

# *Evolution and Evolutionary Creationism*

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## **1. Introduction**

F. Ayala defines ‘evolution’ generally in this way:

The theory of biological evolution (or, simply, the theory of evolution) encompasses the set of scientific concepts and propositions that apply to the origin of organisms now living on our planet and to the changes that have occurred in the living world since the origin of the first organisms to the present.<sup>1</sup>

This is quite easy to understand. Obviously, God, as an agent, does not figure in this definition. He goes on to affirm that the theory advances the picture that organisms are related by common descent; it describes an evolutionary history; and it explains the ‘how’ of evolutionary processes. Again, this is easy to grasp, but insofar as the theory universalises common descent, it excludes the special creation of organisms utilising common design and common material, and this is the **significant point of difference with the biblical doctrine of creation**.

In this essay, we will offer an overview of the minimal philosophy that goes with evolution, **methodological naturalism**, and then we will examine the approach to Bible-Science harmonisation favoured by scientists, theistic evolution or evolutionary creationism.<sup>2</sup>

## **2. Methodological Naturalism**

Our task is not to present or attack the philosophical doctrines of naturalism, materialism, or physicalism, all of which might be associated with Science. Our interest is in what philosophical doctrine is minimally associated with Science and this goes by the name of ‘methodological naturalism’.

K. R. Miller says, “Scientific materialism assumes that the objects and events of the natural world can be explained in terms of their material properties.”<sup>3</sup> And he poses the rhetorical question, “If the scientific method allows us to investigate the *distant*, does it also permit us to study the *ancient*?”<sup>4</sup> Our interest is not to question this point of view, except to observe that this doesn’t mean that material explanations are *sufficient*. There is a crucial difference between saying ‘material explanations are possible’ and ‘material explanations are the *only* ones possible’.

### **2.1 Evolution and Evidence**

Ayala states that many sources of evidence support the theory of evolution and that it is widely considered to be a ‘fact’. The important point here is that the sources are many and that they are systematically *and* incidentally corroborative. This means that some evidence has been seen to be relevant without this being sought as an objective in research; while other evidence has been described as part of an expanding body of knowledge about an organism. Incidental corroborative evidence is more persuasive precisely because its relevance was not sought and it appears as a fortunate happenstance. Expanding a body of knowledge about an organism in such a way that the knowledge is consistent with the theory of evolution is less convincing because it could be that the theory of evolution is *guiding* description rather than being ‘proven’ from independent description.

The ‘many sources of evidence’ argument is important, but we need to be sensitive to the difference between incidental corroboration and the possibility that some evidence is influenced by the theory of evolution in the way it is configured and presented. Textbooks on evolution are like this, and this is why

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<sup>1</sup> F. J. Ayala, “The Theory of Evolution: Recent Successes and Challenges” in *Evolution and Creation* (ed. E. McMullin; Notre Dame: University of Notre Dame Press, 1985), 59-90 (59).

<sup>2</sup> F. S. Collins, *The Language of God* (London: Pocket Books, 2007), 199, “theistic evolution is the dominant position of serious biologists who are also serious believers”.

<sup>3</sup> K. R. Miller, *Finding Darwin’s God* (New York: Harper Perennial, 2007), 27.

<sup>4</sup> Miller, *Finding Darwin’s God*, 28.

apologetic works on evolution are more valuable to the person investigating the creation-evolution debate.

Ayala therefore puts forward this second point. He asserts that “all biological knowledge is consistent with the notion that organisms have evolved, and virtually every biological discipline provides evidence that supports that fact”.<sup>5</sup> What is noteworthy here is the **consistency** claim. We might suspect that the truth of this claim is due to the influence of the theory, but this is not the right response. Rather, the challenge is to explain how biologists can have constructed a body of knowledge *that has turned out to be* so consistent with the hypothesis of evolution. The key phrase here is ‘that has turned out to be’ because this recognises the contingent nature of the biological research that has taken place since Darwin.

The force of the argument here is that the consistency is an historical happenstance—it might not have turned out that way when biologists tested the relevance of Darwinian ideas. Our question is therefore how a body of knowledge can be consistent without God in the picture if God is a creator. We should accept the consistency claim, but the answer is not to add God as an afterthought in a kind of theistic evolution; rather the challenge is to show how a methodological naturalism is possible and it is just a matter of research work to ensure that it is developed consistently.

