

# Faith&Thought



Relating advances in knowledge to faith within society  
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## **In this issue:**

- **A Concise Theory of Emergence**  
- Jamin Hübner
- **Towards a Biblical Model of Intelligent Design**  
- Denis O. Lamoureux

# **FAITH and THOUGHT**

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## Editorial

We are pleased to welcome Dr. Jamin Hübner as a new contributor to 'Faith and Thought' with his article on the theory of emergence. Dr Jasmin Hübner is the Director of Institutional Effectiveness and Chair of Christian Studies at John Witherspoon College in the U.S.A. and has written a number of books on a variety of topics including Apologetics and women in ministry. Professor Denis Lamoureux is no stranger to the journal and we welcome his article on Natural Theology and Intelligent Design. He is Associate Professor of Science and Religion at St.Joseph's College in Alberta, Canada and has lectured and written extensively on evolutionary creation.

### A Concise Theory of Emergence

Jamin Hübner

#### Introduction<sup>1</sup>

The topic of “emergence” (or “emergentism”) has received a growing amount of attention in the past decade of academic research. There is considerable debate about what emergence is (if anything), what it means, and what it implies for our understanding of the natural world and the cosmos. While a substantial portion of this topic has been debated in scientific and philosophical circles, there are inevitable implications in other disciplines, such as theology,<sup>2</sup> economics, and otherwise.

Indeed, the subject of emergence is interdisciplinary, and has served as a source of both insight and confusion. In order to narrow the discussion into more fruitful terms, it is necessary to survey this broader landscape and provide the essential contours of a coherent theory of emergence. Hopefully this essay will be a success in that regard.

#### The Challenge of “Emergence”

In defining “emergence,” we immediately encounter a host of challenges. Definitions from scholars are never-ending.<sup>3</sup> Emergence, for some, appears to challenge reductionistic thinking so central to traditional scientific thought.<sup>4</sup> For others, the discussion doesn’t get beyond answering what exactly it is that “emerges”<sup>5</sup> (entities, phenomena, events, structures, behaviors, properties, relations, laws, etc.). Some deny any emergence at all; “emergence” is just an epistemological convention. As Carl Hempel and Paul Oppenheim suggested, “what is emergent with respect to the theories available today may lose its emergent status tomorrow.”<sup>6</sup> Furthermore, even if emergence can be adequately defined, there are still qualifications and varieties of emergence that plague the discussion. There are distinctions between *synchronic* (simultaneous) and *diachronic* (over time) emergence,<sup>7</sup> between a binary view of emergence (on/off) and spectrum view (in degrees),<sup>8</sup> between complexity (whatever *this* means) as an emergent property and complexity as a *requirement* for emergence,<sup>9</sup> between rare emergence (only applies to mind-body problem) and common emergence (happens regularly), between emergence as potentially supplemental to Darwinian evolution<sup>10</sup> and emergence as virtually synonymous with Darwinian evolution,<sup>11</sup> and so on and so forth. Depending on how one addresses these issues, emergence can end up just about anywhere.

It is impossible to address the whole gamut of concerns. However, it is well within our grasp to outline a provisional understanding of emergence that clarifies the broader conversation.

## A Theory of Emergence: Preliminary Remarks on Creation

As with any good theory—especially one with an explicitly Christian basis, it necessary to start with the foundation of all things, and that is God.

God, the wise and powerful Creator of the universe, created the world that all human beings experience. In the words of Jeremiah, God “made the earth by his power, who established the world by his wisdom, and by his understanding stretched out the heavens” (Jer 10:12; cf. 33:2; 51:15; Acts 17:24-28). To fulfill all the purposes of this creation (which cannot be described here), God made the world to work in a certain way. As recorded in the book of Job, God tells the seas, “Thus far shall you come, and no farther, and here shall your proud waves be stayed” (Job 38:11, NRSV). The scriptures often speak of this arrangement as the wisdom of God (e.g., Prov 8), but for our purposes, we will simply call it the “Rules of Creation.” They are, in essence, the projections of God’s character and internal coherence into the created world. They govern the “stuff” of the world and form the mechanics of day to day life, just as the rules of football give rise to the entire game of football.<sup>12</sup> *What* exactly these “Rules” are, we can hardly describe, for we ourselves are part of creation and are inevitably subject to them. But we can give these rules various labels, categories, and can, often enough, measure them through math, reasoning, and observation. This receptive reconstruction of God’s original construction (to borrow the language of one philosopher)<sup>13</sup> are often referred to as “laws” or “principles.” But they should not be confused with God’s arrangement of creation itself.

In other words, there is a distinction between these “Rules of Creation” that actually govern the world and our human understanding of the Rules. Edgar Andrews refers to this distinction as one between “laws of nature” and “laws of science”: “The laws of nature *constitute* unchanging reality whereas the laws of science are our frequently imperfect attempts to *describe* reality.”<sup>14</sup> When we say, “Newton’s laws caused the car to keep going,” what we really mean is that God made the world to work in a certain way—and Newton discovered some of those ways, even to the point of being able to express them in raw numbers. Utilizing “Newton” in this way is to create a functional shorthand for a more qualified phenomenon. It is because of *God’s* “law,” not Newton’s, that the car keeps going. The various principles forged out of the history of science do not “do” or “cause” anything in and of themselves. Fruit still fell to the ground in accordance with mass, gravity, and distance before the inverse square law (“Newton’s law of universal gravitation,” cf. “Coloumb’s law”) was codified. “Why?” we might ask, is simply because God made it that way.<sup>15</sup>

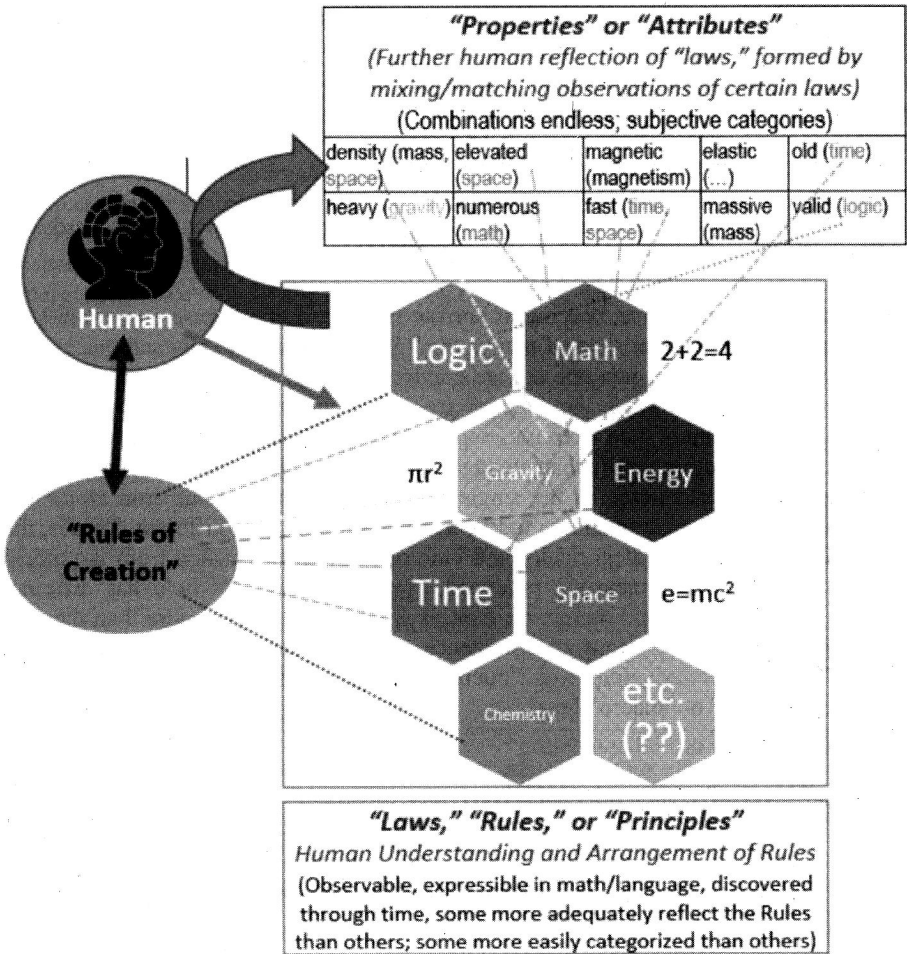
A further implication of this distinction is that, unlike the fixed Rules of Creation, these “laws” are continually discovered and modified through time. The scientist cannot assume that all of the “Rules of Creation” have been (or can be) identified and codified into a fixed canon of laws—as quantum mechanics and Einstein’s theory of

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relativity have demonstrated over the last century. Much less can we assume that our collection of laws are perfect, since they are human.

This is important for our topic since many scientists judge the legitimacy of emergence upon their assumption of a hierarchy of laws where a full knowledge of basic laws can be obtained—and then wielded as the lens through which to view and interpret the use and validity of all other laws.<sup>16</sup> In other words, some scientists approach the subject of emergence as if they have both identified and mastered the most basic principles of creation, when it may well be the case that more basic principles are yet to be discovered (or, at least, mastered). This kind of reductionistic attitude—like any philosophical reductionism—is prone to many problems.<sup>17</sup> It can also antagonize scientific discovery.<sup>18</sup>

These human laws are also *relative* in that they do not apply to all situations. This point is particularly important for emergence since there is great debate over the nature of “new laws” that only apply to the emergent entities and not the “base level” (more on this in a moment). As a case in point, the laws of electricity only apply where there is electric current, just as the physical laws of hydraulics only apply where there is water. It makes no sense to cry “double-dribble!” during a football game!



In addition to the Rules of Creation and the “laws” and “principles” we derive from them, there is another step of human reflection that gives rise to “properties” or “attributes,” which are little more than mixing and matching various principles to produce unique combinations of description. For example, if something is “numerous,” it is strictly observing the laws of math, if “elevated,” bringing attention to spatial location, “massive,” to mass, “old,” to time, and so on. But if we *combine* mass with space, we have a new attribute called “density.” Combine time and space together, and there is “speed.” Some attributes like elasticity and magnetic are more sophisticated, but they are still such attributes. Attributes, while descriptive, are not

*mere* descriptions and changing according to the whims of human opinion. They are based on the (presumably stable) physical realities of a given object. While our understanding of what constitutes a “large” person may shift with the winds of culture, the general “massiveness” of a person may not.

### A Theory of Emergence: Brief and Provisional

Having laid out some basic distinctions about creation, let us now turn towards the subject of emergence.

In summarizing emergence, one might borrow from the Latin phrase on certain U.S. currency, *e pluribus unum*, “out of many, one.” We should not understand this idea as mere *composition*, like when one orange combines with two other oranges to form a *group* of oranges.<sup>19</sup> Rather, emergence speaks of when something *singular* and *different* emerges out of a collection of entities of generally the same kind. A group of oranges is really nothing more than an aggregate whole, having the same properties of tastiness, orange color, etc., as the single orange, but, when certain iron atoms are arranged a certain way, a magnetic field emerges.<sup>20</sup> This is very different. That is, the magnetic field is to be categorically and ontologically distinguished from the atoms by which it was (“nonlinearly”) produced, largely because the field has different properties than the atoms. Emergence, then, is when “the whole is more than the sum of the parts.”<sup>21</sup> In discussions of emergence, the iron atoms comprise the “local,” “lower,” “basal,” “derivative,” or “micro” level while the magnetic field is the “global,” “higher,” or “macro” level.

As we might suspect, sometimes the macro-level can form the micro-level of an additional level of emergence. This is vividly illustrated in chemistry (see graphic below).<sup>22</sup>

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Steen Rasmussen, Nils A. Baas, Bernd Mayer, and Martin Nilsson

<i>Level of Description</i>	<i>Molecular Structure and Order</i>	<i>Observed (Emergent) Functionality</i>
Level 3	micelle (3rd order)	inside/outside, permeability, self-reproduction
Level 2	polymer and water (2nd order)	elasticity, radius of gyration
Level 1	water and monomers (1st order)	phase separation, pair distributions



The distinguishing properties are often themselves labeled “emergent.” This is one of the most confusing aspects in the literature. Most scholars speak of “emergent properties” when defining emergence, but many others speak of emergent entities or structures. Often, the two are confused or conflated even though they are obviously different (refer to the discussion on “properties” above).<sup>23</sup> It is probably best to hold that entities can be legitimately described as “emergent” as well as their properties, but the distinction between the two should not (and *cannot*) properly be lost.<sup>24</sup> Emergent entities, then, is an example of “ontological emergence,” and emergent properties an example of “property emergence.” Both fall under “phenomenal emergence” since they can be observed by human experience.

To flesh all of this out, I’ve graphed seven examples of emergence from different disciplines: a magnet,<sup>25</sup> water,<sup>26</sup> locust swarm,<sup>27</sup> first-person human experience,<sup>28</sup> symphony performance, free market economics,<sup>29</sup> and the Christian church. In each case, I have identified the micro-level (or “base”), the macro-level (or “emergent entity/structure”), and the macro-level properties (or “emergent properties”).

<b>Example</b>	<b>Base</b>	<b><i>Emergent Entity/Structure</i></b>	<b><i>Emergent Properties</i></b>
Magnet (physics)	Iron atoms	Magnetic field	Electromagnetic charge; repulsion/attraction
Water (chemistry)	H <sub>2</sub> O molecules	Polymer and water	elasticity, radius of gyration
Locust swarm (biology)	Locusts	Swarm	collective motion via global order; highly-peaked velocity distribution; uniform density
Human Experience (psychology)	Brain	Consciousness	self-awareness, intelligence, introspection, etc.
Symphony performance (fine arts)	Musicians	Symphony	rhythm/intra-rhythms, harmony, synchrony, etc.
Free market economy (economics)	Producers, consumers, buyers, sellers	Free market(s)	medium of exchange, stocks and bonds, price establishment, etc.
Church (ecclesiology)	Christians	The “Body of Christ”; “Household of God”; “Flock”	catholicity; egalitarian; liturgical; evangelical; communally sacramental; corporate worshipping; holy; familial relations; so-called “Marks of the Church”

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Again, the reason the above entities and properties are called “emergent” is because they didn’t previously exist before emergence occurred. We might use a different word to describe what is happening, but there is little reason to object to using the word “emergent.” In any case, note that it is possible for macro-level entities to share certain properties—e.g., color, organic composition, etc.—with the micro-level (e.g., the basic composition and color of a swarm of locusts vs. one locust is relatively the same). However, the macro-level, to be macro in the first place, must have *other* properties that the micro-level does not. This is a key feature of emergence: *macro-level properties*.

