious vitalism. A theory of capacities or dispositions resolves the metaphysical question of how things change, explains how potentialities or tendencies can be unactualized but yet remain real, and allows for a hierarchy of things or properties of greater or lesser range and influence. Such a capacities account of natural laws can be put to use in developing a theology of miraculous divine action.

Miracles, Prayer, and Providence: The Problem of Divine Action in Modern Theology

With this scientific and philosophical background in place, I now want to trace the developments in thinking about miracles especially since the early modern period. We begin with the response of Hume's meditation "Of Miracles," discuss the place of miracles in modern liberal theology, and then lay out a spectrum of contemporary views on miracles. Our objective is to locate PC thinking about divine action and miracles more securely on the historical and theological landscape.

We have introduced Hume as holding an early version of what is now called the regularity view of the laws of nature. Hume's regularism derived from his empiricist epistemology. In his *Enquiry Concerning Human Understanding* ([1748] 1952) Hume suggested that our experiences generate habits and expectations that are appropriately generalized in lawful terms.[22] But such generalized associations of ideas then often illegitimately mutate into propositions about metaphysical necessities (such as cause and effect). The reason why the general descriptions are allowed but not the metaphysical extensions is that our previous experiences can never guarantee future experiences, at least not at the demonstrable level (*Enq* 4.29),[23] and all it takes is one exception to falsify claims regarding metaphysical necessity.

What is interesting is that when he turned to discuss miracles in the tenth book of the *Enquiry*, Hume appears to have switched to a necessitarian view of the laws of nature. Miracle was defined there as "a transgression of a law of nature by a particular volition of the Deity, or by the interposition of some invisible agent" (*Enq* 10.90n1). This led to Hume's a priori argument against miracles: "A miracle is a violation of the laws of nature;

and as a firm and unalterable experience has established these laws, the proof against a miracle, from the very nature of the fact, is as entire as any argument from experience can possibly be imagined" (*Enq* 10.90). In addition, Hume provided a number of a posteriori arguments against miracles (*Enq* 10.92–95): (1) that miraculous claims often originate from undependable eyewitnesses; (2) that the perpetuation of miracles is often accomplished through human gullibility; (3) that the current absence of miracles also speaks against their past occurrences; and (4) that the religious ideologies that utilize miracles apologetically often contradict one another (Jewish, Christian, and Muslim views regarding the miraculous, for example). The problem, simply put, is: If the laws of nature are no more than regularities, the presence of irregularities by themselves would never amount to the kind of violation of natural laws mentioned in Hume's definition;[24] on the other hand, under the necessitarian form of the laws of nature implicit in Hume's definition, there is already an a priori impossibility of miracles considered as transgressions of such law.[25] I suggest that popular PC piety, like Hume, uncritically assumes a necessitarian position on laws of nature, although, when pressed, regularism emerges as more coherent with PC sensibilities.

In many respects, Hume's skepticism regarding miracles understood as (literal) historical events has carried the day for two hundred–plus years, especially in the tradition of liberal Protestantism running from Friedrich Schleiermacher through David Strauss and Ernst Renan to Rudolf Bultmann (see Houston 1994, esp. chaps. 5, 6, 12). Two related questions gave impetus to these developments: the issue of divine action in general, particularly as impinging on theistic notions of providence and prayer, and the problem of suffering and evil. With regard to the former, the idea of a world governed by natural laws led first to a deistic theology and later to a reinterpretation of the classic doctrines of providence and prayer, which downplayed notions of divine intervention and emphasized instead prayer's functional character. Prayer, for example, did not really induce God's action; rather, prayer results in the transformation of those who pray, produces psychological wholeness, and enables a sense of solidarity with others and an existential connection with the divine (Brown 1927; Ostrander 2000, esp. chap. 7). If miracles were considered impossible violations of a law-governed world, so was divine intervention in response to creaturely supplications. The problem of evil is implicated in liberal Protestant views regarding prayer, providence, and miracles. In fact, defending the plausibility of miracles within a scientific framework brings challenging questions to the fore: If God could intervene in response to prayer or to prevent evil, why does there seem to be so much gratuitous evil in the world? (Basinger and Basinger 1986)

This is not to say there were no moderate Protestant voices attempting to salvage the concept of miracle in response to liberal trends. C. S. Lewis

defended the idea of miracles but did so by relocating them from the modernist framework back into the religious domain (Lewis 1947; see Brown 1984). Miracles cannot be abstracted from the milieu within which they are claimed, and with regard to the miracles of specific religious traditions (in Lewis's case, Christianity), they must be considered within their wider theistic worldview. Similarly, claims regarding divine answers to prayer have to be understood within the broader context of how theists interact and interrelate with the divine, and how they view God's relationship with the world in general and with God's people in particular (Farmer 1948). In other words, a skeptical approach like Hume's will naturally generate skepticism regarding miracles, but a faith-informed approach will resist reducing miraculous events and testimonies of such.[26] Although Lewis and most conservative Protestants seek to defend the plausibility of biblical accounts of miraculous divine interventions in history, PC Christians are more interested in the miracles they believe God continues to do in the present.