## 2.2 Naturalism

Naturalism is often opposed to theism in explanatory terms, but it all depends on how we use the term ‘naturalism’. For these terms to be opposites they would have to be commensurate in some way—there would have to be opposing points of contact. But, as we shall see, this is not the case in general, although it is the case for some moments in the history of life on earth. This is the point (made above) about special creation utilising common design and common material. It may be the case that *within* a naturalistic framework of explanation that there are moments of special creation that are not taken into account (e.g. a miracle such as changing water into wine).

Our second point here though is that naturalistic explanation functions perfectly well without reference to God in the main, but this does not mean that God is not the creator of all things nor that he is not an agent involved in his creation. A metaphysical view of naturalism that excludes God in one of its propositions is not being defended here; rather, we take methodological naturalism to be the correlate to an *epistemic independence* of the natural order;<sup>6</sup> God lies beyond the natural order.

What does it mean to say that the natural order has epistemic independence? It means, most commonly, that we can describe the natural order without referring to the supernatural.<sup>7</sup> The interesting question though is *why* we can do this – overwhelmingly we do it, even if we have a place for miracles. The first suggestion would be that we are able to do this because the natural order has **causal independence**<sup>8</sup> vis-à-vis the supernatural, i.e. what we discern is its causal independence. This is not the point that the natural order is independent in terms of efficient causes (to use Aristotle), and that there are corresponding teleological (final) causes which we account for in theology.<sup>9</sup> Rather, it is the point that there is freedom

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<sup>5</sup> Ayala, “The Theory of Evolution: Recent Successes and Challenges”, 60.

<sup>6</sup> With M. Ruse, “Methodological Naturalism under Attack” in *Intelligent Design Creationism and its Critics* (ed. R. T. Pennock; Cambridge, MA: MIT Press, 2001), 363-385, 365; J. F. Haught, “Darwin, Design, and Divine Providence” in *Debating Design* (eds. W. A. Dembski & M. Ruse; Paperback Edition; Cambridge: Cambridge University Press, 2007), 229-245 (232-235); and *contra* A. Plantinga, “Methodological Naturalism?” in *Intelligent Design Creationism and its Critics* (ed. R. T. Pennock; Cambridge, MA: MIT Press, 2001), 339-361 (358); and “Reply to McMullin” in *The Philosophy of Biology* (eds. D. L. Hull and M. Ruse; Oxford: Oxford University Press, 1998), 734-754 (744).

<sup>7</sup> S. C. Dilley, “Philosophical Naturalism and Methodological Naturalism – Strange Bedfellows?” *Philosophia Christi* 12/1 (2010): 118-141 (119).

<sup>8</sup> Miller, *Finding Darwin's God*, 234-235, “Chance is not only consistent with the idea of God, it is the only way in which a truly independent physical reality can exist.”

<sup>9</sup> K. Ward, “Theistic Evolution” in *Debating Design* (eds. W. A. Dembski & M. Ruse; Paperback Edition; Cambridge: Cambridge University Press, 2007), 261-274 (270).

of expression in the independent causality of the natural order and that any final causes are tied to God's acting in the natural order.

An alternative suggestion is that the epistemic independence of the natural order is a consequence of our limits – **we can only discern a natural order**. The problem with this suggestion (so we will argue) is that many see intelligent design in the natural order, and even those who only see apparent design do not decry those who see intelligent design as irrational.

Our knowing abilities are *not* limited to the discernment of just *naturalness* in the natural order. We cannot justify methodological naturalism by excluding something 'in the natural order'; naturalism should embrace whatever is **in** the natural order, including the **effects** of God's acts or the acts of angels; but we cannot include God.