Additionally, it should be obvious from the table above that both macro-level emergent entities and properties are directly and immediately dependent upon micro-level entities and properties. If locusts didn’t exist, there can be no locust swarm, and if locusts did not group together in high concentrations (to trigger a local feedback-loop of increasing serotonin), there would be no swarm. To view it differently, when certain micro entities and (“boundary”) conditions are removed or suspended from the macro level, the macro level simply ceases to be. This is another key feature of emergence: *micro-level dependence*.

“Self-organization” is another feature of emergence. The macro-level entities exhibit a (“complex”)<sup>30</sup> *system*, which does not come about as a result of centralized decision-making. As one key publication defines it, “Self-organization is a process in which patterns at the global level of a system emerges solely from numerous interactions among the lower-level components of the system. Moreover, the rules specifying interactions among the system’s components are executed using only local information, without reference to the global pattern.”<sup>31</sup> No single locust decided to start a swarm and compelled (whether by persuasion or force) the other locusts to obey. The same is true for all the micro-level entities examples above. Instead, the system *emerges* from “the bottom up” instead of “the top down.” Granted, it is true that an agent can affect and even determine the “local rules,” just as a composer determines the time signature and a maestro the tempo for a musical piece. But the end product of a symphony performance—“global behavior”—is decentralized and highly uniform because of the base-level components following local rules (giving rise to essential “feedback loops”), not the continual directives of a recognized, centralized authority.<sup>32</sup>

Emergent-level entities, because they are *real entities*, can, according to applicable laws, affect other entities, regardless of where they fall in the various levels of reality.<sup>33</sup> This would appear to be an obvious, inevitable result of emergence. But, this is where the water gets muddy because it suggests something about “new laws” that do not apply to all levels (appearing to mimic “forces,” which would be bizarre if they were), and something about so-called “downward causation” (appearing to threaten

deterministic philosophies and the laws of cause and effect). But, perhaps the idea is not as complicated as it sounds.

Emergence, as outlined above, demonstrates that certain laws apply to certain levels that do not apply to others (see revised table below). This should not surprise us if we understand laws in the way summarized above. Traffic laws currently do not apply to me since I am at my desk and not in a car. In the same way, the inverse square law has no bearing upon individual iron atoms, since there is no magnetic field.<sup>34</sup> Vern Poythress provides more examples:

Kirchhoff's laws concerning electrical circuits apply only to electrical circuits, not to other kinds of situations... Some laws, like Newton's laws, are not really universal, but accurately apply only to a restricted situation such as low velocity motion of large, massive objects. In the light of later knowledge, we would say that Newton's laws were always only an approximation to the real pattern of regularity or lawfulness in the world. We modify Newton's laws, or we include the specific restriction to low velocity within our formulations of the laws.<sup>35</sup>

One can apply this principle all the way up to the "highest" levels of creation, as Abraham Kuyper did in his theory of sphere sovereignty (e.g., the laws of the state do not apply to the sphere of family).<sup>36</sup>

This does not suggest that other laws are compromised—such as the laws that directly apply to the micro-level (e.g., basic physics). The laws of atomic chemistry still apply to individual water molecules even after they group together to form a liquid (though, it is interesting that is not necessarily true for emergent *properties*).<sup>37</sup> The laws of musical notation, pitch, and time signatures still apply when an individual musician plays in an orchestra and the director starts giving commands. Davies puts this truth in the following terms: "it is important to remember that global principles do not have causal efficacy over local physics; rather, local physics operates in such a manner as to comply with global principles."<sup>38</sup>

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<b>Example</b>	<b>Base</b>	<b><i>Emergent Entity/Structure</i></b>	<b><i>Emergent Properties</i></b>	<b><i>Applicable ("Emergent"?) Laws</i></b>
Magnet (physics)	Iron atoms	Magnetic field	electromagnetic charge; repulsion/attraction	inverse square law (half distance = 4x attraction)
Water (chemistry)	H <sub>2</sub> O molecules	Polymer and water	elasticity, radius of gyration	laws of elasticity, surface tension, viscosity, etc.
Locust swarm (biology)	Locusts	Swarm	collective motion via global order; highly-peaked velocity distribution; uniform density	laws of collective motion (e.g., "do what my neighbor does; don't bump into my neighbor...")
Human Experience (psychology)	Brain	Consciousness	self-awareness, intelligence, introspection, etc.	?
Symphony performance (fine arts)	Musicians	Symphony	rhythm/intra-rhythms), harmony, synchrony, etc.	Keep proper tempo with the group; great dynamics and sharper play = more positive audience response
Free market economy (economics)	Producers, consumers, buyers, sellers	Free market(s)	medium of exchange, stocks and bonds, price establishment, etc.	higher demand = higher prices; lower supply = higher prices, etc.; lower interest = greater borrowing.
Church (ecclesiology)	Christians	The "Body of Christ"; "Household of God"; "Flock"	catholicity; egalitarian; liturgical; evangelical; communally sacramental; corporate worshipping; holy; familial relations; so-called "Marks of the Church"	"...make disciples of all nations, baptizing, teaching..."; "love God...love your neighbor as yourself"; ultimately, the New Covenant—the "law of Christ."

It is debatable whether the word “emergent” should be applied to these laws since it seems more appropriate to speak of the laws “coming into effect.”<sup>39</sup> Just because laws begin to be followed does not mean that they previously did not exist. I could live my entire life without driving a car, but that does not mean that traffic laws have never come into being (or that they wouldn’t apply should I one day drive!). The Rules of Creation do not fade in and out of creational existence—nor do the “laws” and “principles” we derive from them, *if* they are an accurate reflection of these Rules. Emergent entities, on the other hand, *can and do* fade in and out of existence, just as easily as a magnet loses its magnetic field or a human being suddenly regains consciousness after healing from a brain injury. All of this means, then, that it is important to distinguish “coming into *effect*” and “coming into *being*” when discussing “laws/rules of emergence.” They simply are not the same.

The controversial topic of “downward causation” should be modified in light of the theory that has so far been presented. To repeat: emergent-level entities, because they are *real entities*, can, according to applicable laws, affect other entities, regardless of where they fall in the various levels of emergence. It is confusing and needless to talk about “downward causation” since *any* entity of any kind in our world naturally takes part in the endless chains of cause and effect. This is true regardless of where it falls in the various levels of emergence and regardless of what direction the cause/effect chain is going. If something is really some *thing*, it is part of creation and is subject to whatever laws can be applied to it and takes part in the daily activities of our universe<sup>40</sup>; it is “as causally significant as anything else in the world.”<sup>41</sup> Yes, the emergent entity’s behavior is largely determined by the micro-level states; if the musicians are sleepy, the whole symphony performance will be altered. But it is also determined by surrounding events—distractions from the audience, temperature in the room, lighting, etc. For that reason, it should never be assumed that the conditions and behavior of the micro-level are the *sole* cause and reason for the conditions and behavior of the macro-level. The swarm might be moving south because one of the locusts sensed food in that area; or, a strong north wind just might be forcing it to go in that direction.

We may therefore accurately speak about the free market affecting consumer choices, the volume of the symphony affecting its individual musicians, the swarm affecting the behavior of its individual locusts, consciousness affecting the neuro-pathways of the brain, the elasticity of water affecting its individual molecules, magnetic field affecting its magnet, the morality and behavior of the church affecting the whole Body (1 Cor 12:26)<sup>42</sup>—just as one entity “affects” any other in the ordinary cause-and-effect activities of life.<sup>43</sup> (Many of these, we can observe scientifically!) Whether the actions of the macro-level were determined by the activities of the micro-level, by some external event, or by something else, is not all that immediately relevant.

### Concluding Evaluations

Emergence viewed in the way presented above is, indeed, an extremely common thing. Emergence of entities/structures and properties/attributes should be strongly affirmed. One may thus speak of “ontological emergence” and “property emergence” as two different, though related things. We may be open to using the term “emergence” of “laws,” albeit cautiously; using a term too much can water down its significance and strip it of usefulness.

Regarding the subjectivity so common to theories of emergence, these have been generally rejected. The theory outlined above makes no recourse to “novel” or “unexpected” qualifications (as was the case in the early British theories of emergence).<sup>44</sup> Whether we find a magnetic field and its properties “new” or “unexpected” does, indeed, only show our ignorance of how the world works, and should be used as a catalyst for curiosity and investigation, but not a criteria for scientific investigation.<sup>45</sup>

The consistent features of emergence identified in this brief proposal are (1) emergent-level (entities/structures) have properties/attributes not identical to the micro-level entities/structures; (2) the emergent-level is dependent upon the micro-level; (3) the emergent-level is the product of self-organization; (4) the emergent-level entity takes part in cause-effect chains like all other entities in creation; (5) the emergent entity obeys laws applicable to its particular emergent level.

This summary is similar to many other basic proposals, although, in addition to avoiding the qualifications of “unpredictability” and the language of “downward causation,” it does not recognize “strong” and “weak” emergence, which is terribly slippery. For example, in his essay “Downward Causation and Autonomy in Weak Emergence,” Mark Bedau defines strong emergence as when macro-level properties have irreducible causal powers and weak emergence as “The aggregate global behavior of certain systems” where “the global behavior has no simple explanation.”<sup>46</sup> He then concludes that “strong emergence is scientifically irrelevant.”<sup>47</sup> Andrew Assad and Norman Packard, on the other hand, define strong and weak emergence in completely different terms, where both definitions are defined according to human perspective. Weak-emergent behavior is “deducible in hindsight from the specification *after* observing the behavior” while strong-emergent behavior is “deducible in theory, but its elucidation is prohibitively difficult.”<sup>48</sup> Still another scholar, Terrence Deacon, defines strong emergence as implying “a disassociation from the physics relevant to the part and their relationships,” and weak emergence which “does not entail introduction to any new physical principles.”<sup>49</sup>

Not only are these definitions incompatible with one another, but they are also unhelpful—especially to the scientist who needs observation, data, and consistent rules to abide by more than epistemological introspection.<sup>50</sup> The notion of “strong”

and “weak” in emergence is, as far as I can tell, a subjective, artificial category born out academic debate that causes more confusion than clarity. Worse, is that scholars assume that the meanings of these categories are common knowledge in the academic and intellectual community, when they simply are not. As painful as this is, we might all be better off by dropping this distinction altogether until some kind of meaningful consensus emerges (no pun intended).

The distinction between “ontological” and “property” emergence, however, directly connects to natural science. One can easily witness a locust swarm and notice its various properties that an individual locust does not have. The scientist can even measure these properties and document them. The scientist cannot, at least without performing some degree of abstract analytic philosophy, determine what theory of emergence constitutes (refer to quotations above) “irreducible causal powers,” much less determine what elucidation of deducible emergent behavior is “prohibitively difficult.”

As far as “synchronic” and “diachronic” emergence is concerned, there seems to be no problem with this distinction either in principle or in observation. Traffic jams and locust swarms do not form in an instant like a magnetic field or water molecules. How great the latency between the formation of the base level and consequent emergence varies on a case-by-case basis.

## Conclusion

Having proposed a number of revisions to the contemporary discussion of emergence, I want to conclude by suggesting three areas that need further exploration. The first is the meaning of “reduction” (and consequently, “reductionism” as well). This has been helpfully addressed in (among other works) John Searle’s essay on the subject,<sup>51</sup> which identifies at least five kinds of reduction. But his particular analysis of consciousness leaves much room for applying these categories to a broader theory of emergence like the one outlined in this essay. In any case, future work on emergence should cautiously avoid unqualified uses of the term “reduction,” “reductionism,” and “reduce” because of these various meanings.

Second, the boundary conditions for emergence and, especially, the limits of self-organization, will play a key role in both our understanding of evolution and biology and the long-term failure or success of the Intelligent Design movement and related theories. For that reason, this particular issue has become a key point of interest in the ongoing dialog,<sup>52</sup> and it is no surprise that studies on the various mechanisms of self-organization have continually increased ever since Kauffman published his seminal work *The Origins of Order* in 1993. Nevertheless, there have been few macro-level, generally-accepted breakthroughs about what the laws of physics interacting with natural environments can (and can *not*) accomplish “on their own” that implement the findings of these micro-level studies. This is where information theory becomes

particularly relevant, since it attempts to address that very question (among several others). Significant efforts are underway to explore this budding field.<sup>53</sup>

Third and finally, emergence needs to be explored in areas beyond science and philosophy. If emergence is something found in the world and self-organization a way in which organisms live and thrive, then there might be much to be learned in other areas. Len Fisher in his book *The Perfect Swarm* has effectively related the principles of emergence and self-organization in nature to our everyday lives, but he inevitably leaves the doors open for more application. To state it bluntly, self-organization in biological systems challenges the Western intellectual tradition and societal organization of *functional, top-down hierarchy*, suggesting that businesses, churches, schools, cities, nations—all of the basic institutions of modern society—might be better off without a “CEO,” “pope,” “president,” “emperor,” or “king” and run by “swarm intelligence” and “herd mentality” instead. The internet and Wikipedia are powerful illustrations of the efficacy of decentralized, emergent systems. The dismal failure of command-economies in various countries around the world also remind us of what happens when conscious minds attempt to challenge the laws of nature by instituting their own version of “order.” In short, the principles of emergence and self-organization need to be treated as the powerful concepts and realities that they are and not an obscure, theoretical subject for academics.