Yet there is no doubt that the faith-seeking understanding approach of Lewis and others has been deeply influential in contemporary attempts to defend the idea of miracles from the Humean and skeptical critique. In the remainder of this section, I summarize three general types of apologetic approaches to miracles that draw respectively from philosophical, scientific, and theological resources. We shall find in each case an unquestioned assumption of a necessitarian philosophy of nature motivating the specific moves that are made.

When an entire worldview is factored into the equation, two philosophical approaches come to the fore. One correlates with contemporary supervenience models in seeing miracles as interpretations overlaid on events. In this view, miracles are always interpreted events, informed by specific presuppositions, shaped by varying expectations, and designed to explain life's twists and turns. Miracles are perceived by faith and provide for meaningful explanations for life's events. Hence, there are the outer facts of what happened, which can be confirmed as such by anyone, but these can also be seen and understood from different "insider" viewpoints. To the eyes of faith, miracles are inner meanings or explanations of common events the retelling of which is designed to move the audience or readers to greater and deeper faith (John 2004). This hermeneutical analysis, of course, risks viewing miracles in epistemological rather than ontological terms. Instead of miracles denoting actual (historical) events, they become subjective interpretations that supervene on objective facts.

Alongside the hermeneutical approach to miracles is a philosophical interpretation of miracles understood as noncausal divine actions. This view assumes that miracles are special acts of God that are beneficial, marvelous, and religiously significant, but it goes on to articulate how they are also not violations of the laws of nature. Resources are mined from contemporary philosophy of action, which is based on theories of intention

rather than on theories of causation. When we say, for example, "I raise my arm," there is no need to explain the causal joints activated in the raising of the arm. Such are "basic actions" that tell us not how but that they happened. "Analogously, if we think of miracles as basic divine actions, we do not have to think of a miracle as coming about through the operation of some kind of occult force" (Corner 2007, 3; see Corner 2005, chap. 3). If laws of nature are not transgressed when free agents bring about events, why would such violations occur when God acts? But then a major question arises about how miracles are identified. Linking back to the hermeneutic approach, miracles through divine basic actions are events that evoke thanksgiving, praise, and worship. This view of miracles provides a plausible alternative to the causal theories dominating the discussion. However, it also suggests a nonsupernaturalist and even noninterventionist interpretation of divine action that privileges a governance view of the laws of nature. Is this a problem for a PC theology of miracles?

Now, such a noninterventionist approach is also predominant in the current discussions in science-and-theology circles regarding divine action (Wildman 2004). I elsewhere summarize the issues (Yong forthcoming), so I reiterate here only that the goal has been to think about divine action as objective but not as violating the laws of nature.[27] Some proponents therefore have sought to locate divine action at the level of quantum indeterminacy because God's action in that domain could be worked out amid the possibilities and probabilities of the quantum realm, while others think it more plausible that God acts through informing the initial conditions of chaotic or dissipative systems. Although the latter proposal has not gathered much support,[28] there also have been critical questions raised about how divine action at the quantum level can secure timely responses in the macroscopic domains within which we live our lives.[29]

A third scientific theory of divine action suggests a kind of interventionist God who works miracles by destroying or creating mass/energy units in the world. Similar to how the world was originally created, miracles happen because God changes "the material conditions to which the laws of nature apply" (Larmer 1988, 20).[30] This interventionist proposal has been largely ignored in the science-and-theology discussion. Yet it, along with the quantum and chaos divine action theories, still presumes that the laws of nature constrain divine action in some way and thus need to be made more flexible if miracles are to occur. PC believers (along with other Christians) would simply make the opposite assumption: It is the existence and activity of God that sustains the laws of nature rather than the other way around.

This leads to the explicitly theological defense not only of miracles but also of the laws of nature. Rather than discounting either the philosophical or scientific arguments, a theological approach assumes the kind of theistic worldview recommended by Lewis, and goes further to argue that only

theism can adequately account for the laws of nature (Foster 2004) and that, in any theistic account, natural laws do not govern the universe on their own. Instead, it is God who has created the world and its laws so as to accomplish God's goals, and as creator of nature's laws God is also free to supersede, alleviate, or interact with such laws as befits God's purposes (Swinburne 1970; Purtill 1997; Haarsma 2003).

In some respects, such a forthrightly theological approach is most in tune with PC sensibilities. Further, when extrapolated, such views have been featured in conservative evangelical apologetics regarding miracles in ways that resonate with PC commitments.[31] Such overtly theistic assumptions neither interrogate the necessitarian model of laws of nature nor seem to have much use for the spectrum of regularity views.