Effects are left behind by what happens and so we have the effects of the past, which Science studies. Miller says, "Evolution is partly the story of how the present is linked to the past, the story of *what happened*. In this sense, evolution is history."<sup>10</sup> If the past has left clues behind as to what has happened, and if Science can legitimately use clues in the present to construct a narrative of the past, then the notion of 'effects' here is no different to that used in ID reasoning. The difference is that ID does not purport to supply a particular natural history; just that whatever natural history we construct involves intelligent design.<sup>11</sup>

Someone might say that the scientific approach cannot discern a divine agent, but this rather invites the question as to *why*. We could criticize methodological naturalism at this point and try and adapt the method to discern divine agency. However, the claim that the scientific approach 'cannot discern a divine agent' is worth examining. Can a theological approach *itself* 'discern a divine agent'? Intelligent Design theorists might step forward here, except such theory is avowedly not theological and is in fact proposing a revision or extension to the scientific method. This is a helpful intervention by them, as it suggests that the scientific approach may be deficient. It would seem that we have the (innate?) ability to discern both the absence of agency and the presence of agency. We do this all the time, for instance, in Forensic Science, Intellectual Property Law, or Cryptography. Is the 'cannot discern divine agency' of methodological naturalism therefore unjustified?

Let us retrace our steps. What is the best justification of methodological naturalism? Is it (a) the natural order has epistemic independence – it can be known about independently of revelation *because* it has causal independence; or (b) a natural order is all we can see and explain using our own resources; or (c) both of the above? Theologically, the answer is easy: if the natural order was all we could see, would God have set things up this way? Would God have set things up in such a way that he cannot be known by looking at something in the natural order? On the other hand, if God wants a response of faith, it has to be possible that the natural order can be both known independently of divine revelation and known as creation. The natural order therefore is not all we can potentially discern. If we put theology to one side, what is the answer?

We should not accept the *spin* of those philosophers who ground the independence of Science in a methodological naturalism devoid of intelligent design. Intelligent Design theorists have accepted this premise and sought to show that the method should be *extended* to embrace intelligent design. But methodological naturalism cannot itself exclude the question of design, because the logic of the method stipulates that the natural order and any *effects* lie within the scope of Science.

The point here is that a sentence like 'God acts **in** the natural order' has two elements 'God acts...' and '...in the natural order'. If this is a true statement, methodological naturalism must have within its scope whatever the second element embraces. Typically, the second element embraces the *effects* of God's acts. This means that the argument made by intelligent design theorists could be valid if it is just about effects and not causes. But is this the case?

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<sup>10</sup> Miller, *Finding Darwin's God*, 37.

<sup>11</sup> *Contra* Miller, *Finding Darwin's God*, 92.

There is a comeback at this point which moves the discussion once more around the circle. It could be argued that methodological naturalism is not about cause and effect in isolation but about **cause-effect chains**. It isn't about natural causality and/or natural effects in isolation but about natural cause-effect explanation and the method<sup>12</sup> that sustains that explanation. Ruse says, "The methodological naturalist is the person who assumes that the world runs according to unbroken law; that humans can understand the world in terms of this law; and that science involves just such understanding without any reference to any extra or super-natural forces like God."<sup>13</sup>

Ruse is not denying the existence of God, nor denying God a role in creation; rather, he is defining Science using the notion of methodological naturalism, saying that "...*qua* science, that is *qua* an enterprise formed through the practice of methodological naturalism, science has no place for talk of God."<sup>14</sup> But he also uses the notion of 'unbroken law' and this loads the dice against theism in his definition.

Ruse is partly helpful: he admits Science *assumes* that the world runs according to unbroken law; he does not say that the world runs *only* according to unbroken law. A common definition for God acting in the world is that he acts contrary to natural law;<sup>15</sup> the identification of such acts would lie outside the domain of Science. Law is about regularity and some necessity, but we can still ask why the study and characterization of *effects* on their own cannot be undertaken in Science.

Although there may be unique events that Science describes (e.g. the Big Bang), the formulation of laws and the use of them in scientific explanation has been successful, even if we think that this model of the scientific method is not comprehensive to catch all aspects of Science (there are other models<sup>16</sup>). Ruse can certainly choose what to include within the remit of Science, as a kind of self-imposed limitation, but we can also ask why just the *description* of effects alone (as opposed to explanation) is insufficient to count as methodologically naturalistic. Could we not *choose* to count the *work of describing* as 'scientific'?

Highlighting the importance of choice here is important, but it would be wrong to think that any choice is incidental or arbitrary. Neither should we justify a choice by pointing to the general success of the scientific method because this is not in question. It is just the natural sciences as they invoke methodological naturalism in the justification of evolutionary history that is our concern. Can we universalize the scope of methodological naturalism to cover evolutionary theorizing?

