Emergence and Pentecostal Theology

with David Bradnick and Bradford McCall, "Making Sense of Emergence: A Critical Engagement with Leidenhag, Leidenhag, and Yong"; and Mikael Leidenhag and Joanna Leidenhag, "The Unsuitability of Emergence Theory for Pentecostal Theology: A Response to Bradnick and McCall."

THE UNSUITABILITY OF EMERGENCE THEORY FOR PENTECOSTAL THEOLOGY: A RESPONSE TO BRADNICK AND MCCALL

by Mikael Leidenhag and Joanna Leidenhag

Abstract. In this response to David Bradnick's and Bradford McCall's defense of Amos Yong's usage of emergence theory, we defend our previous argument regarding the tension between Yong's Pentecostal commitments and the philosophical entailments of emergence theory. We clarify and extend our previous concerns in three ways. First, we explore the difficulties of construing divine action naturalistically (i.e. *natural divine causation*). Second, we clarify the problems of employing supervenience in theology. Third, we show why Bradnick's and McCall's advice to Yong to adopt *weak emergence* is theologically costly. In conclusion, it is suggested that theologians within the science and religion dialogue should not fear, but recover, the language of supernaturalism and dualism.

Keywords: David Bradnick; divine action; emergence theory; Bradford McCall; supernaturalism; supervenience; Amos Yong

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Amos Yong has established himself as the face of Pentecostalism in the dialogue between science and religion. Yong's main ambition is to undermine the often assumed Spirit–Nature dichotomy and to construct a Pentecostal theology which is consonant with the core tenets of twenty-first century scientific culture. In order to achieve this harmonization, Yong has turned to emergence theory. In our article, "Science and Spirit: A Critical Examination of Amos Yong's Pneumatological Theology of Emergence," we applauded Yong as a "Pentecostal thinker who seeks to rationally

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examine the distinctively experiential elements of the Pentecostal worldview" (Leidenhag and Leidenhag 2015, 435). However, throughout that article, we argued that emergence theory is an unsuitable ontology for Yong's Pentecostal project and for Christian theology in general (see also Leidenhag 2015; Joanna Leidenhag 2016; Mikael Leidenhag 2016). The main thrust of our critique was that emergence theory does not offer the kind of metaphysical resources that Yong seems to think it does. This overall problem was seen through three more specific critiques.

Our first argument addressed the theory of emergence directly. We argued that by "introducing supernatural causation into the natural order" (Leidenhag and Leidenhag 2015, 429) Yong "renders the concept of emergence obsolete" (Leidenhag and Leidenhag 2015, 425). This argument used the example of how Yong describes the Spirit of God breathing into *ha'adam* in order to turn dust into an enspirited human being. Our second argument addressed the concept of supervenience, which is a central aspect of the (Philip Clayton-inspired) type of emergence theory that Yong employs. We argued that Yong's claim that "God's activity supervenes on human agency" (Yong 2012, 96) is deeply problematic. We also argued that Yong's description of spiritual entities—such as angels, demons, and other spirits—as ontologically independent breaks any meaningful concept of supervenience theory. Finally, we suggested that Yong's project was too quick to transfer scientific concepts of hierarchy into the normative-laden theological realm.

In their response to our article, David Bradnick and Bradford McCall take issue with our first two critiques against Yong, regarding emergence and supervenience. They seek to defend Yong's project by arguing that Yong's concept of divine agency does not invite supernaturalism because "the Spirit works through natural processes" (Bradnick and McCall 2018, 240–57). In the first section of the following response, we take issue with the concept of divine natural causation, the idea that God can act in the world in a non-supernatural way. In the second section, we extend our previous concerns regarding Yong's use of supervenience theory within pneumatology. Here, we show why both weak and strong forms of supervenience threaten the agency, personhood, and divine reality of the Holy Spirit.

In our original article we argued that Yong's use of strong emergence faced serious problems. Bradnick and McCall (2018) concede this point and urge Yong to consistently adopt *weak emergence* throughout his work (as Yong seems to do in some of his publications). In the third section, we show that weak emergence is not a beneficial option for Yong, but only makes the problems we have already outlined more severe. It is for this reason that (in our original article) we urged Yong, if he wishes to maintain some employment of emergence theory, to move in the opposite direction towards emergent dualism (Leidenhag and Leidenhag 2015, 431–32). The conclusion of this response is that our original concerns

regarding the incompatibility between emergence theory and Pentecostal theology still stand. It should be noted that our assessment of Yong's work as supernaturalistic is not meant as a critique *per se*. Instead we encourage science-and-religion scholars who wish to maintain a realist belief in divine action to carefully think through, and not to fear, concepts of supernaturalism and dualism.