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<sup>1</sup> This article is based on a presentation given at the 2014 Annual ASA meeting in Hamilton, Ontario (July 27, 2014).

<sup>2</sup> There are discussions of “emergence” and theology, but they typically limited to broad strokes about God’s immanence and transcendence and the relationship between God and various levels of emergence. Many of these discussions also come from a non-Christian point of view. As examples, see Harold Morowitz, *The Emergence of Everything* (New York: Oxford, 2002), ch 34-36; Philip Clayton and Paul Davies, eds., *The Re-Emergence of Emergence* (New York: Oxford University Press, 2006), section 4.

<sup>3</sup> An earlier draft of this essay included a simple list of quotations of different definitions of emergence, and it was over three pages alone.

<sup>4</sup> Nevertheless, Morowitz is willing to say in *The Emergence of Everything*, 14, that while “emergence is then the opposite of reduction,” “Both approaches can be mutually self-consistent.”

<sup>5</sup> Cf. Mark Bedau and Paul Humphreys, eds., *Emergence: Contemporary Readings in Science and Philosophy* (Cambridge: MIT Press, 2008), 4.

<sup>6</sup> Carl Hempel and Paul Oppenheim, “On the Idea of Emergence,” in *Emergence: Contemporary Readings*, 64. Cf. Bedau and Humphreys, *Emergence*, 16, and the attitude of John Searle, “Reductionism and the Irreducibility of Consciousness,” in *ibid.*, 77: “Consciousness is as empirically mysterious to us now as electromagnetism was previously.”

<sup>7</sup> See Bedau and Humphreys, *Emergence*, 5.

<sup>8</sup> E.g., *ibid.*, 15.

<sup>9</sup> Compare and contrast, for example, the uses of “complexity” in Jaegwon Kim, “Making Sense of Emergence” in *Emergence*, 140; Steen Rasmussen, et. al., “*Ansatz for Dynamical Hierarchies*,” in *Emergence*, 330; Scott Camazine et. al., *Self-Organization in Biological Systems* (Princeton: Princeton University Press, 2001), 11-13. Cf. discussion in Bedau and Humphreys, “Scientific Perspectives on Emergence,” in *Emergence*, 209-10.



<sup>10</sup> E.g., Camazine et. al., *Self-Organization*, 89: “We believe that natural selection is intimately linked to self-organization, since it molds the rules of interaction among the components of a living system...it is a *cooperative ‘marriage’* in which self-organization allows tremendous economy in the amount of information that natural selection needs to encode in the genome. In this way, the study of self-organization in biological systems promotes orthodox evolutionary explanation, not heresy.” Compare and contrast with Stuart Kauffman, *The Origins of Order: Self-Organization and Selection in Evolution* (New York: Oxford University Press, 1993).

<sup>11</sup> Notice, for example, the way “emergence” is used in Morowitz, *The Emergence of Everything*.

<sup>12</sup> Cf. Edgar Andrews, *Who Made God?* (Carlisle: Evangelical Press, 2009), 126: “Laws emerge not as the icing on the cake—something *imposed* on a game—but as the cake itself, the defining essence of the game. Think it through for yourself, in one sense, the laws *are* the game. We invent a new game only when we invent a new set of rules.”

<sup>13</sup> Cornelius Van Til, *The Defense of the Faith*, ed. K. Scott Oliphint (Phillipsburg: Presbyterian and Reformed, 2008), 76; idem., *An Introduction to Systematic Theology*, ed. William Edgar (Phillipsburg: Presbyterian and Reformed, 2007), ch 3.

<sup>14</sup> Andrews, *Who Made God?*, 141.

<sup>15</sup> Millard Erickson, *Christian Theology* (Grand Rapids: Baker Academic, 2013), 275: “[God] is the God of nature, of natural law. Even what are ordinarily considered natural events should be seen as God’s doing, for nature and God are not as separate as we usually think.” Cf. John Frame, *The Doctrine of God* (Phillipsburg: Presbyterian and Reformed, 2002), 53.

<sup>16</sup> Note, for example, the attitude of James Watson, “There is only one science, physics: all else is social work.” Cited in Harry Cook, “Emergence: A Biologist’s Look at Complexity in Nature,” *PSCF* 65:4 (December, 2013): 234.

<sup>17</sup> See Roy Clouser, *The Myth of Religious Neutrality* (Notre Dame: Notre Dame University Press, 2005).

<sup>18</sup> Cf. Thomas Kuhn, *The Structure of Scientific Revolution* (Chicago: University of Chicago Press, 2012).

<sup>19</sup> Cf. Paul Davies, “The Physics of Downward Causation,” in *The Re-Emergence of Emergence*, 41.

<sup>20</sup> George Lewes (1817-1878), who coined the term “emergence” (1875), made a similar distinction, which was between “emergent,” where the whole is more than the sum of its parts, and a “resultant,” which is “either the sum or a difference of the co-operant forces” (*Emergence*, 31).

<sup>21</sup> Terrence Deacon, “Emergence: The Hole at the Wheel’s Hub,” in *The Re-Emergence of Emergence*, 122: “This phrase originates with Aristotle and captures two aspects of the emergence concept: the distinction between a merely quantitative difference and a qualitative one, and effects involving the combination of elements whose patterns of interaction contribute to global properties that are no evidence in the components themselves.” For a brief discussion on how this phrase was used in the 20<sup>th</sup> century, see Morowitz, *The Emergence of Everything*, 23.

<sup>22</sup> Steen Rasmussen, et. al., “*Ansatz* for Dynamical Hierarchies,” in *Emergence*, 308-324: “...in this system the first-order structures (water and monomers) generate second-order structures (polymers) that in turn generate third-order structures (micelles and viscles). Note that the dynamics at each order of objects again generates emergent properties”—phase separation and pair distributions on first level, elasticity on second, and permeability and self-reproduction on third.

<sup>23</sup> E.g., Lynn Rothschild, “The Role of Emergence in Biology,” in *The Re-Emergence of Emergence*, 153: “...at this point ‘salt’ appears as an emergent property of sodium and chlorine.” Salt, rather, is an emergent *entity* of sodium and chlorine. Salt’s emergent *properties* are being water soluble, nutritious, etc., which are contrasted with chlorine’s properties (e.g., gaseous, a respiratory irritant) and sodium’s properties (soft, bright, silvery, etc.).

<sup>24</sup> It would make no sense, for example to say “emergent properties must do some serious causal work” or emergent properties might be “active causal agents in the process of cosmic evolution,” as in Jaegwon Kim, “Being Realistic about Emergence,” in *The Re-Emergence of Emergence*, 198, since “properties,” whether emergent or not, simply do not have that capacity. It would be like saying

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“density and color must do some serious causal work” and “density and color could be thought of as causal agents.” Again, “properties” don’t “do” or “cause” anything.

<sup>25</sup> This example is used in William Hasker, “Philosophical Contributions to Theological Anthropology,” in James Beilby, ed., *For Faith and Clarity: Philosophical Contributions to Christian Theology* (Grand Rapids: Baker, 2006), 257. Cf. William Hasker, *The Emergent Self* (Ithaca: Cornell University Press, 2011).

<sup>26</sup> Rasmussen, et. al., “*Ansatz* for Dynamical Hierarchies,” 308-324.

<sup>27</sup> Len Fisher, *The Perfect Swarm* (New York: Basics Books, 2011), 24. Cf. the “swarm raids of army ants” in Scott Camazine et. al., *Self-Organization in Biological Systems* (Princeton: Princeton University Press, 2001).

<sup>28</sup> For useful discussions of consciousness and the person as emerging from neurophysiology, see D. Gareth Jones, “The Emergence of Persons,” in Malcolm Jeeves, ed., *From Cells to Souls—and Beyond* (Grand Rapids: Eerdmans, 2004); Hasker, *The Emergent Self*; Steven Pinker, *How the Mind Works* (New York: W. W. Norton & Co., 1997), 131-148; Gregory Peterson, *Minding God: Theology and the Cognitive Sciences* (Minneapolis: Fortress Press, 2003); Warren Brown, “Cognitive Contributions to Soul,” in Nancy Murphy, Warren Brown, and H. Malony, *Whatever Happened to the Soul?* (Minneapolis: Fortress Press, 1998), 102; Gerald Edelman, *The Remembered Present: A Biological Theory of Consciousness* (New York: Basic Books, 1989); Stanislas Dehaene, *Consciousness and the Brain* (New York: Viking, 2014); and the works of Roger Sperry and Benjamin Libet.

<sup>29</sup> Cf. Thomas Schelling, “Sorting and Mixing,” in *Emergence*, 237; James Crutchfield, “Is Anything Ever New?” in *ibid.*, 272; Davies, “Physics of Downward Causation,” in *The Re-Emergence of Emergence*, 42-43; Fisher, *The Perfect Swarm*, 17; Paul Krugman, *The Self-Organizing Economy* (Cambridge: Blackwell, 1996).

<sup>30</sup> In almost every case above, it seems possible to add “complexity” to the “properties” column, since an emergent entity with additional properties has been produced. It all depends on the meaning and qualifications of “complexity.” On the surface, it seems wiser to think of complexity as an *emergent* property instead of a basal property (and hence a condition for emergence). It would be difficult to argue, for example, that an individual locust is more complex than a locust swarm since the swarm contains both individual locusts and additional properties unique to the swarm. Nevertheless, the syntax of “complexity” begins to shift when emergent structures from the base form another layer of emergence; cells are complex, but, the brain is immeasurably more complex. For this reason alone, complexity should be viewed in degrees, and we might say that complexity *may* be a required property for *additional* emergence, but not necessarily. (This potentially conflicts with some ID theorists who see “complexity” as more binary than in degrees). Furthermore, it may not be a legitimate assumption to presume that the “lower” levels we observe, the simpler things become since, paradoxically, the atomic and subatomic level appears to be (in quantum mechanics) as complex (or more complex) as an emergent structure built upon it. This once again suggests an element of subjectivity in the meaning of “complexity.” Therefore, unless one is dealing with a highly-nuanced definition of “complexity” (e.g., working definitions scientists use in computational models of cellular automata), it may be best to avoid the term altogether instead of associating it with qualifications for emergence.

<sup>31</sup> Camazine et. al., *Self-Organization*, 8. Cf.

<sup>32</sup> If you think a conductor compromises the principle of self-organization, it would be instructive to visit a performance of the renowned Orpheus Chamber Orchestra in New York, which has never had a director since its founding in 1972. The same is true for the church, which forms as the result of obeying the Great Commission and following the gospel of Christ. This obviously introduces the question of just how helpful and legitimate “church leaders” are, depending on the nature and structure of ecclesiastical affairs.

<sup>33</sup> On emergent levels simply being “reality,” see Arthur Peacocke, “Emergence, Mind, and Divine Action,” in *The Re-Emergence of Emergence*, 259.

<sup>34</sup> Perhaps this isn’t the best example, since Newton’s law of universal gravitation also applies to gravity, and anything with mass (including a single atom of iron) has gravity.

<sup>35</sup> Vern Poythress, *Redeeming Science* (Wheaton: Crossway, 2006), 17.

<sup>36</sup> Abraham Kuyper, "Sphere Sovereignty," in James Bratt, ed., *Abraham Kuyper: A Centennial Reader* (Grand Rapids: Eerdmans, 1998).

<sup>37</sup> Unlike emergent entities where micro-level laws are (as far as we know) "intact" after macro-level laws come into effect, the micro-properties may change after macro-properties have been established. One example is covalent bonding. See Bedau and Humphreys, *Emergence*, 14.

<sup>38</sup> Davies, "The Physics of Downward Causation," 42.

<sup>39</sup> Davies, "The Physics of Downward Causation," 48, says, "It appears that once a system is sufficiently complex, then new top-down rules of causation *emerge*." He goes on to say, "Physicists would like to know whether these rules can ultimately be derived from the underlying laws of physics or must augment them." This section of the essay tends to blur "laws," "rules," and "principles." Davies is very hesitant to talk about new "laws" that apply to emergent entities, but has little trouble making the same assertion only using the word "principles" and "rules" instead. It is unclear how his "global principles" (42) and emergent "top-down rules of causation" (48) function any different than "underlying laws of physics" (48).

<sup>40</sup> Note Peacocke, "Emergence, Mind, and Divine Action," 262: "For *to be real is to have causal power*."

<sup>41</sup> Michael Silberstein, "In Defense of Ontological Emergence and Mental Causation," in *The Re-Emergence of Emergence*, 217.

<sup>42</sup> On the emergence of the church (not to be confused with the 21<sup>st</sup> century "emergent church" or "emerging church" movement), see Thomas Oden, *Classic Christianity* (New York: HarperOne, 1992), 705, 711; George Ladd, *A Theology of the New Testament* (Grand Rapids: Eerdmans, 1993), 384; Timothy Tennent, *Theology in the Context of Global Christianity* (Grand Rapids: Zondervan, 2007), 99; Stanley Grenz, *Theology for the Community of God* (Grand Rapids: Eerdmans, 2000), 470-72.

<sup>43</sup> I agree with Nancey Murphy, "Emergence and Mental Causation," 228, that we might speak of causal "powers" when mentioning emergent entities "affecting" others, but the use of "forces would seem to conflict with our sense of the causal closure of physics."

<sup>44</sup> Bedau and Humphreys, "Introduction to Philosophical Perspectives on Emergence," in *Emergence*, 11; Jaegwon Kim, "Making Sense of Emergence," *ibid.*, 131-141. Note also, Alexander's definition of emergence: "The higher-quality emerges from the lower level of existence and has its roots therein, but it emerges therefrom, and it does not belong to that lower level, but constitutes its possessor a few order of existence with its special laws of behavior...It admits no explanation" (cited in Brian McLaughlin, "The Rise and Fall of British Emergentism," in *Emergence*, 31). I can generally agree to this definition except the last part about predictability.