### 2.3 Cause and Effect

There are obvious empirical aspects of Science – repeatability, experiment, hypothesis, prediction, *and so on*. The argument is that divine agency cannot be handled within this framework and must be excluded as a causal element. We might try and admit divine agency to the framework by treating it as a hypothesis and generate some predictions for testing; these would be based on the nature of the divine attributes and/or God's providence in the past. Philosophers do this but it is not clear that their predictions look very 'scientific' or have independence from the hypothesis; they just look like elaborations of the hypothesis.

What philosophers are doing is a matching exercise: they pick on an aspect of the scientific method such as hypothesis and prediction and model theology along these lines. If we select 'description' as our

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<sup>12</sup> We are discussing the 'naturalism' side of the tag; method is all about such things as hypothesis, deduction, predictions, evidence, confirmation and disconfirmation.

<sup>13</sup> Ruse, "Methodological Naturalism under Attack", 365.

<sup>14</sup> If Science has no place for talk of God, it is difficult to see how it can deliver evidence against the existence of God if it cannot deliver evidence in favour.

<sup>15</sup> J. Polkinghorne notes the difficulty in this definition when he says, "Miracles are not to be interpreted as divine acts against the laws of nature (for those laws are themselves expressions of God's will) but as more profound revelations of the character of the divine relationship to creation." *Science and Theology – An Introduction* (Minneapolis: Fortress Press, 1998), 93.

<sup>16</sup> For example, models that allow for laws to change over time.

element and in particular the ‘description of an effect’, we imply a cause but we have not necessarily theorized about a cause. We might exclude natural causes and/or we might postulate an intelligent cause. These two strategies often follow on, but we should ask first whether there is anything that contravenes methodological naturalism in just describing an effect and excluding a range of natural causes for that effect? Since this is obviously going on all the time in Science, the point is trivial, but for many effects in evolutionary explanation, we might well exclude all natural causal explanations because of a low probability and/or for lack of detail. It is at this point that divine agency might be suggested as the cause of the effect but this suggestion is too soon because we have not finished thinking about just the notion of an ‘effect’. We have not shown that we can talk about design let alone divine agency.

At this stage of our discussion, design would be a *type* of effect (a characteristic of an effect that defines the effect). We are familiar with design processes as exercises of intelligence, but we do not know whether God or the angels design rather than just create from *complete thoughts*. The biblical record would suggest both possibilities: creating from the spoken word suggests creation from complete thoughts; evaluation of what is made (good, wonderful; Gen 1:31; Ps 139:14), and reference to parts of a whole being made (ear, eye; Ps 94:9), suggests design.

Moving from a state of ignorance to a suggestion of divine causation is common but too fast a move. It obscures how and at what point such a move goes beyond methodological naturalism. We have shown that the description of an effect does not contravene that methodology if a cause is not characterized. However, if the conceptual and evidential resources do not exist within a system to explain a phenomenon of the system (an effect), the least that might be said is that the explanation lies outside the system. When we do this, the hypothesis of design for an effect is being drawn from the explanatory resources *inside* the system and has the logical form of “if we could explain this phenomenon using naturalistic resources, intelligent design would be our best hypothesis from those resources”.<sup>17</sup> That is, we may not be able to explain this naturalistically, but *we ourselves* could design and make this, seeing its purpose and function, if we had the means.

Methodological Naturalism, by definition, cannot yield assertions about the supernatural, but it can at any time show its own limits – what it can and cannot currently explain. What it cannot explain currently lies outside its scope and it cannot be known that it will be explained, but it can be expected that it might be explained. This expectation is an expression of confidence. We see this confidence in an outburst such as that made by F. S. Collins, “Evolution, as a mechanism, can be and **must** be true.”<sup>18</sup>

Unless we hold to a metaphysical naturalism (the natural is all there is), there is an ‘outside’ to the scope of methodological naturalism. We cannot therefore distinguish what lies genuinely outside that scope from what we cannot currently explain inside the natural order. Accordingly, of the hypotheses we might construct in this state of affairs, there can be ones that point outside the natural order. This is because we do not know whether our lack of knowledge about the natural order is a failure to know its internal workings or a failure to point outside of nature.

Thus, for an inexplicable effect within the natural order, we can certainly say that it will be explained, but equally it may be an effect that is at the boundary of the natural order with causal links outside the boundary. We can propose analogies from *within* the natural order for what lies outside that order as the cause of effects that lie at the boundary. Because these analogies come from within the natural order they conform to methodological naturalism. Making analogies is something that has been done frequently in Science.