Rethinking the Laws of Nature: A Dialogue with Charles S. Peirce

Given the various regularity and even antirealist theories of natural laws surveyed above, why is it that theological discussions of miracles and the laws of nature still seem, for the most part, to presuppose necessitarianism? I suspect that the ghost of Hume continues to make his presence felt whenever the necessitarian head surfaces, even though this is only one side of Hume's (inconsistent) position. Is theology beholden to the conflicted Humean account, and if not, what metaphysical alternatives are available for consideration?

I want to turn briefly to the thought of Charles Sanders Peirce (1839–1914), an American scientist and perhaps its most original philosopher, for help with how to rethink the laws of nature. I am convinced that Peirce's triadic and evolutionary metaphysics can assist PC theologians with the task of developing a coherent and scientifically plausible account of miraculous divine action vis-à-vis the laws of nature.[32] In what follows, I sketch the issues that shaped and informed Peirce's metaphysical project and then present his understanding of the laws of nature as habitual, dynamic, and general but yet real tendencies. Our goal is to lay the metaphysical ground for a PC theology of miracles to be proposed in the last section.

Peirce is a complex thinker, and we have neither the time nor the space to adequately discuss the entirety of his scientific metaphysics.[33] Two basic points, however, should be kept in view. Foremost, Peirce's basic metaphysical categories of Firstness (quality, immediacy, or potentiality—the *hows* of things), Secondness (fact, opposition/resistance, or actuality—the *whats* of things), and Thirdness (law, intelligibility, or possibility—the *whence/whithers* of things) can be seen as responses to the inadequacies, as he understood them, of the categorical systems of his predecessors. Whereas Plato's dualism promoted a static worldview in which time is only the moving image of eternity, and Aristotle's substance metaphysics asserted but could not account for genuinely changing things, Peirce's Thirdness

articulated how potencies could be transformed into actuality—through lawful possibilities. Against the medieval nominalism that denied the reality of abstract entities (reducing universals to mere concepts) and insisted only individuals exist, Peirce argued that universals were lawful and real tendencies or habits, not eternal or Platonic essences, that effected qualities and perpetuated facts. Finally, if Immanuel Kant's critical philosophy promoted no more than a phenomenological metaphysics and G. W. F. Hegel's *Geist* sublated history, Peirce's triadic metaphysics neither succumbed to Kant's skepticism (because reality is now triadically related rather than dyadically divided between phenomenon and noumena) nor lost sight of real history (because Secondness is now interrelated with Thirdness rather than subordinated to and overcome by it).[34] This is not to say that Peirce's triadic metaphysics neatly resolves these major disputes in the history of philosophy. It is to say the Peircean construct is at least suggestive of an alternative to the reigning philosophical paradigms.

This leads, second, to the more fundamental backdrop against which Peirce's triadic metaphysics emerged: that of Darwin's evolutionary hypothesis (Wiener 1965, chap. 4; Esposito 1980; Hausman 1993; Reynolds 2002). Peirce approved in general of Darwin's theory of evolution through "fortuitous variation" (6.296 passim).[35] He did question whether Darwinian natural selection could account for evolutionary progress. But he also rejected any form of metaphysical determinism because that did not square with the statistical theories then emerging in not only the biological but also the chemical, mechanical, and sociological sciences. What was needed was a kind of final cause to draw the evolutionary process forward, one that was neither random nor mechanistic but sufficiently open-ended so as to allow for the emergence of novelty. Part of the answer Peirce proposed was encapsulated in his category of Thirdness: law considered as habitual, dynamic, and general but yet real tendencies. Let us examine each of these features in turn.

What does it mean to say, as Peirce does, that laws are habits and that reality consists of "effete mind, inveterate habits becoming physical laws" (6.25)?[36] There are at least three aspects to this claim. First, the basic analogy is human habit-taking and habit-changing defined as "a modification of a person's tendencies toward action, resulting from previous experiences or from previous exertions of his will or acts, or from a complexus of both kinds of causes" (5.476). Note here that habits are not only instinctive physiological reactions but also consciously developed tendencies and general behaviors, all of which combine to shape future actions. From this, second, we observe scientific inquiry as itself a specific form of habitual action involving a recurrent process of hypothesis formation, prediction, testing, and revision (Legg 1999). If habitual creatures come to determine the laws of nature through habitual processes, third, Peirce surmises (or hypothesizes), nature itself is habitual:

> . . . diversification is the vestige of chance spontaneity; and wherever diversity is increasing, there chance must be operative. On the other hand, wherever uniformity is increasing, habit must be operative. . . . [M]echanical laws are nothing but acquired habits, like all the regularities of mind, including the tendency to take habits, itself; and that this action of habit is nothing but generalization. (6.267, 6.268)

To say that natural laws are habits is to say that nature unfolds or behaves according to rulelike processes.