Some Philosophical Issues for Natural Divine Causation

In our article (Leidenhag and Leidenhag 2015), we raised critical questions pertaining to Yong's attempt at framing divine action, and the Spirit's activity, through contemporary emergence theory (as primarily articulated by Philip Clayton). For Yong, "Clayton's emergence theory functions . . . as the mediating discourse bridging a Pentecostal reading of Scripture with empirical sciences" (Leidenhag and Leidenhag 2015, 427). In philosophy of mind, emergence theory has been praised for holding together the ontology and causal efficacy of the mental with that of the physical, thus avoiding a problematic dualism. In a similar way, Yong (through Clayton) seeks to apply emergence theory on matters of divine activity in order to dissolve the Spirit-Nature dichotomy. As is traditional in models of divine action, there is a parallel relationship presupposed between how created minds interact with matter, and how God interacts with(in) the universe. Emergence theory seeks to articulate natural mental causation. A pneumatological reading (or accommodation) of emergence theory seeks to articulate what might be called *natural divine causation* (henceforth NDC); that is, a non-dualist, non-interventionist, and non-supernatural account of God's activity and influence throughout the natural domain. Furthermore, NDC would entail an interactive and co-creative view of the relationship between God and natural/human creatures. In large part, Bradnick's and McCall's article, through their critique of our article and their extension of Yong's pneumatology, seeks to further defend the possibility and coherency of NDC. If Bradnick's and McCall's defense is successful—that is, if Yong's account of NDC can be made coherent—this would be nothing short of a breakthrough for theologies of divine action and for the field of science and religion as a whole. However, any celebration is premature, as we will argue that NDC is not a coherent way to model divine action. We offer three possible ways to make sense of NDC, and show that each of these are unstable positions which collapse into alternatives which NDC claims to avoid.

In our original article (Leidenhag and Leidenhag 2015) on Yong, we argued that Yong's account of the *ha'adam* (the creation of humanity) entails supernaturalism, despite Yong's clear rejection of the term (as noted by Bradnick and McCall 2018, 240–57). This is because *ha'adam* only becomes a living being through the breath of the Lord. Unless one takes "the

breath of the Lord" to be an instance of purely physical causation, Yong's account seems to entail a form of supernaturalism (or dualist causation) which puts his theology in direct opposition to the monist commitment of emergence theory—that reality consists of one type of "stuff". Whether the divine breath is effective in an instance, or over the course of billions of years, makes no difference to our argument (*contra* Bradnick and McCall 2018, 240–57).

Bradnick and McCall (2018) take issue with the label of supernaturalism or dualism, which we apply to Yong's NDC. Throughout their article, they argue in line with the NDC account that "the Spirit works through natural processes" (Bradnick and McCall 2018, 240–57), that God produces events "through divine action *within* natural processes" (Bradnick and McCall 2018, 240–57), that "the human spirit arises from within nature and through the work of God" (Bradnick and McCall 2018, 240–57)[1], that "God operates within the laws of nature," that we should understand "pneumatology as working *within* the framework of natural laws" (Bradnick and McCall 2018, 240–57), that "God, who includes the Spirit, can act within the world through non-supernatural means" (Bradnick and McCall 2018, 240–57), and that emergence theory is compatible with, or even the means by which, "the Spirit empowers creation from within" (Bradnick and McCall 2018, 240–57). The phrase 'from within' here means that "there is no distinction between matter and Spirited-entities" (Bradnick and McCall 2018, 240–57). Despite the fact that Bradnick and McCall, in continuity with Yong, criticize Clayton's "theological dualism" (Bradnick and McCall 2018, 240–57), all three scholars do not want to argue that God (or God's Spirit) is natural; the identity of the Spirit remains supernatural (transcendent, Uncreated, etc.) and "'wholly other' than creation" (Bradnick and McCall 2018, 240–57). It is only the *activity* of God which Bradnick and McCall maintain entails no supernaturalism because God only acts within natural systems. It is claimed that a viable form of emergence theory offers a way beyond interventionism (Bradnick and McCall 2018, 240–57). With regard to the issue of *ha'adam*, the creation of humanity, they conclude that Yong's pneumatology remains fully compatible with the monist and anti-dualist commitment of Clayton's emergence theory.