<sup>45</sup> I might even agree with Carl Hempel and Paul Oppenheim, "On the Idea of Emergence," cited in *Emergence*, 65, when they say the feature of "absolute "unpredictability" "encourages an attitude of resignation which is stifling for scientific research."

<sup>46</sup> Mark Bedau, "Downward Causation and Autonomy in Weak Emergence," in *Emergence*, 158-59.

<sup>47</sup> *Ibid.*

<sup>48</sup> Andrew Assad and Norman Packard, "Emergence," in *Emergence*, 232. Cf. Rothschild, "The Role of Emergence in Biology," in *The Re-Emergence of Emergence*, 153.

<sup>49</sup> Deacon, "Emergence," in *The Re-Emergence of Emergence*, 122.

<sup>50</sup> Cf. Murphy, "Emergence and Mental Causation," in *ibid.*, 227: "I believe that epistemic definitions in terms of unpredictability or non-deducibility of the putatively emergent entity or property are unhelpful."

<sup>51</sup> Searle, "Reductionism and the Irreducibility of Consciousness," in *Emergence*.

<sup>52</sup> As a popular example, Stephen Meyer thoroughly addresses self-organization in his best-selling *Signature in the Cell* (New York: HarperOne, 2010).

<sup>53</sup> One notable, recent work is Robert Marks III et. al., *Biological Information: New Perspectives* (Toh Tuck Link, Singapore: World Scientific Publishing Company, 2013).

## **Do the Heavens Declare the Glory of God? Toward a Biblical Model of Intelligent Design**

**Denis O. Lamoureux**

Psalm 19:1 is one of the most beloved and well-known verses in the Bible. “The heavens declare the glory of God and the firmament proclaims the work of his hands.” Throughout most of church history, this verse has been used to affirm the belief that God reveals Himself through nature. Often termed “natural revelation” or “natural theology,” this form of divine disclosure has been seen as complementing the “special revelation” of the Creator found in Scripture; in particular, the revelation of God through Jesus Christ.<sup>1</sup> Therefore, in answering the question posed in the title of this paper—Do the heavens declare the glory of God?—most Christians would answer a resounding “yes.”

*The Belgic Confession* (1561) provides an insightful summary of the belief that God reveals Himself both through the natural world and more fully in the Bible. Article II, entitled “The Means by Which We Know God,” states,

We know him by two means:

First, by the creation, preservation, and government of the universe, since that universe is before our eyes like a beautiful book in which all creatures, great and small, are as letters to make us ponder the invisible things of God: his eternal power and his divinity, as the apostle Paul says in Romans 1:20. All these things are enough to convict men and to leave them *without excuse*.

Second, he makes himself more clearly and fully known to us by his holy and divine Word, as much as we need in this life, for his glory and for the salvation of his own.<sup>2</sup>

This passage reflects the time-honored metaphor of viewing nature as a book—the Book of God’s Works. Implied in Article II is the belief that natural revelation is limited, because the Lord is “more clearly and fully known to us” through Scripture. Yet despite this limitation, the revelation in nature is so clear and powerful that it not only “convict[s]” men and women, but it “leave[s] them without excuse” regarding the Creator’s existence and some of His attributes. The heavens not only declare the glory of God, but they call humans to accountability before their Creator.

This paper attempts to explore the truthfulness of natural revelation and whether or not the heavens do indeed declare God’s glory. Within evangelical circles today, the notion of natural theology is often categorized with the concept of intelligent design.<sup>3</sup>

For our purposes, intelligent design is defined as the *belief* that beauty, complexity, and functionality in nature point to an Intelligent Designer. The paper opens by examining three prominent evangelical theologians who have reconsidered the veracity of traditional approaches to natural theology. Next, passages in the Bible

dealing with God's revelation in nature are presented. In order to demonstrate the revelatory impact of design in nature, we will then look at three famous religious skeptics. The paper closes by proposing a biblical model of intelligent design and offers some design interpretations.

## Natural Theology Reconsidered

### *Karl Barth: An Attempt to Unite Yahweh with Baal*

Karl Barth was one of the most influential evangelical theologians of the 20<sup>th</sup> century. He based his famed *Church Dogmatics* (1936-1969) on a view of divine revelation that claimed the "Eternal God is to be known in Jesus Christ and *not elsewhere*."<sup>4</sup> As a consequence, Barth rejected the idea that there is "a point of contact" between finite sinful humans and the infinite holy God.<sup>5</sup> In particular, he vehemently rejected all forms of natural theology, contending that any knowledge of God drawn from nature was impossible, because the Image of God had been destroyed in humans. As he notes, "What is possible from the standpoint of creation from man to God has actually been lost through the Fall."<sup>6</sup> Barth even viewed natural theology as a threat to biblical revelation.

The logic of the matter demands that, even if we only lend our little finger to natural theology, there necessarily follows the denial of the revelation of God in Jesus Christ. A natural theology which does not strive to be the only master is not a natural theology. And to give it place at all is to put oneself, even if unwittingly, on the way which leads to this sole sovereignty.<sup>7</sup>

In fact, Barth went so far as to claim that natural theology was idolatrous and pagan. It is "an attempt to unite Yahweh with Baal, the triune God of Holy Scripture with the concept of being of Aristotelian and Stoic philosophy."<sup>8</sup>

Some have attempted to justify Barth's rejection of natural theology by claiming it was in reaction to the natural theology concocted by the Nazis.<sup>9</sup> The National Socialists proclaimed that Hitler's rise to power in 1933 was God-sent and a new revelation that was to be placed alongside Scripture, both "equally binding and obligatory" and "demanding obedience and trust."<sup>10</sup> Though there is certainly truth in this justification, Barth was also impacted by mediaeval theologian Anselm's theological approach, depicted in his aphorism: "For I do not seek to understand in order to believe; I believe in order to understand. For I also believe that 'Unless I believe, I shall not understand.'"<sup>11</sup> In other words, theology is presuppositional. Barth contended that we must begin with faith and Scripture, and only then can we comprehend the world around us.

To be sure, the Word of God certainly illuminates our ability to understand. As the foundational principle in the first chapter of the Book of Proverbs states, "Fear of the Lord is the beginning of knowledge" (v. 7; cf, Is 33:16, Ps 111:10). However, Barth

fails to acknowledge that Scripture also includes an evidential approach and affirms a divine revelation through nature. For example, the apostle Paul in defending the Gospel to pagans appealed to evidence from the natural world. He argued, “God has not left Himself without testimony. He has shown kindness by giving you rain from heaven and crops in their season; He provides you with plenty of food and fills your hearts with joy” (Acts 14:17; see also Acts 17:22-31). In this way, Paul used the “testimony” of nature as “a point of contact” in order to “bring the Good News” (v.15). Natural revelation can function as a preamble to Christian faith.

*Thomas Torrance: Transformation of Natural Theology*

Though certainly appreciative of concerns raised by Barth, Thomas Torrance proposed that there was place for a “transformed” natural theology within the larger discipline of what he termed “Scientific Theology.”<sup>12</sup> Impacted by Athanasius’ dictum, “It is more pious and more accurate to signify God from the Son and call Him ‘Father,’ than to name Him from His works and call Him ‘Unoriginate,’”<sup>13</sup> Torrance argued that “traditional” natural theology “abstracts the existence of God from his act [i.e., his act of creating; the creation], so that if it does not begin with deism, it imposes deism upon theology.”<sup>14</sup> In particular, Torrance contended that natural theology was rooted in the Enlightenment desire to cast theology entirely within the confines of human rationality, leading eventually to biblical revelation being set aside.

Similar to Barth, Torrance argued that our knowledge of God *only begins* with His self-disclosure in Jesus Christ and the Trinity, and that all other starting points are invalid. He writes,

Revelation means immediately the refutation of all else that purports to be knowledge about God. Revelation means that all other knowledge is not knowledge at all. If revelation means the revelation of what is otherwise not known and is hidden, then it puts out of court our ordinary knowledge about God—yes, even our knowledge gained through the examination of our moral and mystical experience. All indirect revelation—as it is called—or all general revelation is confuted by the fact of [special or biblical] revelation.<sup>15</sup>

Like Barth, Torrance feared that the “danger” in traditional natural theology is “its independent character,” and “that once its ground has been conceded it becomes the ground on which everything else is absorbed and naturalised, so that even the knowledge of God mediated through his self-revelation in Christ is domesticated and adapted to it until it all becomes a form of natural theology.”<sup>16</sup> Or to state this concern more incisively, Torrance scholar Elmer Colyer contends that according to “this kind of approach, the doctrine of the Trinity comes as an addendum to an independently developed doctrine of the One God in which the two are not integrally related.”<sup>17</sup>

Yet Torrance believed that a natural theology transformed in the light of Christian faith provides a lens through which to see the world properly.

Once we have known God, known him as Redeemer and so as Creator, we do come to see that the heavens declare the glory of God and the firmament showeth His handiwork [Ps 19:1]. Granted that, but that is possible because *we know God already*. That is, the world is then a kind of symbol which helps us realize the God we *already know* by an act in which He has conveyed His presence and person.<sup>18</sup>

Torrance's transformation of natural theology is a radical shift from Scripture and Christian tradition which affirm that nature points to the existence of God and reveals some of his attributes (Rom 1:20), and can even be used as a preamble to the Gospel (Acts 14:15-17; 17:22-31). According to the presuppositional approach of Torrance, we must first believe in the Trinitarian God self-disclosed in Scripture, and only afterwards can we grasp His revelation in nature. Or to answer the question posed in the title of this paper—Do the Heavens Declare the Glory of God?—Torrance would answer a qualified “yes, but only to Christians.”

*Alister McGrath: A New Vision for Natural Theology*

Few will question that Alister McGrath is the most important evangelical theologian in the world today and also evangelicalism's leading science-religion scholar. Steeped in the scientific theology of Thomas Torrance, he outlines what he terms “a new vision for natural theology.”<sup>19</sup> In light of Psalm 19:1, McGrath asks the provocative questions, “What if the heavens are ‘telling [declaring] the glory of God’ in a language that we cannot understand? What if the glory of God is really there in nature, but we cannot discern it? . . . If nature is itself inactive and passive, what is the mechanism of the disclosure of glory?”<sup>20</sup>

In answering these questions, McGrath asserts, “Nature does not itself proclaim the divine glory; yet such glory may be discerned within it.”<sup>21</sup> He proposes that “the enterprise of natural theology is thus one of discernment, of seeing nature in a certain way, of viewing it through a particular and specific set of glasses.”<sup>22</sup> McGrath explains,

Nature is here interpreted as an ‘open secret’—a publicly accessible entity, whose *true meaning is known only from the standpoint of the Christian faith*. This rests, however, not upon any attempt to ‘prove’ the existence of God from observation in nature, but upon the capacity of the Christian worldview to comprehend what is observed, including the human capacity to make sense of things. The explanatory fecundity of Christian faith is affirmed, in that it is seen to resonate with what is observed. . . This idea of a “hidden meaning” or “covert interpretation” of nature is to be contrasted with the belief [i.e. the traditional view of natural theology] that nature is capable of being interpreted in a single way, valid for all times, places, and cultures.<sup>23</sup>

McGrath's presuppositional natural theology gives Christians an interpretation of nature that offers "consonance" or "resonance" between the creation and their faith.<sup>24</sup> This approach is not "a proof for the Christian belief in God," but at best it is only "deeply suggestive."<sup>25</sup> In this way, McGrath contends that the "inner coherence" within his natural theology "reinforces an *existing* belief in God"<sup>26</sup>

But according to McGrath, "Those who are 'outside'" of the Christian tradition "will *never* 'see' the true meaning of the open secret in nature."<sup>27</sup> For non-Christians the creation is "shadowy, opaque, and ambiguous."<sup>28</sup> Stated another way, McGrath asserts that "we could say that the natural order, when viewed through the prism of the Christian tradition, ceases to be a *noise* and becomes a *tune*."<sup>29</sup> But is this in fact true? For men and women lacking faith in Christ, do the heavens declare nothing but "noise"?

### Scripture, Natural Revelation & Intelligent Design

The terms "natural revelation," "natural theology," and "intelligent design" do not appear in the Bible. However, the concept that nature reveals the Creator through the handiwork of His creation is certainly affirmed in the Word of God. The two most important biblical passages dealing with natural revelation are Psalm 19:1-4 and Romans 1:18-23; and Wisdom 9:1-13 from the Apocrypha complements these scriptures.<sup>30</sup> These three passages assert that the creation features an intelligible, non-verbal (i.e., it does not use actual words; Latin *verbum*: word) divine revelation, and that this disclosure points to a Creator, revealing some of His general attributes. In addition, Romans 1 and Wisdom 13 indicate that humans are accountable before God with regard to the implications of this revelation that He has inscribed on nature.

#### *Psalm 19: The Heavens Declare the Glory of God*

Psalm 19 is structured on two panels that could be entitled, "The Book of God's Works" (v. 1-6) and "The Book of God's Words" (7-11). The first panel is a rich source of spiritual truths regarding natural revelation.

<sup>1</sup>The heavens declare the glory of God;  
the firmament proclaims the work of His hands.

<sup>2</sup>Day after day they pour forth speech;  
night after night they display knowledge.

<sup>3</sup>They have no speech, they use no words;  
no sound is heard from them.

<sup>4</sup>Yet their voice [or line] goes out into all the earth,  
their words to the ends of the world.

In the heavens he has pitched a tent for the sun,  
<sup>5</sup>which is like a bridegroom coming out of his chamber,  
like a champion rejoicing to run his course.

<sup>6</sup>It rises at one end of the heavens and makes its circuit to the other;  
Nothing is deprived of its warmth.

This marvelous passage identifies six characteristics of the divine revelation in nature.