Note that Peirce assumes the rhythms of nature vacillate between chance and irregularity on the one hand and uniformity and regularity on the other. In the Peircean ontology, habits or tendencies are what bring the latter out of the former. Hence they parallel the powers, properties, and dispositions suggested by some of the contemporary theorists discussed above.[37] As important, however, Peirce's habits are real dispositions or legal tendencies (against medieval nominalism) that function as final causes. Menno Hulswit suggests: "Final causes are basically habits: they ('habitually') direct processes toward an end state. Like human habits, habits of nature (laws of nature) are final causes because they display tendencies toward an end state. . . . Moreover, habits are not static entities, for they may evolve in the course of time. Peirce called the possible evolution of final causes 'developmental teleology'" (Hulswit 1997, 742–43).

If the laws of nature are habits that function teleologically, two concerns immediately arise: that introducing teleology undermines the possibility of developing a coherent naturalistic account of the laws of nature, and that it provides a "back door" (or front door, in this case) for the reintroduction of God as the final and determining cause of nature's events. However, built into Peirce's triadic metaphysics are two further notions that satisfactorily meet both of these potential objections. We look first at the evolutionary character of Peirce's notions of habit and law, then turn to a discussion of how habitual laws function through generalities rather than as an established blueprint for future events.

What does it mean to say, with Peirce, that laws are not static, that they are evolutionary, developmental, and dynamic? Peirce put it this way: that "conformity with law is a fact requiring to be explained; and since law in general cannot be explained by any law in particular, the explanation must consist in showing how law is developed out of pure chance, irregularity, and indeterminacy" (1.407; see 6.46). In fact, chance is needed to explain growth and evolving complexity. From this, Peirce reasoned, "Now the only possible way of accounting for the laws of nature and for uniformity in general is to suppose them results of evolution. This supposes them not to be absolute, not to be obeyed precisely. It makes an element of indeterminacy, spontaneity, or absolute chance in nature" (6.13). Evolution cannot be guided merely by mechanical principles (as suggested by Social Darwinists such as Herbert Spencer) because law itself is a result of evolu-

tion and because exact law cannot produce heterogeneity (6.14). But this means that even laws of nature "have naturally grown up. . . . In the original chaos, where there was no regularity, there was no existence" (1.175). More precisely,

> uniformities in the modes of action of things have come about by their taking habits. At present, the course of events is approximately determined by law. In the past that approximation was less perfect; in the future it will be more perfect. The tendency to obey laws has always been and always will be growing. . . . Moreover, all things have a tendency to take habits. . . . This tendency itself constitutes a regularity, and is continually on the increase. . . . According to this, three elements are active in the world: first, chance; second, law; and third, habit-taking. (1.409)[38]

To recapitulate, for Peirce, laws derive from chance developments and indeterminacies in the evolutionary process and also continue to evolve. This locates Peirce squarely in the regularity camp, fully consistent with the probability model of quantum physics. Yet even his suggestion that the laws of nature have evolved and continue to evolve is not bizarre. Contemporary physicists and philosophers of science have pondered the implications of the measurement problem in quantum mechanics for understanding how natural laws are interrelated with consciousness. They also have suggested that the higher temperatures closer to the Big Bang may not have operated under the same laws as do things at lower temperatures and wondered about whether or not it makes sense to talk about biological laws prior to the emergence of life. These considerations have led some to conclude that "As the universe evolved, the circumstances created their own laws" (Thirring 1995, 135) and to "concede that as the universe evolves, so new laws emerge" (Davies 1995, 267). The point is both that Peirce's proposals are not as outlandish as they may seem on first sight and that his teleological intuitions are nevertheless naturalistically grounded in the evolutionary history of the world.

But if laws are teleological habits that are dynamic (evolving), what, if any, is their final destination? Classic teleology in the tradition of natural theology insisted that the final cause existed in the divine mind and thus carried the creation onward toward its fulfillment (usually articulated in theistic terms). For Peirce, however, the evolutionary or developmental teleology did not include any blueprint for how things must turn out, much less a divinely orchestrated consummation; rather, the habitual laws of nature evolved only according to general tendencies. A law or habit is nothing less than

> a tendency to strengthen itself. Evidently it must be a tendency toward generalization,—a generalizing tendency. . . . Now the generalizing tendency is the great law of mind, the law of association, the law of habit taking. Hence I was led to the hypothesis that the laws of the universe have been formed under a universal tendency of all things toward generalization and habit-taking. (7.515)

Peirce associated law and generalization with mind, thus accounting for consciousness under his category of Thirdness.[39] More important for our purposes is that this law of habit-taking functions only in vague and general rather than fully determinate terms. Peirce puts it this way:

> . . . all causation divides into two grand branches, the efficient, or forceful; and the ideal, or final. If we are to conserve the truth of that statement, we must understand by final causation that mode of bringing facts about according to which a general description of result is made to come about, quite irrespective of any compulsion for it to come about in this or that particular way; although the means may be adapted to the end. The general result may be brought about at one time in one way, and at another time in another way. Final causation does not determine in what particular way it is to be brought about, but only that the result shall have a certain general character. (1.211; see 6.63)[40]

Peirce's point is twofold. Rather than being precise blueprints of development, laws considered as evolving habits are general pathways constituted in part by chance or fortuitous events; and natural laws exist not as determining actualities but as indeterminate possibilities.[41] In fact, if mechanical behaviors are predetermined and irreversible, final causes are creative, unpredictable, and irreducible to preexisting causes, parts, or antecedents. Because habitual laws as final causes provide only general guidelines for development, end states can be reached in different ways. Precisely for the same reason, in the Peircean system "final causes cannot specify exact results" (Hulswit 1996, 195).