The commitment to NDC is common within the science–religion discourse, in particular with regard to areas of process theism, theistic naturalism, and panentheism (the latter is advocated by Bradnick and McCall in their final section). Prominent scholars, in a similar way to Yong and Bradnick and McCall (2018), consider dualistic types of causation within nature and supernatural "intrusion" within the physical domain to be theologically and scientifically problematic. Thus, NDC presupposes that if God can act, accomplish particular purposes, such actions must be construed *naturally* and be rendered compatible with the physical regularities

and laws of the universe. Divine action is not allowed, so many scholars have asserted, to upset the causal nexus or undermine causal closure. It is not just that "science models that very world in which God acts" (Bradnick and McCall 2018, 240–57), but NDC seems to imply that science can model the very acts of God. Theories of NDC claim that there is "no *qualitative* or ontological difference between the regularity of natural law conceived as expressing the regular or repetitive operation of divine agency and the intentionality of special divine actions" (Clayton 2004, 84); "The processes revealed by the sciences are in themselves God acting as creator, and God is not to be found as some kind of *additional* influence or factor added on to the processes of the world God is creating" (Peacocke 2004, 144). Hence, the natural processes studied by science should "be regarded *as such* as God's creative action" (Peacocke 2004, 145), and "his activity is manifest in and through natural processes *alone*" (Johnston 2009, 119).[2]

Needless to say, the notion of NDC has strong support in the science–religion community. However, can it successfully frame divine action? There are compelling reasons for doubting the philosophical plausibility of NDC, and so the overall coherence of Bradnick's and McCall's theological proposal.

What Bradnick and McCall (2018) and other scholars who adhere to NDC seem to say is that a particular event, *E*, must be causally attributed to God's influence, *G*, and natural causation, *N*. That is, *G* and *N* both (fully) explain *E*, as God only acts from within natural processes. Hence, supernaturalism can be avoided.[3]

At first glance, NDC seems to offer a neat solution to the problem of divine action, but it invites a host of philosophical issues. First of all, it seems to encounter the infamous causal exclusion problem, as articulated by Jaegwon Kim, against the possibility of strong emergence and downward causation. The exclusion principle states that "two or more complete and independent explanations of the same event or phenomenon cannot coexist" (Kim 1993, 250). A robust explanatory realism cannot posit two *complete* explanations, *e1* and *e2*, for one single event. Based on epistemic simplicity, we should say that either *e1* or *e2* has to go. To ignore this problem would be, as Kim argues, to undermine causal realism as a whole, that "causality itself [is] an objective feature of reality" (Kim 1988, 229). Causal realism is a commitment of many in the field of science and religion, and giving it up would be a drastically high cost to pay. If Bradnick and McCall (2018) claim that *G* and *N* (in virtue of the close ontic connection between God and the natural) both sufficiently explain a particular event, then the idea of natural divine causation amounts to philosophical absurdity.

If Bradnick and McCall (2018) do not mean that two causes sufficiently explain a single event, then perhaps they are claiming something else. They might claim that there is *no* ontological distinction between *G* and *N*. This is seen in several positions within the science-and-religion dialogue which

state that God is fully "natural."[4] On this view, it is not possible, not even in principle, to ontologically separate divine influence from the natural processes studied by science. Consequently, there would be no problem of causal exclusion, because this interpretation of NDC does not posit two separate and independent causes because one event. *G* and *N*, somehow *constitute* each other; that is, God/divine causation and Nature/natural causation are mutually dependent upon one another for both their ontological existence and effectiveness. This is one possible way to interpret the NDC account. In Bradnick's and McCall's article we find some sympathy for the claim that there is no difference between God's activity in nature and the processes of the natural world; "there is no distinction between matter and Spirited-entities" (Bradnick and McCall 2018, 240–57). Additionally, they claim that a kenotic account of creation "eliminates a strict sense of theological dualism between God and nature, which means that nature is indeed enspirited from its very origin" (Bradnick and McCall 2018, 240–57).[5] Given such kenotic relation between God and the physical, and the emphasis on immanence, perhaps one should negate any form of dualism between divine causation and natural causation? The danger with such a proposal, which Bradnick and McCall are aware of, is that the God–world relationship descends into pantheism. As they write, creation "possesses the Spirit of God from the beginning, though one needs to be wary of falling into pantheism" (Bradnick and McCall 2018, 240–57). Hence, to equate *G* and *N* is not a live option for those who affirm divine transcendence. To equate God's activity with natural processes would mean that there would no longer be "any reason to interpret it [an effect in the world] as an instance of divine action" (Clayton 2004, 193). By equating *G* and *N* one might be able to resolve the tension caused by the problem of causal/explanatory exclusion (the problem of positing two sufficient causes for one event), but it comes at the expense of making divine causation ontologically superfluous. We would no longer have any reason to appeal to theological explanations. In philosophical language, God becomes epiphenomenal.