(1) The creation is *active*. The use of five active verbs in such a short passage emphasizes that the physical world thrusts itself upon us. The heavens “declare,” the firmament “proclaims,” both of these structures “pour forth” and “display,” and their voice “goes out.” Clearly, this is in sharp contrast to McGrath’s view that “nature is itself inactive and passive.”<sup>31</sup>

(2) This activity arising from nature is *intelligible*. The psalmist employs four terms associated with intelligent communication to assert that this revelation is comprehensible: “speech,” “knowledge,” “voice,” and “words.” This is far from McGrath’s view that nature is “shadowy, opaque, and ambiguous” and only emits “noise.”<sup>32</sup>

(3) Natural revelation is *non-verbal*. As verse 3 states, the heavens and the firmament “have no speech, they use no words; no sound is heard from them.” Yet the psalmist in verse 4 quickly qualifies that a “voice” and “words” do indeed go out into the world, and that this non-verbal communication effectively reveals a message about the glory and workmanship of God. Natural revelation is like music. It does not use actual words, yet similar to a magnificent symphony it certainly speaks to everyone.

(4) The “speech,” “knowledge,” “voice,” and “words” emanating from the creation are *incessant*. They never stop and are heard constantly “day after day” and “night after night” throughout time. Notably, this revelation was not first understood with the appearance of Christians and in particular Trinitarians as suggested by Torrance and McGrath.

(5) This revelation is *universal*. It is like cosmic music. In fact, the noun “voice” in verse 4 is actually the Hebrew word *qaw*, which means “line.” In this context, it can be rendered as “a chord of music” in a heavenly hymn.<sup>33</sup> And everyone hears this melody in nature since it travels “into all the earth” and “to the ends of the world.” For the psalmist, this natural revelation is not restricted to the Hebrew people. In contrast to McGrath, “nature is capable of being interpreted in a single way, valid for all times, places, and cultures.”

(6) The message in the cosmos is a *divine revelation*. It is authored by God, and it is about God. Natural revelation transcends the physical world which transports it. Without the use of actual words, the “voice” in nature “declares the glory of God” and “proclaims the work of his hands” to every man and woman.

It is worth pointing out that Psalm 19 also offers a subtle insight regarding biblical interpretation. The psalmist refers to the 3-tiered universe, making reference to “the firmament,” “the ends of the world,” the heavens being structured like a “tent,” and the daily movement of the sun which “rises at one end of the heavens and makes its circuit to the other.” The central spiritual truth in this psalm—God reveals Himself through the creation—transcends this incidental ancient understanding of nature (or ancient science) In other words, knowing the actual structure and operation of the world is not essential for believing in intelligent design. And by implication, neither

is knowledge of the origin of the universe and life. The biblical notion of design focuses on the belief *that* nature reflects design, and not *how* design arose.

To summarize, Psalm 19 reveals that the natural world features intelligibility and points to an Intelligent Designer. Such a belief is neither idolatrous nor pagan as Barth proclaimed. Instead, Scripture unambiguously affirms the reality of natural revelation.

*Romans 1: Men Are Without Excuse*

Romans 1:18–23 also affirms the revelation in nature. In the first part of this passage, the apostle Paul writes,

<sup>18</sup>The wrath of God is being revealed from heaven against all the godlessness and wickedness of men who suppress the truth by their wickedness, <sup>19</sup>since what may be known about God is plain to them, because God has made it plain to them. <sup>20</sup>For since the creation of the world God’s invisible qualities—his eternal power and divine nature—have been clearly seen, being understood from what has been made, *so that men are without excuse* (my italics).

This passage has a number of features that are similar to Psalm 19. (1) The creation is *active*. The impact of “what has been made” by God upon humans is so powerful that they are “without excuse” because of this revelation. (2) The activity arising out of nature is *intelligible*. Similar to the psalmist, Paul employs terms associated with intelligent communication to describe natural revelation: “known,” “seen,” and “understood.” (3) The revelation in nature is *non-verbal*. Though Romans 1 is not as explicit as Psalm 19 regarding this characteristic, it is certainly implied. The wordless creation discloses some of God’s “invisible qualities.” (4) The creation’s message is *incessant*. It has emanated ever “since the creation of the world.” In contrast to the beliefs of Torrance and McGrath, this revelation was understood well before the appearance of Christians and in particular Trinitarians. (5) This cosmic revelation is *universal*. Since it is wordless, natural revelation has been “made plain” and is “clearly seen” by everyone in the world. Again, it is not limited to Christians and Trinitarians. (6) The cosmos offers a *divine* revelation. The creation is like a book in which God has written “His eternal power and divine nature.”

However, Romans 1 goes further than Psalm 19 and includes two more features about natural revelation. (7) The message in creation is *dismissible*. Even though this divine disclosure is “plain” and “clearly seen” by everyone, God has given humans the freedom to reject it, ignore it, or even call it an illusion. But there are consequences. (8) The creation makes humans *accountable*. The intelligible “voice” in nature puts us in a position where we are “without excuse” regarding its profound implications. In particular, there is no justification whatsoever for “godlessness and wickedness” or for anyone to “suppress the truth,” because the creation is a constant witness declaring to men and women the existence of an eternal, powerful, and divine Creator.

The apostle Paul also indicates that natural revelation and intelligent design are intimately connected to human sin and the first two Commandments. Continuing with Romans 1:

<sup>21</sup>For although they knew God, they neither glorified him as God nor gave thanks to him, but their thinking became futile and their foolish hearts were darkened. <sup>22</sup>Although they claimed to be wise, they became fools and <sup>23</sup>exchanged the glory of the immortal God for images made to look like mortal man and birds and animals and reptiles.

According to Paul, the pursuit of knowledge of God is closely related to the spiritual state of an individual. Violation of the First Commandment (I am the Lord your God) and the Second Commandment (Do not make idols) impacts the human ability to think. By substituting the Creator for idols of animals and “mortal man,” Paul asserts that violators “exchanged the truth of God for a lie” (Rom 1:25). More specifically, they “became fools” and “their thinking became futile.” Clearly, this passage reveals that sin causes intellectual dysfunction. And this dysfunction can manifest with the issue of intelligent design when the divine revelation in nature is dismissed and the falsehood that it is merely an illusion is embraced.

*Wisdom 13: Greatness and Beauty a Corresponding Perception of the Creator*

To further explore the notion of natural revelation and intelligent design, Wisdom of Solomon 13:1–9 offers insights that magnify Psalm 19 and Romans 1.

- <sup>1</sup> For all people who were ignorant of God were foolish by nature; and they were unable from the good things that are seen to know the one who exists, nor did they recognize the Artisan while paying heed to His works.
- <sup>2</sup> But they supposed that either fire or wind or swift air, or the circle of stars, or turbulent water, or the luminaries of heaven were the gods that rule the world.
- <sup>3</sup> If through delight in the beauty of these things people assumed them to be gods, let them know how much better than these is their Lord, for the Author of beauty created them.
- <sup>4</sup> And if people were amazed at their power and working, let them perceive from them how much more powerful is the One who formed them.
- <sup>5</sup> For from the greatness and beauty of created things comes a corresponding perception of their Creator.
- <sup>6</sup> Yet these people are little to be blamed, for perhaps they go astray while seeking God and desiring to find him.
- <sup>7</sup> For while they live among His works, they keep searching, and they trust in what they see, because the things that are seen are beautiful.
- <sup>8</sup> Yet again, *not even they are to be excused* (my italics).
- <sup>9</sup> For if they had the power to know so much that they could investigate the world, how did they fail to find sooner the Lord of these things?

Wisdom 13 expands our understanding of natural revelation and intelligent design. Most notably, it includes four direct references to the beauty in nature (v. 3 twice, 4, 7). This passage presents a marvelous balance between the artistic (“the beauty of these things”) and engineered (“their power and working”) aspects of design. Hand-in-hand, “the greatness and beauty of created things” offer “a corresponding perception of their Creator,” who is both the “Author of beauty” and the “Artisan” of the workings of nature.<sup>35</sup> And similar to Romans 1, violation of the First and Second Commandments appears. Instead of worshipping the Creator, the people prefer to worship created things like “fire or wind or swift air, or the circle of stars, or turbulent water, or the luminaries of heaven.” However, like Paul in Rom 1:20, the author of Wisdom 13:8 declares that there is no justification for such idolatry and foolishness, because “not even they are to be excused.”

To summarize, Psalm 19:1-6, Romans 1:18-23, and Wisdom 13:1-9 confirm the reality of a non-verbal revelation in nature that reflects intelligent design to everyone, everywhere, in every generation. These passages assert the Book of Nature is *sufficient* in revealing the Creator, and humans are *proficient* in discerning its spiritual meaning and implications.

### **The Revelatory Impact of Nature**

Karl Barth contends that there is no “point of contact” between humans and God to be found in the natural world. Thomas Torrance believes that “all indirect revelation,” such as natural revelation, “is confuted by the fact of [biblical] revelation.” Alister McGrath believes that the creation is “inactive and passive,” “shadowy, opaque, and ambiguous,” and merely emits “noise.” And according to Torrance and McGrath, a credible natural theology exists only if nature is viewed through a Christian and Trinitarian lens. However, these assessments of natural revelation fall short of the biblical evidence presented in the previous section. In order to test the reality of a revelation in nature, three skeptics of religion are presented to see whether or not the heavens declare the glory of God and have impacted them.

#### *Richard Dawkins: Complex Design Cries Out for an Explanation*

Richard Dawkins is the most important atheist in the world today, and he is obsessed with the notion of intelligent design in nature. This is not to say that he believes in the reality of design, because he certainly does not. But it is reasonable to say that anyone who writes an entire book attempting to dismiss design, such as Dawkins’ *The Blind Watchmaker* (1986), seems to be quite consumed by the topic. Why would any atheist bother? Could it be that Dawkins feels the impact of the revelation in nature and that he needs to justify his rejection of its clear message?<sup>36</sup>

In the opening pages of *The Blind Watchmaker*, Dawkins with remarkable candor reveals,

The problem is that of complex design. . . . The complexity of living organisms is matched by the elegant efficiency of the *apparent* design. If

anyone doesn't agree that this amount of complex design cries out for an explanation, I give up. . . Our world is dominated by [1] feats of engineering and [2] works of art. We are entirely accustomed to the idea that complex elegance is an indicator of premeditated, crafted design. This is probably the most powerful reason for the belief, held by the vast majority of people that have ever lived, in some kind of supernatural deity.<sup>37</sup>

This passage is rich with insights regarding natural revelation. First, it is important to underline that Dawkins is not a Christian or Trinitarian, and yet the "complex elegance" in nature creates a serious "problem" for him, since it could be seen as "an indicator of premeditated, crafted design." As well, he notes that this experience of nature is not limited to Christians alone, because it extends to "the vast majority of people that have ever lived." And remarkably similar to the clause "the heavens declare" in Psalm 19, Dawkins acknowledges that "complex design *cries out* for an explanation." In fact, he "give[s] up" if other people are not impacted by nature.

Second, Dawkins offers a welcomed corrective to the discussion by reminding us that intelligent design is not limited to just complexity, which characterizes so-called ID Theory. Instead, he recognizes "elegance" in nature and includes beauty as a significant indicator of design, resulting in a healthy balance between the artistic and engineered aspects of the creation, similar to that seen in Wisdom 13. Finally, Dawkins is correct in identifying the level of certitude regarding natural revelation. Design is ultimately a "belief," and not a proof. In particular, "complex design" is a "powerful reason" or argument held by most people for the belief in "some kind of supernatural deity."

Of course, Dawkins dismisses natural revelation and intelligent design as being merely "apparent." In other words, design is only an illusion or delusion.<sup>38</sup> Dawkins argues, "It is almost as if the human brain were specifically designed to misunderstand Darwinism [atheist evolution], and find it hard to believe."<sup>39</sup> But his argument can be recast within the context of traditional natural theology. "It is almost as if the human brain were specifically designed *by God* to *understand atheistic evolution*, and find it hard to believe." Stated another way, the Creator has gifted humans with brains that are sensitive to the incalculable reflections of design in nature, making His existence and some of His attributes "plain to them" and "clearly seen," as Romans 1 states. And God has given us the freedom to dismiss intelligent design and believe that it is merely an appearance and delusion.