It should now be clear why Peirce's final cause does not invoke God or supernatural blueprints. Such may be theological addenda motivated by the posture of faith, but they are not essential to Peirce's teleology. In fact, Peirce's project actually may be seen as an attempt to chart a middle way between Ralph Waldo Emerson's romanticist divinization of nature and William James's pragmatist pluralization of nature (Colapietro 2004). Peirce's triadic metaphysics left room for God but attempted a fully naturalistic account through retrieval and rethinking of Aristotle's final causes. Where Aristotle presupposed fixed and immutable essences, Peirce suggests *finious* processes tending toward general final states (7.471).

In sum, for Peirce the laws of nature are habitual tendencies that function teleologically like final causes. However, such laws have emerged out of the fortuitous variations of the evolutionary process, even as they provide general (rather than specific) pathways for nature's evolution.

Interestingly, Peirce did not apply his theory of laws of nature to his thinking about miracles. He accepted the possibility of miracles but approached them in almost typically Humean fashion: "I do not see how we can ascertain *a priori* whether *miracles* (be they violations of the laws of nature or not) and special providences take place or not. . . . Miracles . . . are always *sui generis*. . . . The isolatedness of the miracle is really no argument against its reality . . . , but it effectively prevents our ever having suf-

ficient evidence of them" (6.515).[42] The question is not so much about evidence as about how we understand the laws of nature, and on this point Peirce has much more to offer than has been previously mined toward a scientifically informed and theologically coherent account of divine action.

The Laws of Nature and the Pentecostal-Charismatic Imagination: Sketching a Pneumato-Eschatological Theology of Divine Action

Attempts to retrieve Peirce's triadic metaphysics for a theology of nature and of evolution have already begun to appear (see Robinson 2004). In this concluding section, I draw the threads of the preceding discussions together in order to reengage the questions about divine action in a world of natural laws from a PC perspective. I suggest that Peirce's triadic metaphysics and theory of natural laws as habitual, dynamic, and general are helpful for PCs who are attempting to formulate a theology of divine action in dialogue with contemporary science. The hypothesis I propose thus concerns a pneumatological and charismatic view of divine action that sees the Holy Spirit as working in and through nature and its laws but also proleptically and continually transforming such in anticipation of the coming kingdom. I outline the basic argument in three steps and then comment on a PC theology of miracles vis-à-vis the laws of nature.

1. I begin with the PC (and Christian) conviction linking the mighty acts of God with the work of the Holy Spirit. The paradigmatic act of the Holy Spirit for Christians is seen in the life of Jesus Christ, the anointed one. But the life of Christ is itself an announcement of the coming kingdom of God. In fact, the miracles of Jesus are themselves signals of his messianic anointing through which the eschatological presence of God is pronounced (Twelftree 1999, chap. 10; see Ervin 2002). Jesus was raised from the dead by the Holy Spirit (Romans 1:4), who is the power of the coming age (Romans 8:23; 1 Corinthians 1:22; Ephesians 1:13–14). In the life, death, and resurrection of Christ, then, the Spirit of God proleptically announces the arrival of the coming kingdom of God.

2. This christological and pneumatological starting point leads to the hypothesis that the life of Christ in general and the resurrection in particular could be a prototype, perhaps "the first instance of the kind of transformation that awaits the entire cosmos" (Murphy 1995, 387; see Peters 1999, 323–26). This is first and foremost a theological claim derived from the trinitarian narrative of God acting proleptically in Christ by the Holy Spirit.[43] At the same time, given the theory of natural laws as evolutionary and developmental, I suggest that the events of the Incarnation and Pentecost manifest the "emergence of new laws" that constitute the ways of the world to come (Russell 2006a, 131).[44] Within a necessitarian framework, no new laws could appear. However, if Peirce and others cited above are

correct, the laws of nature do not function as rigid governors in a mechanical system.[45] Religiously understood miracles could thereby be seen as basic divine actions that work within rather than violate the fundamental character of the created order.

3. This framework suggests a view of divine action that is charismatically accomplished in anticipation of the coming kingdom. In the Hebrew Bible, the emergent laws of nature can be seen to represent the basic commitments of a covenant-making God that presumes human response and divine counterresponse (Morris and Petcher 2006, 139–43). But God's covenants are never deterministic grids into which free agents must fit.[46] Rather, they constitute God's general, albeit eschatological, intentions, suggested to human creatures, the final shape and realization of which depend at least in part on creaturely response. The fallenness of human beings means that most free agents are not amenable to cooperating with God or acting according to God's general intentions for the world. What we need is not more freedom but divine empowerment and enablement so the kingdom can be ushered into the present.