A third way of interpreting NDC is to say that *G* and *N* are "partial causes, being constituents in a single sufficient set of causal conditions" (Kim 1988, 234). Kim explains this idea in the following way: "we might explain why an automobile accident occurred by citing, say, the congested traffic, or the icy road, or the faulty brakes, or the driver's inexperience, etc. depending on the explanatory context, even though each of these conditions played an essential role in causing the accident" (Kim 1993, 251). Hence, we do not have two complete explanations for one event, which would bring about the problem of causal exclusion. It is clear that two contributing, yet incomplete, causes for one event can coexist; in fact, this way of explaining events seems to be standard procedure in many human practices. Theologically speaking, we might say that an occurrence, say the creation of *ha'adam*, can be explained partially in terms of divine influence

(the divine breath) and partially in terms of natural processes (the dust of the ground). *G* and *N* would offer complementary explanatory resources without one undermining the other. This is certainly the most promising way of understanding the interconnectedness between divine action and what science reveals regarding the physicality and ontological structure of reality. Indeed, Bradnick and McCall (2018) are open to the idea of "cooperation" between divine agency and human agency, which brings their proposal closer to Kim's notion of partial causation: two distinct causes bringing about one event.

Could this idea of partial causation aid the NDC account and Bradnick's and McCall's (2018) construal of God's interaction with nature? The answer, it seems, has to be no. Remember, NDC (as expressed by Bradnick and McCall and others) entails that God's action must be construed anti-dualistically, non-supernaturalistically, and in a way that does not lead to interventionism. If *G* makes a causal contribution to *E* that is not reducible to *N* then *N* alone is insufficient for explaining *E* (in the same way as *G* alone would be insufficient). This would be an instance of partial causation from both divine action (*G*) and natural causation (*N*). Partial causation means that God and nature would be ontologically different and remain irreducible to each other (we explored above the problems of collapsing God and nature). The problem is that, given this ontological difference, we have a form of dualism within nature that is unacceptable to the supporters of NDC.

This leads to a dilemma regarding how best to interpret NDC: (1) NDC, as presently construed, leads to the problem of causal exclusion. (2) NDC can avoid causal exclusion if interpreted as a form of pantheism. However, this turns natural causation or divine causation into an epiphenomenon. (3) NDC can avoid causal exclusion and epiphenomenalism through the idea of partial causation, but (4) partial causation is dualistic and so incompatible with NDC.

To say that God only works through natural processes, or by calling divine causation "natural," does not solve the causal problem that NDC faces. A non-dualistic and non-supernaturalist account of divine action does not seem possible without sacrificing the transcendence of God and falling into a form of pantheism, or abandoning causal realism. If God makes a real difference in reality, if God's acts transform, redeem, or perfect nature in any objective sense, then such an ontological contribution would go beyond the causal mechanisms of nature. Therefore, our argument that Yong's portrayal of the creation of *ha'adam* invites supernaturalism and a dualistic causality still stands. If Bradnick and McCall (2018) affirm divine–human co-operation more strongly (which we think they should), then this puts their proposal in direct opposition to NDC.

This depiction of Yong's portrayal of Genesis 2 is not meant as a criticism. Dualism and supernaturalism do not mean that God goes against,

violently abuses, or "breaks" the natural world and causal nexus; such terms are merely pejorative semantics which imply a distrust or suspicion of divine action (or the divine agent). Dualism and supernaturalism refer to the consequence of believing in an active (immanent) and transcendent Creator. When God acts with and amongst natural causes and agents, God's action remains distinct and qualitatively different. As such, we suggest that the language of theological dualism and supernaturalism need to be recovered and reinstated as healthy expressions of the Christian faith in the field of science and religion.