#### *Charles Darwin: The Overwhelming Force of the Wondrous Universe*

Charles Darwin is the father of the theory of biological evolution. In the late 1830s he rejected his boyhood Christian faith, and during the final years of his life he became for the most part an agnostic.<sup>40</sup> Yet Darwin wrestled mightily with the issue of intelligent design throughout his entire career. For example, in a section dealing with religion from his 1876 *Autobiography*, he argues,

Another source of conviction in the existence of God, connected with the *reason* and not with the feelings, impresses me as having much more weight. This follows from the extreme difficulty or rather *impossibility* of conceiving this immense and wondrous universe, including man with his capacity of looking backwards and far into futurity, as a result of blind chance or necessity. When thus reflecting I feel compelled to look to a First Cause having an intelligent mind in some degree analogous to that of man; and I deserve to be called a Theist.<sup>41</sup>

Here is another example of a non-Christian/Trinitarian being impacted by the “wondrous universe.” The power of nature “compelled” Darwin to believe that there existed a rational God and that it was an “impossibility” to consider a world without Him. Yet he rebuts this design argument claiming, “But then arises the horrid doubt—can the mind of man, which has, as I fully believe, been developed from a mind as low as that possessed by the lowest animal, be trusted when it draws such grand conclusions?”<sup>42</sup> Consequently, Darwin concludes, “I for one must be content to remain an Agnostic.”<sup>43</sup>

Another example of the impact of nature upon Darwin occurred during the last year of his life when the Duke of Argyll challenged him with regard to intelligent design. Pointing to “the wonderful contrivances for certain purposes in nature” that Darwin had described in his books, the Duke recalls,

I said it was impossible to look at these without seeing that they were the effect and the expression of mind. I shall never forget Mr. Darwin’s answer. He looked at me very hard and said, ‘Well, that often comes over me with *overwhelming force*; but at other times,’ and he shook his head vaguely, adding, ‘it seems to go away.’”<sup>44</sup>

Obviously, for an agnostic like Charles Darwin, nature is not “inactive and passive” as suggested by McGrath. It struck him with “overwhelming force”! Moreover, nature is not “shadowy, opaque, and ambiguous” and just “noise” to use McGrath’s words again. Darwin understood completely the message in nature. Similar to the passage from the *Autobiography*, it is “impossible” not to see that nature is “the effect and the expression of mind.” Yet Darwin sheepishly confesses that the experience of design “seems to go away.” But does it? Or is it because God has given humans the freedom whether or not to pursue the significant consequences of the reality of design?<sup>45</sup>

#### *Antony Flew: The Only Satisfying Explanation*

Throughout most of his famed career, philosopher of religion and staunch atheist Antony Flew claimed that it was more reasonable to begin with the assumption of atheism until evidence for the existence of God appeared. And indeed evidence appeared with the explosion of molecular biology in the late 20<sup>th</sup> and early 21<sup>st</sup> centuries. In *There Is a God: How the World’s Most Notorious Atheist Changed His Mind* (2007), Flew writes,

Biologists' investigation of DNA has shown, by the almost unbelievable complexity of the arrangements to produce life, that intelligence must have been involved. . . . The only satisfying explanation for the origin of such 'end-directed, self-replicating' life as we see it on earth is an infinitely intelligent Mind.<sup>46</sup>

Once again, this is indisputable evidence that it does not require Christian and Trinitarian presuppositions for the revelation in nature to be understood, as claimed by Torrance and McGrath. And to refute Barth, molecular biology was "a point of contact" between Flew and God. Moreover, Flew was quick to qualify that his belief was in the God of deism, an impersonal divine being that takes no interest in humans. In this way, he affirms the limitations of natural revelation. It only points to "an infinitely intelligent Mind," but does not reveal Him fully. This other revelation is found in Scripture. As *The Belgic Confession* affirms, God "makes himself more clearly and fully known to us by his holy and divine Word."

This section opened with Dawkins claiming that "complex design cries out for an explanation," and it closes with Flew stating that belief in a Creator is "the only satisfying explanation." The fact that non-Christians/Trinitarians like atheist Richard Dawkins, agnostic Charles Darwin, and atheistic-come-deist Antony Flew have been powerfully impacted by design in nature demonstrates the reality and power of natural revelation. In considering the force of molecular biology upon Flew, the rhetorical question in Wisdom 13:9 can be recast for our generation. "For if *modern scientists* have the power to know so much that they *can open and investigate the cell*, how do they fail to find sooner the Lord of *DNA*?" The answer I believe is simple—sin. Even though "the heavens declare the glory of God," the Lord has given humans the freedom to dismiss His clear revelation inscribed on nature.

### **Toward a Biblical Model of Intelligent Design**

Valuable insights can be drawn from concepts presented through this paper in order to propose a model of intelligent design from a biblical perspective. The purpose of a model is to include as many interpretations as possible, including those which reject design or deem it as noise. In this way, there is no single interpretation of design, but many interpretations, including numerous Christian design positions.

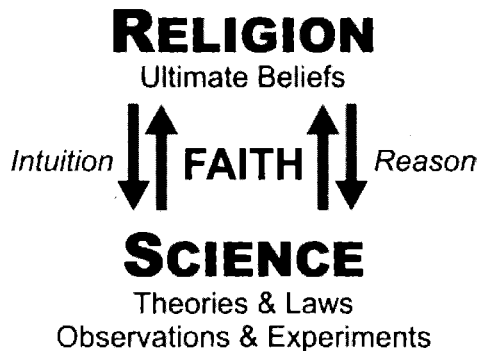
The proposed model of intelligent design is rooted in one of the most important passages in Scripture, the great chapter on faith in Hebrews 11. The opening verses state,

<sup>1</sup>Now faith is being sure of what we hope for and certain of what we do not see . . . <sup>3</sup>By faith we understand that the universe was formed at God's command, so that what is seen was not made out of what was visible.

This passage rejects that anyone can *prove* the world was created by God. Only through a step of faith does one come to the *belief* in a Creator. Yet this is not to say that faith is irrational, because this passage affirms that faith has a rational component by including the terms referring to intelligibility: “sure,” “certain,” and “understand.” Therefore, by using scientific evidence from nature, such as the amazing fine-tuning of natural laws, a reasonable *argument* can be formulated to support a belief in a Fine-Tuner. One might be “sure” and “certain” that this evidence affirms “the universe was formed at God’s command,” but in the final analysis, the acceptance of a Creator is a belief that comes through an act of faith.

In light of Hebrews 11, this model of design embraces an interpenetrative relationship between science and religion as depicted in **Figure 1**. Interpenetration recognizes reciprocal steps of faith—one from science to religion, and the other from religion to science. Regarding intelligent design, science offers physical evidence to support the belief in design, while religion provides the belief to expect reflections of design in nature. Thus there is no need to set up a false dichotomy between evidentialism and presuppositionalism.<sup>47</sup> Interpenetration between science and religion offers both an argument *from* design and an argument *to* design, respectively. Though I appreciate the latter and embrace it to a certain extent, historically the issue of design has been cast most often as arguing for the existence of God from design.<sup>48</sup> Psalm 19, Romans 1, and Wisdom 13 fit best within a context of an argument from design.

**Figure 1.**  
**Interpenetrative Model**  
**of Science & Religion**



The most controversial aspect of the suggested design model is the inclusion of the impact of sin as a critical component. Romans 1:20 and Wisdom 13:8 unambiguously refer to human accountability regarding the divine revelation in nature. Men and women are deemed “without excuse” should they refuse to listen to the “voice” in creation. In Romans 1 and Wisdom 13, the breaking of the First Commandment leads to idolatry and the transgression of the Second Commandment. I am thoroughly



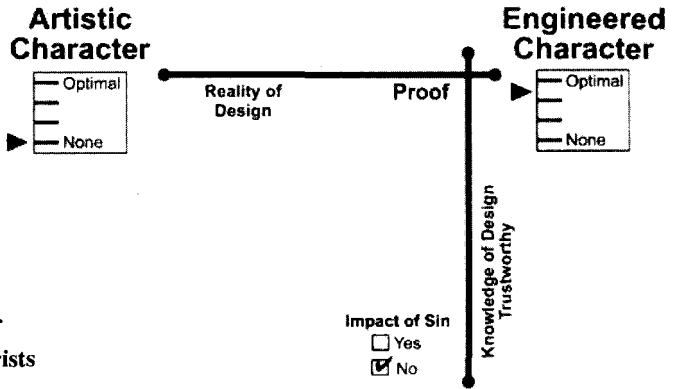
unapologetic for believing in the reality of sin and its dysfunctional effect upon the human mind. In my opinion, models of intelligent design that do not include the impact of sin as a factor cannot judiciously be called “Christian.”

The proposed design model features two intersecting parameters. The ontological parameter of design deals with the nature of design. This parameter asks the question, What exactly *is* design? The epistemological parameter of design relates to the human ability to know design. This parameter asks, How *certain* is the knowledge of design? In order to understand the relationship between these two parameters, picture the intersection of a horizontal bar (ontological) and a vertical bar (epistemological). These two bars can be moved about in an infinite number of ways, resulting in an incalculable number of interpretations of design as seen in **Figures 1-5**.

The ontological parameter focusses on the nature of design—its (1) character, (2) gradient, and (3) integrity. First, design includes both artistic and engineered characteristics which manifest across the parameter. At one end, design entails the breath-taking beauty and harmony that adorns the world. Like a splendid painting or moving musical piece, nature reflects the esthetic genius of a Cosmic Artist. At the other end of the ontological parameter, the complexity, functionality, and deep mathematical rationality within the cosmos point to the mind of a Supreme Engineer. Second, the artistic and engineered characteristics in the world are expressed across a gradient that ranges from optimal to none. The design gradient accounts for features in nature which are unaesthetic and dysfunctional. For example, it is difficult for most to look at a new-born infant with a cleft lip and palate. Something went horribly wrong during the embryological development of the face in the womb. But such heart-breaking examples are part of the creation. Third, the integrity of intelligent design deals with the question of whether design is real or only an illusion.

The epistemological parameter deals with the ability to know design—its (1) level of certainty, (2) relationship to sin, and (3) integrity. First, this parameter recognizes a range of certitude regarding design knowledge. At one end, artistic and engineered characteristics in nature are claimed to be *proof* for design. At the other end, these characteristics are deemed *inert* with no effect whatsoever. Different levels of certainty exist between these boundaries. Many individuals suggest that beauty, complexity, and functionality provide a legitimate *argument* for design with a level of certitude similar to the legal concept of “beyond reasonable doubt.” Others maintain these features are only *suggestive* of the existence of design, and some assert that these characteristics are simply *consistent* with belief in design. Second, intelligent design is intimately connected to the impact of sin and our relationship with God; in particular, the First and Second Commandments. I contend that this factor often plays a determinative role in the rejection of design. Third, the integrity of design knowledge examines whether or not this knowledge is trustworthy.

Changing the intersection between the two design parameters produces various interpretations of intelligent design. For example, **Figure 2** depicts the view of design held by Intelligent Design Theorists. They accept the reality of design (as indicated by the solid line on the ontological parameter), but focus solely on the engineered machine-like features of the cell like the flagellum, disregarding completely the artistic aspects of nature (therefore the intersection on the ontological parameter is at the extreme right).<sup>49</sup> ID Theorists claim that design is scientifically detectable. If this were the case it would mean that design can be proven, like any other scientific fact (thus the solid line on the epistemological parameter and its intersection at the very top). And since design is purportedly scientific, human sin plays no part whatsoever in ID Theory. But from my perspective, this view of design is not Christian. It disregards both the element of faith necessary to believe in design (Heb 11:1, 3) and the impact of sin that is operative in assessing design (Rom 1:20, Wis 13:8).



**Figure 2.**  
**Design Interpretation of**  
**Intelligent Design Theorists**

**Figure 3** presents the design interpretation of Richard Dawkins. He dismisses the reality of design and claims it is merely an illusion (as indicated by the broken line on the ontological parameter). Despite this denial, Dawkins acknowledges “complex elegance” and affirms both the artistic and engineered characteristics of design, placing them in a balanced relationship (therefore the intersection in the middle of the ontological parameter). In stating that “[i]t is almost as if the human brain were specifically designed to misunderstand Darwinism, and find it hard to believe,” Dawkins is by implication suggesting that for the most part the human mind does not have the ability to offer trustworthy knowledge about design (thus the broken line in the epistemological parameter). Of course, like many modern atheists who see themselves as special thinkers, Dawkins transcends the plight of most humans. However, nature strikes him with great force. As Dawkins states, “If anyone doesn’t agree that this amount of complex design cries out for an explanation, I give up.”<sup>50</sup> Consequently, nature is not inert, or simply consistent with intelligence, or merely

suggestive. For Dawkins the certitude of design is similar to a strong argument, since it “is probably the most powerful *reason* for the belief . . . in some kind of supernatural deity”<sup>51</sup> (therefore the intersection is at the level of an argument on the epistemological parameter). And of course, this famed atheist vehemently rejects the Christian belief in sin. Yet unwittingly, Dawkins’ experience with nature affirms many features of the biblical understanding of design. The creation is active in offering a divine revelation that is intelligible, incessant, and universal. It is even dismissible. Yet Scripture also states that we are all accountable, including Dawkins, with regard to this non-verbal revelation in nature.

Figure 3.  
Design Interpretation  
of Richard Dawkins

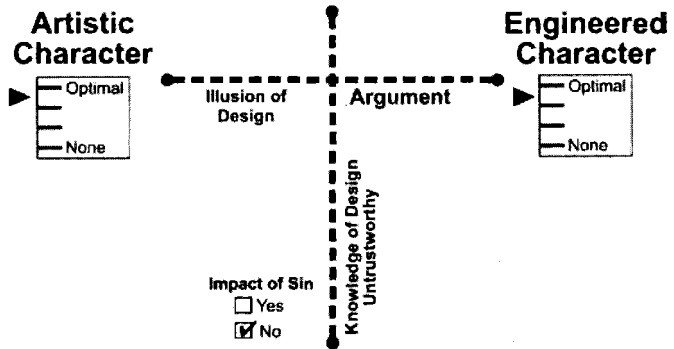
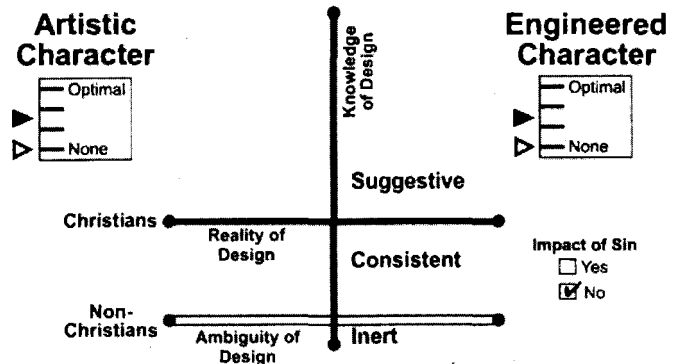
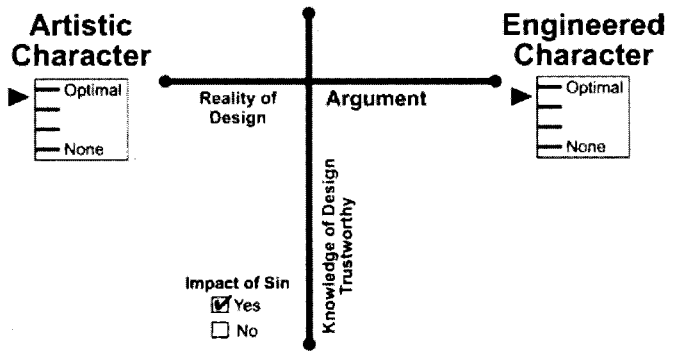


Figure 4 depicts the dichotomous understanding of design embraced by Alister McGrath. In his two central books on natural theology, *The Open Secret* (2008) and *A Finely-Tuned Universe* (2009), he recognizes beauty and fine-tuning in nature as indicators of design, *but perceived only by Christians* (thus the solid line and

Figure 4.  
Design Interpretation  
of Alister McGrath



intersection in the middle of the ontological parameter for Christians). According to McGrath, the physical world offers a natural revelation to Christians that is only “consistent” or at best “suggestive” of an Intelligent Designer (as indicated by the intersection between these two levels of epistemological certitude). In this way, both gradients of design would be midrange (black triangles). In contrast, for non-Christians nature is “shadowy, opaque, and ambiguous” and only emits “noise” (as indicated by open line in ontological parameter with the intersection at the inert epistemological level). Similarly, both design gradients are near the bottom (open triangles). It is truly remarkable that the impact of sin plays no part in McGrath’s natural theology. There is no mention of the “without excuse” clause in Romans 1:20 or that in Wisdom 13:8. Other than a few couple superficial uses of Psalm 19:1 and Romans 1:19, McGrath presents a view of natural theology as if the classical passages dealing with natural revelation— Psalm 19:1-6, Romans 1:18-23, and Wisdom 13:1-9—never existed. I deem McGrath’s view of design as un-biblical.