The PC perspective registers itself most palpably here. Extrapolating from Lewis's suggestion that the miracles of the New Creation are glimpses of the coming kingdom when the relations between the world and God as S/spirit will have been transformed (1947, 141–56), I suggest that the charismatic gifts and miracles as recorded in the New Testament and witnessed to by PC piety and practice are proleptic signs of the world to come. If the Holy Spirit is the "nexus between Christ's resurrection and the future resurrection" (Thomas 2002, 267–68), so also does the Spirit bring about our new participation in God's eternal life in the here and now. More to the point, Christian life in the Spirit suggests our capacity in this world to walk according to the "laws" of the coming kingdom. The current "laws of nature" can now be understood as habitual, dynamic, and general but nevertheless real tendencies through which the Holy Spirit invites and empowers free creatures to inhabit the eschatological presence of God. In this charismatic intersubjectivity, wherein human creatures come to know, seek out, and embody the living presence and activity of God, we are periodically given foretastes of the emergence of what George Ellis calls "a new regime of behavior of matter (cf. a phase transition), where apparently different rules apply (e.g., true top-down action of mind on matter). . . . Thus the extraordinary would be incorporated within the regular behavior of matter, and neither the violation of the rights of matter nor the overriding of the chosen laws of nature would occur" (1995, 386).

Such a pneumatic, charismatic, and eschatological approach correlates well with a theology of miraculous divine action that does not violate the laws of nature. In this view, charismatic manifestations in general and authentic miracles in particular are interruptions of habitual events that in turn open up the possibility of the emergence of new habits precisely be-

cause their full meaning can be proleptically discerned only in light of the coming kingdom.[47] Hence there is a hermeneutical aspect to the reality of miracles that is intrinsically connected to how interpreters understand larger issues. In the Christian case, these issues are related to God's purposes of validating the person of Jesus through his resurrection and ascension, legitimating the activity of the apostolic believers, and, most important for PC purposes, fostering faith in the Christian community in anticipation of the culmination of salvation history (Myllykoski 2006). As an extension of Lewis's reminder, miracles make sense only within the wider teleological framework of Christian eschatology.

Further, miracles are never merely a claim about nature on its own or even about nature's laws. Miracles involve free agents—their actions and reactions in relationship to God. This locates divine action most meaningfully in the interpersonal and intersubjective sphere: first in the intratrinitarian life of God, and second in the divine-human interchange (Stoeger 1995, 259–60). The charism of miracles points not so much to a supernaturalistic aspect that overcomes the laws of nature as to the interrelational domain within which human beings live and move in response to God's covenantal initiative. Here the evolutionary or developmental aspect of Peirce's theory of natural laws allows for the proleptic interruption of the coming kingdom in the here and now, even while we await the transformation of creation as a whole into the eschatological rule of God.

But such transformation, as Peirce's rule of generality would caution us, involves a genuine interaction between God and the world so that what is coming is the kingdom, but not any specific form of it other than that proleptically revealed in the trinitarian narrative of God. Just as the laws of nature have evolved from chance (see Bartholomew 1984), so the coming reign of God will be unpredictably shaped by the agency of free creatures in the present world. The eschatological future is open, conceivable only in general terms because what is to appear remains indeterminate in important respects. This does not mean God's intentions might be thwarted or that what has been revealed in Christ by the power of the Spirit will not be recognizable. It means that we know in part both because we see only in part and because the future consists of real (and indeed miraculous) tendencies and possibilities rather than only of predetermined actualities.

Conclusion

The PC imagination has unique perspectives, sensibilities, and commitments that present both challenges and opportunities for PC scholars who seek to approach the science-and-religion (or science-and-theology) dialogue table. The main challenge engaged here has concerned how to make sense of the PC conviction regarding a miracle-working God in a world governed by natural law and defined by modern science. In fact, it is precisely the PC commitment to a robust theology of divine action that has

motivated our laborious explorations of the concept of natural law from scientific, philosophical, and theological perspectives.

With help from the triadic metaphysics of Charles Sanders Peirce, I have suggested that the PC imagination invites a rethinking of the laws of nature and divine action within what might be called a pneumato-eschatological framework. My proposal is that although the laws of nature should be defined in habitual, dynamic, and general rather than necessitarian terms, they are nonetheless real possibilities and tendencies through which the Holy Spirit is bringing about the coming kingdom. Hence the laws of nature are amenable to the basic actions of God and sufficiently flexible so that they can be miraculously redeemed to usher in the patterns and habits of the coming world. This results in a unique PC contribution to a theology of miraculous divine action that is consistent with the laws of nature as understood by modern science and also preserves fundamental PC commitments about God's redemptive presence and activity in the world. In the process, PC may help other Christians with similar religious convictions to think through and respond to these matters in dialogue with the sciences.