The Spirit and Supervenience

Yong's account of the Spirit's activity in nature and interaction with humanity relies heavily on the notion of supervenience; "the charismatic activity of the Spirit also proceeds from the 'top down', and is somehow (as suggested by Peacocke) supervenient upon the activity of the free human agents" (Yong 2011, 95); "In sum, I propose that God's activity supervenes upon human agency" (Yong 2011, 96). However, supervenience is not a general term for causal cooperation between ontological levels; it is a term of ontological dependency of one kind or another (we explore this further below). This above quote, therefore, worryingly states that God's action is dependent upon human action. In our article, we argued that this attempt at articulating the Spirit's activity through supervenience is unsuccessful. We wrote that it is "difficult to comprehend what Yong means when he says that actions are supervening upon, hence constituted by, other actions" (Leidenhag and Leidenhag 2015, 431). Moreover, there is a risk that employing supervenience within "pneumatology denies free independent agency of the Spirit which is the key to the Pentecostal worldview" (Leidenhag and Leidenhag 2015, 433). Supervenience seems a direct contradiction to the idea that the Spirit of God "blows where it wishes, and you hear its sound, but you do not know where it comes from or where it goes" (John 3:8, ESV).

Supervenience is a technical term that warrants clear definition. The thesis of supervenience is used for framing the relationship between higher level properties and lower level properties: property *Y* (e.g. a mental property) is dependent on *X* (the brain structure). Supervenience highlights a relationship of *dependency*. To say that the mind supervenes is to say that the mental could not exist without the body or a particular brain structure. This also means that if there is a change with regard to *Y*, a mental property, there needs to be a corresponding change with regard to *X*, the physical. Weak supervenience states the minimal position that there is a level of *dependency* between higher and lower levels (see Clayton 2004, 124; Haugeland 1982; Horgan, 1993; Kim 1993, 57–64). Yong himself accepts the definition that weak supervenience means that "the mind is

dependent on but irreducible to the neurobiological processes of the brain-body" (Yong 2011, 148). To say that the Spirit's activity weakly supervenes on human action means that the Spirit's action *could not occur* without human action. Moreover, given that human activity is always imperfect and often sinful, claiming that the Spirit's activity is constituted by human activity is to place into doubt the perfect moral nature of the Spirit's agency.

Strong supervenience maintains that lower levels *determine* higher levels, such that the physical would determine the mental, and that facts regarding the physical fix the facts regarding the mental domain. Again, Yong accepts this definition of strong supervenience as a form of determinism (Yong 2011, 148). Supervenience in a strong form would not merely claim that higher level phenomena (the Holy Spirit, in this case) depends ontologically on the substrate level (human believers), but that the lower levels fix or determine the events or phenomena at higher levels. The consequence of employing strong supervenience as a description of the relationship between human agency and the Spirit's agency is to reduce, and thus make epiphenomenal, the agency of the Spirit. It is for this reason that Yong and Bradnick and McCall (2018) reject strong supervenience. Nevertheless, both weak and strong supervenience are in danger of giving the impression that the language of the Spirit is only an authoritative gloss on (sinful) human activity, since supervenience does not allow the Spirit to act independently of human actions.

Given these problems with supervenience, perhaps Bradnick and McCall (2018) and Yong should articulate their emergentism without supervenience. This is a fruitful option for Pentecostal theology, since without supervenience spiritual realities could be ontologically real and causally independent from their physical bases. We encourage Bradnick and McCall and Yong to adopt this position, but it should be noted that without supervenience emergentism amounts to dualism. If you remove supervenience then strong emergentism depicts different ontologies (minds and spirits), which despite originating from the physical would not be grounded in or constituted by the physical. This is the thesis put forward by William Hasker in his emergent *dualism* (Hasker, 1999). Yong, in his discussion of angels and demons in *The Spirit of Creation*, comes very close to Hasker's discussion of an "emergent individual" (Hasker 1999, 190). Emergent dualism, that is, emergence without supervenience, was the position we suggested Yong should embrace in our original article (Leidenhag and Leidenhag 2015, 431–32). The flip-side of this point is that if Yong and Bradnick and McCall wish to maintain their rejection of dualism then their use of emergence must include some form of supervenience as well. As noted above, dualism (and supernaturalism) is not a term which we believe theologians should fear or shun and our application of this terminology to Yong is not in itself a critique.

Is a "Less Robust Emergence" an Option?

While they defend the overall consistency of Yong's pneumatological emergentism, Bradnick and McCall (2018) do concede some of our objections concerning Yong's theological application of emergence and supervenience. For example, Bradnick and McCall recognize that it is a genuine problem for Yong (Bradnick and McCall 2018, 240–57) to argue that strongly emergent realities (spirits, angels and demons) have ontological independence from their subvenient base structures, as this breaks supervenience (Leidenhag and Leidenhag 2015, 425; Bradnick and McCall 2018, 240–57). They also write that Yong expresses weaker forms of emergence in other writings; "So Yong's position is not entirely clear" on this point (Bradnick and McCall 2018, 240–57). Indeed, Bradnick's and McCall's solution to this philosophical tension is to adopt a "less robust form of emergence" (Bradnick and McCall 2018, 240–57) and they recommend that Yong adopts weak emergence (Bradnick and McCall 2018, 240–57). However, their own position, articulated in their final section, loses clarity. Not only do Bradnick and McCall employ strong emergentists (such as Philip Clayton, Arthur Peacocke, and Denis Edwards) to articulate their *weak* emergentism, they also write that the Spirit enables "evolving entities to have their own *autonomy* and integrity" (Bradnick and McCall 2018, 240–57, our italics) – a clear statement of strong emergence.