The description of an effect in terms of intelligent design therefore comes from the resources yielded by methodological naturalism. But when we then develop the analogy and *refer* to God, we obviously go beyond the confines of that method.

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<sup>17</sup> Dembski, “intelligent design studies the *effects* of intelligent causes and not intelligent causes *per se*.” in *Signs of Intelligence, Understanding Intelligent Design* (eds. W. A. Dembski and J. M. Kushiner; Grand Rapids: Brazos Press, 2001), 7-23 (17).

<sup>18</sup> Collins, *The Language of God*, 107, my emphasis.

## 2.4 Summary

Methodological Naturalism as a method is based upon the independent causality of the natural order, but this independence is not that of a closed system. Looking at and describing effects in the natural order encounters the limits in our explanatory powers. We lack the resources inside our system of explanation to explain a range of effects. In this situation, one approach is to point to the outside using an analogy of intelligent design derived from inside the system to explain these effects. Another reaction might be ‘to wait and see’ how Science develops; yet another is to tell imaginative evolutionary stories to explain certain effects. The battle of ideas here is beneficial to all sides because it forces scientists to show how a natural ‘inside only’ explanation is possible; it engenders research and it enhances the successful knowledge claims of all sides.<sup>19</sup>

Our theology here is that God’s purposes for creation are both general and specific. Generally, they allow for independent freedom of expression in the natural order, and we can specify these goals by looking at the structure and fine-tuning of the natural order. Specifically, God’s purposes are fulfilled by his intervening and working with the natural order, for example, by creating a species such as humanity (Adam and Eve and their progeny). This means that we do not see corresponding divine action in every causal moment of the natural order.<sup>20</sup>

## 3. Creation

A brief note is needed at this juncture about ‘how evolutionists treat Genesis’. At some point, Christian writers who seek to explain evolution and persuade the general public of its truth address Genesis. Theistic evolution might be an afterthought if it places God into the gap behind the Big Bang. It might be more systematic and affirm that God is supervenient upon everything that happens as the agent behind evolutionary change. This is a different kind of ‘gap’—one which is ultimately about having a ready explanation for the spiritual dimension of human (biological) life by positing the presence of God behind all things. On either model, the *material details* of Genesis do not seem to have much relevance. To put God behind the Big Bang, you don’t need much more than Gen 1:1; to affirm that God is behind all things evolutionary, you need to treat Genesis as a cosmogony *of its day* and a story incompatible with Science in its details. The historical reality of any Genesis detail is lost on this approach.

If Genesis is relativized to its own day, it is thereby made irrelevant to our day and only rescued for our day through a process of abstraction, taking out all of its offending details. For example, it may be said that Genesis only shows to us that God is an agent behind the natural world, a fact we can express by saying (in the language of our day) that God ‘is supervenient upon everything that happens as the agent behind evolutionary change’.

It is difficult to see how this could have been the view of Jesus or the early church, and so it is difficult to see how it could qualify as an original ‘Christian’ view. It is also doubtful that it was a view of the prophets of Israel or the psalmists. The point here is that if we affirm that Genesis is a writing ‘of its time’, there are people (prophets) later than that time (separated by hundreds of years and by a changed culture) who don’t seem to relativize it in their recorded remarks—i.e. Jesus and the apostles.

The alternative to these ‘theistic evolution’ approaches is to hold that Genesis is an historical account of a special creation *within* an on-going history of the earth. This view is known as ‘old earth creationism’. The advantage of this view for a Christian is that it seeks to retain the plain detail of Genesis and shift any evolutionary history (suitably limited) to ‘what largely comes **before** Genesis’. Because the special creation of Genesis is an act (or series of acts) and not a process, an evolutionary model of explanation is partly allowed, but it is opposed for the historical event that is the Genesis creation. Moreover, since Genesis is

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<sup>19</sup> S. C. Dille, “Philosophical Naturalism and Methodological Naturalism – Strange Bedfellows?” *Philosophia Christi* 12/1 (2010): 118-141, 133.