Notes

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1. In this article, I assume that the PC experience and perspective is related to but still distinctive within the broader evangelical and Christian frames of references. This means that I do not necessarily think what I say here about divine action, the Holy Spirit, and the charismatic gifts applies *only* to PC spirituality and theology. However, I do think that the overall approach—the sum of the parts of the argument, as it were—does reflect a distinctive PC contribution to the theology-and-science discussion.
2. Another example is the more recent emergence of specifically Orthodox Christian perspectives in the discussion (Nesteruk 2003; Knight 2007).
3. The preliminary fruits of PC explorations in theology and science are presented in Yong 2005a, b.
4. Here I am building on and extending my previous work (Yong 2005c; 2006).
5. A recent survey confirmed that Pentecostals and charismatics are much more inclined to believe in miracles than are other Christians. See "Spirit and Power: A 10-Country Survey of Pentecostals" (Pew Research Center 2006).
6. Thus again, Jesus' words "What is impossible for mortals is possible for God" (Luke 18:27) and the declaration of the angel to Mary: "For nothing will be impossible with God" (Luke 1:37 NRSV).
7. The definitive response to cessationism has been John Ruthven's (1993).
8. This christological significance of the miraculous in especially the Lukan writings is articulated by Marilyn McCord Adams (1993) and Daniel Marguerat (2003, 114).
9. The most succinct history of laws of nature I have found is Dorato 2005, chap. 1.
10. For details, see the essays on the science of quantum mechanics in part I of Russell et al. 2001; see also Heathcote 1996 and Forge 1996 for further discussion of the complexities related to laws of nature when we move from classical to quantum physics.
11. These two domains and their respective sets of natural laws are summarized by Roger Penrose in the first two chapters of Penrose et al. 1997.

12. It also leaves untouched the phenomenon of quantum nonlocality or entanglement, which suggests that communication at the quantum level is not constrained by the physics of relativity. I leave this matter to one side because it does not relate directly to the question of how quantum theory suggests a revised understanding of the laws of nature as formulated by classical physics.

13. I do not discuss the conventionalist or contextualist view of laws of nature; see, for instance, the editorial introduction to Faye et al. 2005, 35–41.

14. Necessitarianism goes by other names as well, including universal or immanent realism, advocated by David Armstrong (1983); nomic realism, defended by John Carroll (1994); and nomic Platonism, propounded by Fred Dretske (2004) and Michael Tooley (2004).

15. So, in physics, "All uranium spheres are less than a mile in diameter" is a nomological statement because uranium's critical mass does not allow large uranium spheres to exist, while "All gold spheres are less than a mile in diameter" is an accidental generalization. In biology, "The heart pumps to circulate blood" tells us about the lawful functions of heart pumping, while "The heart pumps to make noise" tells us about an accidental side effect of heart pumping (see Carroll 2004, 2–3; Buller 1999, 6–7).

16. Interestingly, this view has been quite attractive to scientist-theologians such as William Stoeger (1999, 209–19) and Niels Gregersen (2006, 221–22). Not coincidentally, I would add, natural scientist Robert Boyle (1627–1691) was one of the first to defend what is now called the regularity view because of his concern to protect God's freedom to decree how the world might or should otherwise be (see Dorato 2005, 25).

17. However, regulatarians such as Stephen Mumford explicitly identify themselves as antirealists regarding laws of nature. In place of laws of nature Mumford develops a metaphysical theory of powers and dispositions to account for the world's regularities.

18. An exception, perhaps, are the fundamental laws of physics, which are themselves abstractions (see Earman and Roberts 2004).

19. This is the position of Ronald Giere (1994), an earlier version of which was argued in detail by Nancy Cartwright (1983).

20. The one exception may be the second law of thermodynamics, but one exception does not justify insistence on a class or category of laws of nature; see Mumford 2004, 199.

21. Compare other accounts that propose a metaphysics of powers related to rather than in place of laws of nature, such as Molnar 2003, chap. 12; Ellis 1999.

22. Hume builds on the empiricist tradition of John Locke, who had earlier argued that the laws of morality, which Locke also called laws of nature, were accessible not because they were platonically inscribed into the minds and hearts of human beings but because they are attained through sense-experience (Locke 1997, 97–106).

23. See Hume [1748] 1952. References to this volume are made parenthetically in the text as *Enq*, followed by book and paragraph numbers.

24. Mary Hesse states in her response to Hume, "in the absence of any clear idea what 'laws of nature' would look like . . . , it is impossible to know what a 'violation' would look like either" (1965, 39). Put alternatively, "An outright miracle by definition is an inexplicable event, and insofar as it is inexplicable it is under no law and violates no law" (Harper 1993, 8).

25. These and other arguments have been marshaled against Hume's criticism of miracles by David Johnson (1999) and John Earman (2000), among many others. But see also Robert Fogelin (2003), who argues that Hume's case rests, first, on the criteria he establishes that miracle claims must meet in order to be considered viable, and, second, on his insistence that no testimonies to miracles have actually met such criteria. I think the Humean hermeneutics of suspicion should be tempered (not replaced) with a hermeneutics of charity based on a posture of critical faith, and I attempt to present just such an approach in this essay.