We are pleased to see that Bradnick and McCall (2018) acknowledge these problems. Nevertheless, the move toward weak emergence creates more problems than it solves and threatens the theological adequacy of Yong's project. Here, we shall show why a less robust emergence is not a good option for Bradnick and McCall or Yong. Although it is beyond the scope of this article, the implication is that weak emergence is not good for Christian theology in general.

Let us rehearse the terms strong and weak emergence in order to address this problem. Someone who adopts strong emergence claims that an emergent entity, or property/phenomena, possesses some kind of feature that is ontologically different from its parts. Whatever the amount of knowledge we have regarding the parts, it is epistemically impossible (practically and theoretically) to deduce the resulting emergent phenomena. What strong emergentists usually appeal to when they talk about ontological novelty is *causal powers*, whereby an entity can affect the course of events on lower levels (Silberstein and McGeever 1999, 186; Kim 1999). Strong emergence is an ontological doctrine "about how the phenomena of this world are organized into autonomous emergent levels . . . " (Kim 1999, 5). So, for strong emergence we find two key commitments: (1) ontological irreducibility, and (2) downward causation (irreducible causal powers).

Weak emergentists, however, might "grant that different sorts of causal interactions may *appear* to dominate 'higher' levels of reality. But our

inability to recognize in these emerging patterns new manifestations of the same fundamental processes is due primarily to the currently limited state of our knowledge" (Clayton 2006, 8). This is an epistemic doctrine which continues in a more reductionist spirit: "weak emergent phenomena are *ontologically* dependent on and reducible to micro phenomena" (Bedau 2008, 160; see also Bedau 1997, 375–99). Hence, "as new patterns emerge, the fundamental causal processes remain those of physics" (Clayton 2004, 9; also quoted in Bradnick and McCall 2018, 240–57). Emergent properties, on this weaker version, become *resultant properties*, which means that they "are predictable from a system's total microstructural property" (Kim 1999, 7). Predictability here means that the lower level determines the higher level. That is, weak emergence goes along with strong supervenience, which (as argued above) is theologically problematic. Weak emergence posits no "new levels of reality," and because it "places a stronger stress on the continuities between physics and subsequent levels, stands closer to the 'unity of science' perspective" (Clayton 2004, 10). This definition is in line with Bradnick's and McCall's own description of weak emergence: "weak emergentists maintain that, as new patterns emerge, the causal processes remain those that are fundamental to the physical" (Bradnick and McCall 2018, 240–57); "weakly emergent properties are 'novel' only at the level of description" (Bradnick and McCall 2018, 240–57), and "weak emergence leaves us with the old dichotomy of physicalism and dualism" (Bradnick and McCall 2018, 240–57). It is clear that weak emergence paves the way for, more or less, a reductionist conception of reality. If this is what Bradnick and McCall intend to base Yong's theology on then it leads to severe complications.

If a reductive relationship holds between E (a spiritual reality, angels or demons) and P (a base level of some kind; physical structure, human activity, etc.) then the causal contribution of E is already contained in P. On this picture, there would be no ontological/causal novelty and so the very reality of spiritual beings/realities would be threatened (this might be a comfort when it comes to demons, but not so much when it comes to angels). Given the reductive dimension to weak emergence, this would be neither a wise move on the part of Bradnick and McCall (2018), nor a desirable outcome for Yong's intention to articulate a realist Pentecostal worldview.