**Figure 5.**  
**My Interpretation of**  
**Intelligent Design**

Figure 5 presents my interpretation of intelligent design. I believe that design in nature is real and that God has gifted the human mind with an ability to discern trustworthy knowledge of design. Over time I have found a greater appreciation for the beauty in nature, and thus my ontological parameter of design has shifted further toward the artistic end. I perceive the artistic and engineered gradients as high, but not optimal. The natural world includes elements that are not at all esthetic, like disfiguring facial skin cancers. At times living organisms do not functional properly, as in the case of biochemical diseases. I suspect that God created the world this way because it offers us an environment with genuine freedom. Perfect optimization would be coercive, eliminating the need for faith. In other words, if everything in nature was optimally beautiful and functional, it would in effect be like a proof for intelligent design. And if some want to focus on the unsightly and inoperative aspects of nature in an attempt to justify their unbelief, the Creator has given them the freedom to do so. But from my perspective, the beauty, complexity, and functionality in nature far outweigh the occasions of ugliness and dysfunction.

## Final Thoughts on Intelligent Design

An aspect of intelligent design that I find astonishing is that as science advances, greater manifestations of beauty, complexity, and functionality are discovered. Take for example Christians in earlier generations who believed in geocentricity or the 3-tier universe. Is there any doubt that when looking through the Hubble telescope today, we have an appreciation of the heavens that is incalculably more magnificent and God-glorifying? If intelligent design were merely an antiquated notion, like these ancient understandings of the structure of the cosmos, scientific discoveries would have dismissed it long ago just as it did with these ancient astronomies. But history demonstrates that as scientists probe deeper into the Book of Nature, an esthetic genius and mechanical rationality become more and more obvious. And in a subtle way this non-verbal revelation in nature beacons the Book of Scripture and a fuller disclosure of the Intelligent Designer.

To be sure, intelligent design is controversial. The reason is that everyone knows where design logically leads. If design is real, it points to the existence of a Creator. And if there is a Creator, it reasonably follows that He is Lord over the entire universe and all our lives. Intelligent design thrusts men and women at the feet of their Maker and calls them to accountability. Design forces us to deal with the First Commandment and it puts us in our proper place within the creation—we are the creatures and God is the Creator. And yes, the implications of design are deeply personal. For some the “voice” in nature calls for profound lifestyle changes. I will go so far as to say that on Judgment Day anyone standing before God claiming not to have found any evidence for His existence may well receive a review of the innumerable times that the creation “declared the glory of God” and even struck them “with overwhelming force.” And yes, they will be judged as being “without excuse.”

1 Bruce A. Demarest contrasts “special revelation” with “general revelation,” defining the latter as being “mediated through nature, conscience, and the providential ordering of history, [and] traditionally has been understood as a universal witness to God’s existence and character.” *General Revelation: Historical Views and Contemporary Issues* (Grand Rapids, MI: Zondervan, 1982), 14.

2 My italics. *The Belgic Confession* (1985 version) accessed 19 Jun 2014.

[http://www.crcna.org/sites/default/files/Belgic%20Confession\\_old.pdf](http://www.crcna.org/sites/default/files/Belgic%20Confession_old.pdf). I have made one modification to the text changing “he makes himself known to us more openly by . . .” to “he makes himself more clearly and fully known to us by . . .” in order to better translate the original French “Il se donne à connaître à nous plus manifestement et évidemment par . . .” Philip Schaff, ed. *The Creeds of Christendom* 3 vols. (Grand Rapids, MI: Baker, 1996), III:384.

3 Regrettably, in the last twenty years the term “intelligent design” has been co-opted and muddled by the so-called “Intelligent Design Movement.” Claiming to detect design *scientifically*, ID Theory is a narrow view of design connected to miraculous interventions in the origin of life. In other words, it is a god-of-the-gaps model. Therefore, ID Theory should be termed “*Interventionistic Design Theory*.” See Michael J. Behe, “Design vs. Randomness in Evolution: Where Do the Data Point?” *Canadian Catholic Review* 17:3 (July 1999), 63-66;

Denis O. Lamoureux, "A Box or a Black Hole? A Response to Michael J. Behe." *Ibid.*, 67-73; Phillip E. Johnson and Denis O. Lamoureux, *Darwinism Defeated? The Johnson-Lamoureux Debate on Biological Origins* (Vancouver, BC: Regent College Press, 1999).

4 Karl Barth, *Church Dogmatics*, G.W. Bromiley and T.F. Torrance, eds. 13 vols. (Edinburgh, UK: T & T Clark, 1957), II/2: 191-192. My italics. In his famed 1934 debate with Barth over natural theology, Brunner bluntly notes that Barth had a "one-sided concept of revelation" and "a queer kind of loyalty to Scripture to demand that such a revelation [i.e., natural revelation] should not be acknowledged [from passages such as Rom 1:19-20, 2:14-15], in order that the significance of biblical revelation should not be minimized." Emil Brunner, "Natural Theology and Grace" in Emil Brunner and Karl Barth, *Natural Theology* (Eugene, OR: Wipf and Stock, 2002), 25, 48.

5 Karl Barth, "No! Answer to Emil Brunner" in *Natural Theology*, 71, 107, 121. In contrast, Brunner firmly embraced "a point of contact". "Natural Theology and Grace," 21, 32-33, 56.

6 *Church Dogmatics*, I/1: 273.

7 *Ibid.*, II/1: 173.

8 *Ibid.*, 84. Holder correctly contends that "Barth's approach leads ultimately to an irrationalism which deprives Christians of an important means of commending faith in a pluralist society." Rodney Holder, "Karl Barth and the Legitimacy of Natural Theology" *Themelios* 26:3 (2001), 22. Or as Barr notes, "Barth's rejection of natural theology was never really based on biblical exegesis . . . At times Barth seemed to treat biblical scholarship with mere contempt, and brushed it aside: he could do better himself[!]." James Barr, *Biblical Faith and Natural Theology* (Oxford, UK: Clarendon Press, 1993), 103, 118.

9 Or as Torrance terms it, "the demonic natural theology of the Nazis." Thomas F. Torrance, *The Ground and Grammar of Natural Theology* (Charlottesville, VA: University of Virginia, 1980), 89.

10 *Church Dogmatics*, II/1: 173.

11 Anselm, *Monologion and Proslogion with the Replies of Gaunilo and Anselm*, Thomas Williams, trans. (Indianapolis, IN: Hackett Publishing, 1996), 99.

12 Thomas F. Torrance, "The Transformation of Natural Theology" in *Ground and Grammar*, 75-109. For his explanation of "scientific theology," in his *Theological Science* (London, UK: Oxford University Press, 1969), 106-140.

13 Athanasius, "Four Discourses against the Arians," in Philip Shaff and Henry Wace, eds., *Nicene and Post-Nicene Fathers*, second series, 13 vols. (Grand Rapids, MI: Eerdmans, 1980), IV: 326. See Thomas F. Torrance, *The Trinitarian Faith* (Edinburgh, Scotland: T&T Clark, 1995), 6, 49, 76-77.

14 *Ground and Grammar*, 89.

15 Thomas F. Torrance. "The Christian Doctrine of Revelation" Lecture Auburn Theological Seminary (1938-1939), 11. Quote in Alister E. McGrath, *Thomas F. Torrance: An Intellectual Biography* (Edinburgh, Scotland: T&T Clark, 1999), 188.

16 Thomas F. Torrance, "The Problem of Natural Theology in the Thought of Karl Barth" *Religious Studies* 6:2 (1970), 125, 128.

17 Elmer M. Colyer, *How to Read T.F. Torrance: Understanding His Trinitarian and Scientific Theology* (Downers Grove, IL: InterVarsity Press, 2001) 131.

18 "Revelation," 32; *Torrance*, 188. My italics.

19 I am befuddled as to why Torrance and McGrath repeatedly emphasize that their natural theology is Trinitarian. For example, the first half of McGrath's *A Fine-Tuned Universe* is entitled "A Trinitarian Natural Theology." But other than incessant proclamations of his natural theology being Trinitarian, very little integration appears. The same can be said regarding John Polkinghorne's "Trinitarian perspective" of science and theology. This all strikes me as being merely fashionable Christian rhetoric. See Alister E. McGrath, *A Fine-Tuned Universe: The Quest for God in Science and Theology* (Louisville, KY: Westminster John Knox Press, 2009), 9-108; John Polkinghorne, "Physics and Metaphysics in a Trinitarian Perspective" *Theology and Science* 1:1 (2003), 33-49.

20 Alister E. McGrath, *The Open Secret: A New Vision for Natural Theology* (Oxford: UK: Blackwell Publishing, 2008), 2, 136.

21 *Ibid.*, 136.

22 *Ibid.*, 3.

24 *Ibid.*, 16-17, 125. My italics.

The theme of consonance and resonance appears throughout McGrath's *Open Secret*. *Ibid.*, 17, 77, 79, 222, 233, 234, 270.

25 *Fine-Tuned Universe*, xii-xiii.

26 *Open Secret*, 17, 18. My italics.

27 *Ibid.*, 139. My italics.

28 *Ibid.*, 173.

29 *Ibid.*, 184. My italics. This theme that nature does not reveal God outside of Christian faith runs through McGrath's central book on natural theology. For example, "though the natural world is open to public gaze, its proper interpretation is hidden . . . Nature is not merely neutral; it is ambiguous. It may be silent or may even actively conceal the divine . . . nature itself cannot be said to mandate or authorize any specific reading." *Ibid.*, 76, 116, 125.

30 Other passages supportive of intelligent design include Prov 8:22-31; Job 38-41; Ps 8, 93, 104, 139:13-14 and 148; and Acts 17:22-31. See also Barr, *Biblical Faith and Natural Theology*, 19-38, 81-101.

31 *Open Secret*, 136.

32 *Ibid.*, 173, 184.

33 Francis Brown, S. R. Driver and C.A. Briggs, *Hebrew and English Lexicon of the Old Testament* (Oxford, UK: Clarendon Press, 1951), 876.

34 Regarding ancient science in Scripture, see Paul H. Seely, *Inerrant Wisdom* (Portland, OR: Evangelical Reformed, 1989); Denis O. Lamoureux, "Lessons from the Heavens" *Perspectives in Science and Christian Faith* 60:1 (2008), 4-15; *Evolutionary Creation: A Christian Approach to Evolution* (Eugene, OR: Wipf and Stock, 2008), 105-176.

35 Another misguided aspect of Barth's view of natural revelation is that he rejects the notion of any "analogy of being" (*analogia entis*) between the Creator and His creation, such as that clearly presented in Wisdom 13. That is, he dismisses any similarity between that which is created and God the uncreated being. According to Barth, "I regard the *analogia entis* as the invention of the Antichrist." *Church Dogmatics*, I/1: xiii.

36 To make it very clear, I am not judging Dawkins' eternal destiny. Only God can do that. I am merely asking academic questions regarding why Dawkins holds the views he does.

37 Richard Dawkins, *The Blind Watchmaker* (London: Penguin Books, 1991 [1986]), Dawkins, *Blind Watchmaker*, xiii, xvi. My italics.

38 See also Richard Dawkins, *The God Delusion* (New York, NY: Houghton Mifflin, 2006), 2, 156-157.

39 *Ibid.* xv. My italics.

40 See Denis O. Lamoureux, "Darwinian Theological Insights: Toward an Intellectually Fulfilled Christian Theism. Part I: Divine and Intelligent Design" *Perspectives in Science and Christian Faith* 64:2 (June 2012), 108-119; "Part II: Evolutionary Theodicy and Evolutionary Psychology" 64:3 (Sept 2012), 166-178.

41 Charles Darwin, *The Autobiography of Charles Darwin, 1809-1882*. Nora Barlow, ed. (London: Collins, 1958), 92-93. My italics.

42 *Ibid.*, 93. The problem with Darwin's rebuttal is quite obvious. What has he just done to make his argument? He trusted his mind developed from the lowest animal! In other words, his argument is circular; more specifically, it suffers from self-referential incoherence. Alvin Plantinga recognizes this problem in *Warrant and Proper Function* (New York, NY: Oxford University Press, 1993), 216-237.

43 *Autobiography of Darwin*, 94.

44 Francis Darwin, ed., *The Life and Letters of Charles Darwin*, 3 vols. (London: John Murray, 1887), I:316. My italics.

45 Again I am not judging the eternal destiny of anyone. I am only asking academic questions in the light of the Bible's view of natural revelation.