26. "Miracles and all unique events, with their 'surprise and wonder,' are anathema to explanation because explanation explains by undoing the unique, by specifying a genus, individualizing a universal, particularizing the general, engaging a dialectic (or by taking the reverse direction, since explanation is both synthetic and analytic), or, temporarily, by re-presenting to consciousness" (Cohen 1996, 96).

27. On noninterventionist objective divine action (NIODA), see Russell 2006b.

28. For example, most of the contributors to *Chaos and Complexity: Scientific Perspectives on Divine Action* (Russell, Murphy, and Peacocke 1995) did not warm up to the suggestion about divine action at the chaos-theoretical level.

29. The most comprehensive critical assessment so far of the quantum divine action proposal is Saunders 2002.
30. A parallel attempt to show how the laws of nature can be understood as accommodating miracles is Werner Schaaff's apologetic for Jesus' resurrection based on the new physics of materiality and radiation (1974, 87–93).
31. Hence, C. John Collins argues for a supernaturalistic and interventionistic theology of miracles: "God is also free to 'inject' special operations of his power into this web at any time, e.g., by adding objects, directly causing events, enabling an agent to do what its own natural properties would never have made it capable of, and by imposing organization, according to his purposes" (2000, 128).
32. I have previously drawn on Peirce in the attempt to formulate a Pentecostal and pneumatological theology of nature (Yong 2005d, chap. 7).
33. For an overview of Peirce's philosophy, including his basic categories, see Yong 2000.
34. Peirce was not a systematic writer, but he discusses his categories in depth in his "Lectures on Pragmatism" (Peirce 1997). For more on Peirce vis-à-vis his dominant predecessors in the Western philosophical tradition, see Mayorga 2007.
35. Unless otherwise noted, citations from Peirce follow conventional Peirce scholarship in referring to Hartshorne, Weiss, and Burks 1965–1966, and noted in the text by volume and paragraph numbers.
36. The notion of habit plays an important role in Peirce's philosophy. For introductory studies, see Rosenthal 1982; Shapiro 1973.
37. Gary Shapiro (1973, 36) reminds us that habits are general albeit indeterminate powers in the Peircean ontology. To my knowledge, however, Peirce is not mentioned in the work of Cartwright, George Molnar, or Mumford.
38. Elsewhere, Peirce wrote, "if the laws of nature are still in process of evolution from a state of things in the infinitely distant past in which there were no laws, it must be that events are not even now absolutely regulated by law" (7.514; see 6.101).
39. Thus Peirce equates psychical causation with final causation (1.250, 1.266, 1.269).
40. Put alternatively, "a disposition or habit as a rule of generation is something whose possibilities of determination no multitude of actually generated instances can exhaust" (Rosenthal 1982, 235).
41. Demetra Sfendoni-Mentzou notes that "laws for Peirce are those which are neither instantiated [Aristotle] nor uninstantiated [Plato] but those which are instantiatable" (1997, 665).
42. In an essay (ca. 1901) titled "Hume on Miracles" (6.522–6.547), Peirce mainly focused on Hume's views regarding inferences drawn from empirical observation, especially challenging Hume's confusion regarding the logic of abduction or retroduction. It is this capacity correlated with the elasticity of habit that allows for scientific inquiry to proceed rather than predetermines the outcomes of the scientific enterprise. Yet while accepting the possibility of miracles, Peirce did not think there can be modern proofs for Christianity or of the divinity of Christ because "all the evidence which can now be presented for them is quite insufficient, unless the general divinity of the Christian religion be assumed" (6.538).
43. This proleptic principle—that the Christ event instantiates the future kingdom of God at the center of human history—was articulated first by Wolfhart Pannenberg (1977, 53–66) and expanded on since by others, many of whom are cited here.
44. Elsewhere, Robert John Russell suggests that the principle of nomological universality—the claim that the "same laws of nature" govern the past and the far future—is unproven, unprovable, and presuppositional (2002, 289–91).
45. Theologian Keith Ward writes: "the laws of physics we are able to formulate do not, and cannot ever, provide us with a totally comprehensive, exhaustive and accurate picture of the real physical world. . . . If the universe is an open, emergent and interconnected system, and scientific laws are ideal models for understanding regular and quantifiable connections within it, there will always be some features of the physical universe that laws of nature cannot capture" (1998, 85). Ward presents a lengthy discussion of divine action in this framework in his *Divine Action* (1991).
46. This is the weakness of the medieval notion of divine omnipotence in relationship to a covenant-making God (see Oakley 2002).
47. Ward writes: "It is better to construe miracles as such transformations of the physical to disclose its spiritual foundation and goal than to think of them as violations of inflexible and purposeless laws of nature" (1988, 260–61).

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