We suspect, however, that Bradnick and McCall (2018) intend to articulate a position somewhere between weak emergence and strong emergence; hence, less ontologically robust than strong emergence, which seems to break the commitment to supervenience and invite dualism, but not as ontologically nullifying as weak emergence, which seems too reductionist for an enchanted or spiritual worldview. What should we make of such a middle position? They seem to want to say that a particular spiritual reality is ontologically real—which supports strong emergence—but is not ontologically independent from its base structure, which brings this position

closer to weak emergence. If this is what they propose then the following question arises: Can we combine ontological realness with ontological dependency? It would be very difficult to avoid causal reductionism if one takes ontological dependency seriously; that higher realities depend on lower realities and that lower realities are causally prior to and ontologically responsible for the existence of higher ones. As we argued above, if the causal contribution of a spiritual reality is already contained in the base structure, then the agency of such spiritual reality would become epiphenomenal. However, if Bradnick and McCall (2018) claim that a spiritual reality, while depending ontologically on something else, brings something causal to the table that is *not* contained in the base structure, then the relationship of supervenience is broken. In current context, if an angel or demon (or the Holy Spirit) makes a causal contribution which goes beyond the causation of the base structure, then the angel/demon/Spirit can no longer be considered supervenient. Remember that on supervenience higher level events are derivative from and grounded in their subvenient level; hence the idea of a supervenient spiritual reality, a demon/angel, causally doing something over and above its base structure does not make sense.

If Bradnick and McCall (2018) cannot coherently claim that spiritual realities are both causally efficacious *and* ontologically dependent on their base level, perhaps they should reject one of these claims. On their weak emergence they could simply reject the causal efficacy of higher level phenomena, including the notion of downward causation. Is such a move an option for Bradnick and McCall given their theological ambitions? No, such a move can hardly be seen as theologically adequate. To reject downward causation would mean that spiritual realities simply supervene on something, without being able to affect anything or contribute anything to reality. Yong's "spirit-filled Pentecostal imagination," to the contrary, stresses the active presence of angels in the lives of believers, manifested in "angelic deliverances, guidance, comfort, and justice" (Yong 2011, 175). Pentecostals "expect angelic interventions today, as extensions of the grace of God in their lives" (Yong 2011, 176). However, without causal efficacy of spirited entities and higher level agency, such language would no longer be meaningful. Moreover, properties that lack causal powers "would be of no interest to anyone; in fact, it was [Samuel] Alexander who equated the existence of an entity with its having causal powers, saying that epiphenomena 'might as well, and undoubtedly would in time be abolished'" (Kim 2006, 557). Although Yong in some of his earlier work, as Bradnick and McCall note (Bradnick and McCall 2018, 240–57), writes that angels and demons are not "ontologically separate" (Yong 2003, 138), are not "Casper-like spirits floating about" (Yong 2003, 115) and have "no ontological reality of [their] own" (Yong 2010, 162), he consistently maintains that they are causally effective. Weak emergence is unable to support a realist stance on spiritual realities capable of acting in the world.

Bradnick and McCall (2018) recognize the problems of strong emergence but their turn to weak emergence, in order to save the coherency of Yong's Pentecostal theology, creates confusion and threatens to take theology down a reductionist path. In our article on Yong, we therefore highlighted some alternative routes for Pentecostal theology and Yong's theological project (Leidenhag and Leidenhag 2015, 431–32).

Conclusion

Bradnick's and McCall's (2018) attempt to defend and extend Yong's use of emergence theory within Pentecostal theology, against the criticisms we previously brought against it, seems unsuccessful. We admire Yong's ambition to bring a distinctively Pentecostal voice to the ongoing dialogue between science and Christian theology. This project, we hope, will continue and attract more Pentecostal scholars. However, we advise this important research area to move away from (monistic) emergence theory, language of supervenience, and naturalistic models of divine action.

The first section of this article dealt with, what we termed, natural divine causation. Hopefully the section on NDC is of interest to a wide range of theologians and scholars working in the field of science and religion. If God is a supernatural (transcendent, uncreated, etc.) being, can God's action be natural, in the sense of being non-supernatural? We argued, negatively. Bradnick and McCall (2018) defend Yong's theory of divine action by arguing that if God can be seen to act *within* nature, then divine action does not need to be construed as supernaturalism. We explored three ways to understand the concept of God acting within nature. On first reading, Bradnick and McCall seem to suggest that there are two ontologically distinct agents (God and natural causation), each acting in a way sufficient to bring about a single event. This interpretation of their view invokes the causal exclusion problem, which threatens causal realism. The theological upshot of this is that this account of divine action seems to make divine action epiphenomenal. Second, Bradnick and McCall can avoid the exclusion problem by collapsing the ontological difference between divine and natural causation, but this invokes the threat of pantheism. The final way of interpreting natural divine causation that we offered is through a model of partial causation, whereby more than one agent or cause contribute to an event. Here we have two agents/causes leading to one combined outcome. We suggested that this is a perfectly acceptable way to understand divine action in the natural world. We suggested, however, that such a model entails supernaturalism. Supernaturalism states that God, a supernatural agent, gives creatures and nature causal capacities, and then subsequently interacts with those created agents in a way unlike anything in nature to bring about events in the natural world. Supernaturalism does not entail that God breaks, abuses, violates, and meddles with natural

causation in a morally problematic way. We suggest that the reappropriation of the language of supernaturalism would have far-reaching benefits for the continuing engagement of theology with the natural sciences.