<sup>20</sup> So, what is the best theology to supplement methodological naturalism? (1) Put divine agency everywhere. (2) Put divine agency somewhere? Our *not* seeing God in the natural order is a function of our taking its causal independence (i.e. its no-divine-agency evolution) too far. The requirement for faith implies that divine agency is there to be seen.

applied generally in the rest of Scripture, any pre-Adamic evolution we postulate is limited by our perception of intelligent design. This is our position.

There is an additional preliminary point to make about Genesis. This concerns interpretation. While the view that the earth is old can be found in Jewish writings around in Jesus' day,<sup>21</sup> it has been the established scientific view since the rise of uniformitarian geology (prior to Darwin). This has had an impact on the interpretation of Genesis as commentators have sought to accommodate Genesis to geology.

These accommodations have been global or planetary readings of Genesis. A 'local' and 'agricultural' reading of Genesis is not an accommodation since none of its interpretative elements are influenced by current scientific thinking. Rather, it is a reading that conforms to the knowledge of an original audience for the creation account, knowledge which was agricultural (and, with Genesis 4, having urban centres).

The agricultural reading of Genesis can be recovered through close textual work. The original audience is one concerned with subsistence farming of both the land and sea with a knowledge of the heavens regulating their life. This knowledge is not mythological but practical; it involves belief in God and other divine beings (later in Scripture to be called angels). God and these divine beings are responsible<sup>22</sup> for the creation of their environment and their understanding is that this work took a 'working week'.

This mirror-reads Genesis for the things being **taught** rather than read the account(s) with an eye on Bible-Science harmonisation. Thus, we do not read the account as a series of day-visions or enacted dramatic announcements, or in an idealized way portraying the creation of the universe, the earth and/or life on earth. Rather, we read the text **literally** using its intertexts to guide the interpretation.<sup>23</sup> In this way, we also avoid importing into the reading any hypothetical background knowledge possessed by the original audience (a strategy known as Accommodationism).

This preliminary point about interpretation, then, is that global and planetary readings of Genesis have arisen through understandable mis-interpretation. Later Scriptures **apply** the teaching of Genesis to all of creation, but this is an application that takes Genesis to be **exemplary**. In the past, commentators, seeking a cosmology and an understanding of the earth as a whole, have failed to see the limited perspective in the Genesis account.

#### **4. Evolution**

The theory of evolution is scientific orthodoxy. A review of the library shelves in a university shows the extent of the orthodoxy; it is worldwide, massive in size, integral to research funding, and immovable. Intelligent Design theorists are a tiny number of thinkers in comparison who have made a lot of noise. The fact that they even got noticed is surprising; it makes you wonder if there is something in what they say—something that worries the scientific establishment.

Criticism of the details of evolution goes on within the scientific community as hypotheses are revised; new data is presented, *and so on*. A casual review of Wikipedia shows that the on-going work is vibrant and committed [Dec 2103]. Hence, popular books critical of evolution can soon go out of date because scientific understanding has moved on—the details about evolution in some field or other will have changed.

Anti-evolution books are few in number and small in compass compared to the orthodoxy. If older books in this genre have relatively little science in them, they are likely to still be of relevance. If the

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<sup>21</sup> A useful survey of ancient commentators espousing an 'old earth' viewpoint is given in A. C. Custance, *Without Form and Void* (Brockville, Ontario: Doorway Publications, 1970), chap. 1.

<sup>22</sup> This is a critical point and under-valued in traditional Christian treatments of the doctrine of creation. Such treatments tend to think of God in the singular as a creator; however, the Genesis record crucially involves other divine beings and the evaluation of their work by God. This information shows that from God's point of view nature is a kind of 'workshop' in which angels carry out creative work.

<sup>23</sup> This is done in my books *Historical Creationism* and *Old Earth Creationism*.

science in them has not changed, any doubts they express are also likely to be relevant (or at least still be a matter of contention).

Popular presentations of evolution are in the same genre as anti-evolution books—they are few in number and small in compass. Both kinds of book are talking to the same audience. The rhetoric in each is comparable; our task is to understand the popular arguments for and against evolution and ignore the rhetoric. For example, where we read enthusiastic selling of a case, not mentioning contrary evidence, or the absence of ‘ifs and buts’, this is rhetoric because it is **advocacy**; what matters are just the arguments. The reason why we have advocacy in popular (pro or con) evolution science writing is the writers are trying to *persuade* religious people.