46 Antony Flew, *There Is a God: How the World's Most Notorious Atheist Changed His Mind*, with Roy Abraham Varghese (NY: HarperOne, 2007), 123, 132.

47 See Ronald B. Mayers, *Both/And: A Balanced Apologetic* (Chicago, IL: Moody Press, 1984).

48 One of the best examples of the argument to design comes from John Henry Newman. "I believe in design because I believe in God; not in God because I see design." C. Dessain, ed. *The Letters and Diaries of John Henry Newman*, 31 vols (Oxford, UK: Clarendon Press, 2006), XXV:97.

49 For example, Michael J. Behe, *Darwin's Black Box: The Biochemical Challenge to Evolution* (New York, NY: Free Press, 1996), 39, 69-72.

50 Dawkins, *Blind Watchmaker*, xiii.

51 *Ibid.*, xvi. My italics.

## Book Reviews

**Kenneth A. Kitchen & Paul J.N. Lawrence** *Treaty, Law and Covenant in the Ancient Near East* Harrassowitz Weisbaden 2012 1641 pp. Hb. £219.50. ISBN 978 3 4470 6726 3

This is the title of an important publication from the hand of Professor Kenneth A. Kitchen, one of our Vice-Presidents, prepared with the collaboration of P.J.N. Lawrence --- K.A. Kitchen and P.J.N. Lawrence, *Treaty, Law and Covenant in the Ancient Near East*, 1. *The Texts*, 2. *Text, Notes and Chromograms*, 3. *Overall Historical Survey*. .

It is a substantial work (volume 1 weighs about 8 lbs = 35 kg., and the three volumes together run to 1086+268+288 pages), in which in volume 1 the text of every significant known ancient near eastern treaty, law code and covenant (the English Biblical word for 'agreement' or 'treaty') -- Sumerian, Babylonian, Assyrian, Egyptian, Hittite, Hebrew and Aramaic -- is printed out in Romanised transcription with facing translation, and concluding with three comparable Greek texts in translation (the Law Code on a stone monument from Gortyn in Crete, and Treaties between Carthage and Macedon recorded by Polybius and between Rome and Lycia on a bronze tablet (Texts 104-106)). All the texts are supported in volumes 2 and 3 by background discussion, relevant commentary (including Old Testament passages, particularly in Exodus, Numbers and Deuteronomy: 2, pp.71-84, 237-43; 3, pp.117-28, 137-47), bibliography, and useful indices.

The point of collecting and analyzing these texts is that just as in primitive societies unwritten but often strictly enforced standards of behaviour are followed (see e.g. R. Lowie, *An Introduction to Cultural Anthropology* (New York, 1940), pp.284-97), and as in our own culture today there are codes of conduct (written but usually accepted by us without reading them), so in ancient times these texts demonstrate a comparable situation. They differ in detail, but all represent responses to the major problem of mankind that people tend not to behave without selfishness and conflict (as clearly



recognised e.g. in Psalm 14:1-3 and Romans 3:10-12), and therefore societies need to regulate relationships both within communities and between nations.

Analysis of these ancient texts shows that in them the material they contain follows a general literary pattern, including elements, some or all of which are present, namely: (1) Title and/or Preamble, (2) Prologue [including history of previous relations], (3) Laws or Stipulations, (4a) Deposit [placing a written copy in a palace or temple], (4b) Reading out [in public on a formal occasion], (5) Witnesses, (6a) Blessings [resulting from adherence to the conditions], (6b) Curses [resulting from non-adherence to the conditions], (7) Oath, (8) Solemn Ceremony, (9) Epilogue, and final occasional details.

All this material is set out in accessible form, with the content of each text clarified by inserted section sub-headings indicating which of these elements is present. The documents are arranged in chronological order, with the Old Testament Hebrew passages placed in their appropriate positions.

Apart from the convenience of having all this material in accessible form, it is clear from the chronological arrangement that the details of the literary patterns underwent modification over the centuries, an observation that makes it possible to place texts which are not themselves precisely dated in their proper chronological contexts. This chronological order is largely determined by those numerous texts which are self-dating, the Law Code of Hammurapi [Text 14], for instance, is known to belong in the early second millennium B.C. The Biblical texts have their own dates, the Ten Commandments [Text 82.I], for instance, are associated in the Old Testament with the time of Moses, the late second millennium B.C., though these dates are often questioned in critical studies, so it is appropriate to match their literary forms with those of the dated non-Biblical texts. Analysis of the literary patterns of the Biblical texts shows that they fit logically in the sequence in the positions which bear out their own internal dating evidence.

In addition to the presentation of the documents in transcription and translation together with comments and overall discussion, they are each represented in graphic form (Chromograms) in fifteen colour plates (Vol. 3. pp. 253-268) which show at a glance, document by document, the presence or absence of the component literary elements, the last two plates summarizing the main trends. These make clear significant differences over the centuries. This is particularly notable in the changes from the second to first millennium B.C. (periods discussed in 3, pp.93-214 and 215-236), a time relevant for Old Testament study.

The observation that Biblical texts had features comparable to those found in ancient Near Eastern, particularly Hittite, texts was noted in 1954 by G.E. Mendenhall, and when the Vassal Treaties of Esarhaddon, 7th century B.C., [Text 94], discovered at Nimrud in the 1950s, were first published in 1958 by D.J. Wiseman, superficial students of the Old Testament took particular notice of it, assuming that the parallel

between these treaties and the Old Testament covenants suggested that the latter were to be dated like them in the first millennium B.C., an assumption that was widely taken up in secondary literature on the Old Testament.

An important conclusion demonstrated by the collection and organization of this evidence is that substantial parts of the Pentateuch are convincingly dated in the late second millennium B.C. and not, as is assumed in much critical study of the Old Testament, in the first millennium, even in the period of the Exile. It is to be hoped that this conclusion will be understood and accepted.

Reviewed by T.C.Mitchell

**Kevin DeYoung** *What does the Bible really teach about Homosexuality?*  
Nottingham 2015 IVP 158pp Pb. £7.99 ISBN 9 781783 592876

This book was published too late to be included in our April edition which was devoted to the topic of homosexuality. This volume is a vigorous defence of the traditional evangelical position on the issue. From the outset the author, a senior pastor at a University Reform Church in Michigan, makes his position clear. For him the Bible is God's inspired, authoritative, unbreakable and fully trustworthy account of divine revelation which places homosexual behaviour at whatever level of commitment in the category of sexual immorality. It is a sinful activity that must be repented of. Even if one could find a scientific cause for the condition "- and even if the desires almost always come unbidden - these factors do not remove culpability from the equation."(111) For DeYoung, although our feelings for friends and family members with a homosexual orientation matter, the Christian must ultimately search the Bible for what matters most.

Although the author freely admits he is neither an orientalist nor a classical scholar he has read widely and is reliant on the excellent work done by others in this field. He rightly starts with the creation story insisting that this clearly makes marriage a complementary relationship between a man and a woman. Although he accepts that Sodom's sins included pride, gluttony and the neglect of the poor the context of the Genesis account and the testimony of extra biblical literature confirms that the men threatened Lot and his visitors with homosexual rape. He next turns to Leviticus and shows that homosexuality is treated as a capital offence along with incest and bestiality. There is nothing in the text to indicate that this only refers to exploitive relationships, which would render the exploited as innocent and not therefore open to punishment. Instead it refers to both parties as guilty and therefore are presumably consenting adults. Similarly the author maintains that the New Testament is consistent in its condemnation of homosexuality. He accepts that Jesus did not say anything about homosexuality, presumably because he adopted the universal biblical and Jewish condemnation of it. What Jesus does do is to reaffirm the creation account of

marriage found in Genesis Romans 1 refers to both gay sex and lesbianism as 'unclean' and 'contrary to nature', terms used both in the Bible and classical literature for sexual immorality. DeYoung spends some time discussing the meaning of the disputed Greek words *arsenokoitai* and *malakoi*. The former, which literally means 'man' and 'bed' he plausibly suggests is a reflection of the Septuagint translation of the Leviticus passage that would have been in Paul's mind when writing. The latter which means 'soft to the touch' was commonly used for the passive partner in a homosexual union. The author takes the two expressions to refer to the active and passive partners in a male homosexual relationship. Contrary to revisionist views, he argues that Paul cannot be just referring to sexual exploitation as both partners are treated as equals. If he was referring exclusively to paederasty why did he not use the Greek word for this (*paederastes*)? The author comments, "Of course, homosexuality isn't the only sin in the world, nor is it the most critical one to address in many church contexts. But if 1 Corinthians 6 is right, it is not an overstatement to say that solemnizing same sex behaviour- like supporting any form of sexual immorality –runs the risk of leading people to hell." (77) Is he outdoing Paul here? Paul puts homosexual offenders alongside idolaters, thieves, gluttons and swindlers and says that they will not inherit the Kingdom of God, not that they will go to hell!

Later chapters address objections to his thesis such as the cultural distance argument (that the ancient world had no concept of sexual orientation or loving, committed, monogamous same-sex relationships) and that it is unfair and fails to take God's love for all seriously. He rightly cites evidence, particularly from Plato's *Symposium* to demonstrate that some homosexual relationships continued into adulthood and that such relationships were considered natural and were long-standing. As to fairness he cites examples of singletons unable to find partners and married heterosexuals who are prevented from having sex because their partner is paralysed. But these exceptional cases do not really qualify because heterosexuals can normally find a way round their problem which is acceptable to a strict sexual ethic, which is denied to homosexuals. The author concludes by saying that God's love does not make sexual sin acceptable but changeable and forgivable and that we must always put the Bible teaching before experience.

I agree with D.A. Carson in his review, " For those interested in careful exegesis of the relevant passages (in the Bible) and patient discussion of the issues that arise from it, packaged in brevity and simplicity, it would be difficult to better this book." However, though this is not the author's intention I fear this book could perpetuate homophobic prejudice and make it far more difficult for those with homosexual orientation to find the love they so desperately need from the Christian community, of which they are a part. The book contains two appendices, one of which deals with homosexual marriage and an annotated bibliography divided into introductory, intermediate and advance literature.

Reviewed by Reg. Luhman

**Rupert Sheldrake** *The Science Delusion* Coronet 2013 392pp Pb. £10.99 ISBN 978-1-444-72794-4

This volume is introduced by the author as ‘the ten dogmas of modern science’ which he claims are holding back the advance of our knowledge of the universe around us. He outlines his background in science in detail, presumably to allay any criticism that he might be ‘anti-science’. In fact the reverse is the case, though the author outlines at the outset what he calls ‘the ten dogmas of science’ before discussing in the prologue science, religion and power.

The so-called dogmas of science can be briefly stated as: 1) Is nature mechanical? 2) Is the total amount of matter and energy always the same? 3) Are the laws of nature fixed? 4) Is matter unconscious? 5) Is nature purposeless? 6) Is all biological inheritance material? 7) Are memories stored as material traces? 8) Are minds confined to brains? 9) Are psychic phenomena illusory? and 10) is mechanistic medicine the only kind that really works?

The discussion of these ‘dogmas’ form the core of the book, some 290 pages in fact. The reviewer feels unqualified to discuss all of these chapters, but perhaps one could look briefly at the matter of mind and brain in chapter 8. Is all our experience inside our brain? For instance, when we look at the sky is the sky we see inside our skull, and our skull beyond the sky? Furthermore, have we ever felt we are being stared at from behind? These seem trivial but can be common experiences.

The study of consciousness is a matter of current investigation these days. Will it be the last great mystery? The author claims that ‘minds are extended beyond brains both in space and in time’ (page 230). One would have liked a discussion, say, on dreams – or is that a matter for scientific enquiry?

In conclusion, one should mention the author’s theory of ‘morphic resonance’, a term he has often previously outlined. By this we understand that patterns of activity resonate across both time and space. This is seen from the molecular level to society level, whether animal or human. This is discussed under ‘dogma four’.

This volume is indeed most fascinating and thought-provoking. Perhaps Alice’s thought applies here: ‘It seems to fill my head with ideas, though I’m not sure what they are’. It is a well-referenced book, each chapter given its own references, and at the end there is an index of 30 pages. I highly recommend it.

Reviewed by Dr. A B Robins

**Michael Faber** *The Book of Strange New Things* Edinburgh Canongate 2014

I have reviewed a science fiction novel in this journal previously, explaining that it is a genre that can explore theological themes. This novel is from a writer who does not normally write science fiction, but uses it to explore themes of great interest to Christians. He makes no claims to be a believer himself, but I gather he was brought up by evangelical parents and he plainly understands how we think!

Humans have colonized a planet in an alien star system.(They get there by something called ‘the Jump’, but how it works is not explained.) They have been unable to develop human agriculture there, so they are dependent on the natives to supply them with food. Unfortunately there is little they can trade them for this, apart from a few pharmaceuticals, the aliens are only interested in receiving teaching about ‘the book of strange new things’, the Bible. They were introduced to this by a Christian among early colonists, but he has disappeared, so USIC, the corporation colonizing the planet, have advertised for and imported a Christian missionary, the hero(?) of the novel.

The missionary’s wife, a nurse, was not accepted by USIC, so he has to leave her behind on an increasingly unpleasant earth. They are able to exchange regular letters by ‘the Chute’, a sort of instantaneous, interstellar email (again unexplained). Most of the novel is told through these epistolary exchanges.

I was impressed by how realistic these exchanges are. Time and again, they are just the sort of things I could imagine a contemporary married couple, who are believers, write to one another when parted. The ups and downs of the wife’s faith, in particular, echoed the sorts of things I have heard from people, as a pastor, over the years.

Equally fascinating is the fictional exploration of the problems of contextualizing the gospel. For example, how does one explain ‘the good shepherd’ to people who not only have no sheep, but have no concept of any sort of animal husbandry?

I felt the extra-terrestrial setting is not really thought through, scientifically; the wife’s dystopian earth rings truer. But I found this rewarding as a study in human relationships and the trials of faith.

Reviewed by the Rev. Dr. Robert Allaway



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