The second section of this article sought to clarity the language of supervenience. Again, beyond the current debate between ourselves, Yong, and Bradnick and McCall, we hope that this clarity will be useful to general dialogue between theology and science. We argued that both weak supervenience, as an expression of dependency, and strong supervenience, as an expression of determinism, are deeply problematic when used to refer to the relationship between the work of the Spirit and human action. If the Spirit's actions are dependent on or determined by humans, then the perfection (and perfecting) work of the Spirit comes into question, as does the free and transcendent agency of the Spirit as a divine person. Although we do not think that it is Yong's or Bradnick's and McCall's intention at all (!), we expressed the concern that, if the meaning of supervenience is taken seriously, then the implication is that language pertaining to the Spirit is reduced to authoritative glosses on entirely human activities. Supervenience is a necessary clause for emergence theory, *if* emergence theories wish to avoid dualism. Since the problems of supervenience for theology appear severe, we recommend that theologians who wish to apply emergence theory replace Clayton's monistic emergence theory with something like Hasker's emergent dualism.

The third and final section of this article assessed Bradnick's and McCall's advice to Yong to move toward (or to be more consistent in his use of) weak emergence theory. The move toward weak emergence successfully takes Yong's project further away from the threat of dreaded dualism. However, we argued that the cost of this move is devastatingly high for Pentecostal theology. To articulate the reality of spiritual beings (human souls, angels, demons, and other spirits) through weak emergence is to say that such spirits have no causal powers and are fully determined by physical causation. Furthermore, if weak emergence (which usually goes along with strong supervenience) was to be applied to the God–world relation or to God's action, this (as we saw in the second section) would make divine action entirely determined by human action and natural causation. If this route was taken, any hope that God's action can counteract human sin, and restore the universe to full relationship with God, seems lost. Again, if the choice is between dualism/supernaturalism and the implications of weak emergence, we favor the former.

Notes

1. This statement can clearly be read to a affirm supernaturalism or dualism since a distinction is implied between "from within nature" *and* "through the work of God." Natural processes and God here appear to be two separate causes, both necessary to bring about the creation of a human spirit. However, in light of the other statements within Bradnick's and McCall's (2018)

article, it seems more likely that this statement is meant to imply that the work of God is within nature itself. It is this position that this article argues against.

2. It is important to note that Yong, however, rejects the view of natural laws as divine acts, and instead characterizes the regularities in nature as the "habitual" behavior of created agents (Yong 2011, 129). This makes Yong's view of natural divine causation more obtuse than Bradnick's and McCall's (2018) more clarifying depiction. In the final section of their article, Bradnick and McCall encourage Yong to take the more panentheistic route here.

3. For those well acquainted with theologies of divine action, this proposal might seem to be a version of Thomistic double agency. However, double agency states that God is a primary cause (accounting for existence) and the universe functions according to secondary causation (accounting for events and the pattern of cause and effect), in such a way that primary and secondary causation are two different types of causality working on two different levels. Yong's and Bradnick's and McCall's project needs to reject this two-tier system of causation, because to posit two separate levels of causation reinforces the dualism between divine action and natural causation, which NDC is trying to get away from. As such, the model of double agency will not be further considered in this response.

4. To be clear, discussion of God as natural is using the word *natural* neither in contrast to *artificial* (meaning fake or man-made), nor in contrast to *unnatural* (implying deficiency or undesirability). Here, the idea of God as *natural* is strictly meant to contrast with God as *supernatural*.

5. *Kenosis* is a Christological term taken from the hymn in Phil.2:7-11. In the case of the incarnation it seems that God does act as a created agent, whilst somehow remaining fully divine. Even in this case, however, traditional Christian theology argues that within the single person of Jesus Christ the divine–natural dualism remains in the two minds and two wills. To apply the self-emptying of the Son in the incarnation, to the Spirit, Father, or whole Trinity in a general model of divine action, not only seems to question the uniqueness of what God did in the incarnation, but also to invite a form of pantheism as further argued. As such, we are uncertain of the trend within science and religion of extending the Christological theme of kenosis into a depiction of the God–world relationship.

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