Philosophical criticism of the theory of evolution is longer lasting than scientific questioning. Within the anti-evolution and philosophy literature there are several strands to this criticism:

- **Sufficiency:** the evidence for evolution is suggestive but not sufficient; detailed evolutionary pathways are not set out (and therefore tested)—only illustrative ‘just so’ stories are told of how evolution might have occurred. This is the oldest objection to Darwin’s ideas.<sup>24</sup>
- **Complexity:** biological complexity from the small scale of the molecule up to the larger organism is extensive—it is co-ordinated and interdependent. Accounting for this complexity is best done by saying that some intelligence has been at work.
- **Agency:** Natural processes cannot exclude divine agency as an additional level of explanation accounting for such processes.
- **Change:** Assumptions are made about rates of change that facilitate our using observations about the *present* as a model of what has happened in the *past*, but these assumptions can be questioned.
- **Chance:** The probabilities that can be calculated to measure the proposed evolutionary paths are low. It is doubtful whether there is enough cosmic time for the necessary changes.
- **God, Mind and Value:** The theory of evolution is not satisfying as an explanation of the spiritual dimension of human experience.

The debate between creationists and evolutionists is a distinct topic within the Philosophy of Biology.<sup>25</sup> While some science is needed for there to be a philosophical discussion of Science, it is desirable to leave

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<sup>24</sup> P. E. Johnson expresses a different point as ‘an extrapolation fallacy’ – from limited variation of, say, finch beaks, we cannot extrapolate to the point that natural selection can yield new body plans or organs like a kidney and a liver. He amusingly observes, “If the average length of finch beaks in a population increases 5 percent following drought years, and droughts occur every ten years, how long will it take the beaks to grow from an average of one inch in length to ten feet, or for finches to become eagles?” in “The Intelligent Design Movement: Challenging the Modernist Monopoly in Science” in *Signs of Intelligence, Understanding Intelligent Design* (eds. W. A. Dembski and J. M. Kushiner; Grand Rapids: Brazos Press, 2001), 25-41 (32). D. Alexander, *Creation or Evolution* (Oxford: Monarch Books, 2008), 82, has the correct reply that changes to a finch beak would occur “only so long as its advantages outweigh its disadvantages”.

<sup>25</sup> See D. L. Hull and M. Ruse, eds., *The Philosophy of Biology* (Oxford: Oxford University Press, 1998), Part X, which has three essays on ‘Creationism’; F. J. Ayala, *Contemporary Debates in Philosophy of Biology* (Oxford: Wiley-Blackwell, 2010), Part X, which has two essays on ‘Intelligent Design’; Rosenberg, A. and R. Arp, eds., *Philosophy of Biology: An Anthology* (Oxford: Wiley-Blackwell, 2010), Part XII, which has three essays on ‘Design and Creationism’; P. Harrison, ed., *Science and Religion* (Cambridge: Cambridge University Press, 2010), Part 3, which has four essays on philosophical perspectives; and N. Murphy and J. P. Schloss, “Biology and Religion” in *The Oxford Handbook of Philosophy of Biology* (Oxford: Oxford University Press, 2008), 545-569.

scientific criticism to the scientists as much as possible. Accordingly, our focus is on the philosophy that can be found in popular presentations of the theory of evolution.

This paper is about enhancing, in a hypothetical way, the understanding we have of what it is for God to be a creator. We are allowing evolutionary processes into the old earth creationist framework alongside other creative acts. In doing this, we limit evolution as an all-encompassing framework of understanding.

## **5. Evolutionary Creationism**

‘Evolutionary Creationism’<sup>26</sup> (EC) is the new name for ‘theistic evolution’ (TE).<sup>27</sup> The phrase is bringing together evolution and creation. In biblical terms, ‘to create’ is ‘to act’—creation is an **intentional act**. Contrawise, ‘evolution’ is a term for a set of natural processes, the set being regarded as an historical and developmental process. The expression ‘evolutionary creationism’ is therefore a misnomer because creation is not a process but an act. If ‘evolutionary’ has adjectival intent, then the phrase ‘evolutionary creationism’ carries a mistake.

If we add God to the theory of evolution by saying, ‘God created the natural processes of evolution’, what we have is ‘Creationary Evolution(ism)’. This reflects the order of the older tag, ‘theistic evolution’ and isn’t much of an advance. If we go in the opposite direction and add evolution to the doctrine of creation, then we are doing nothing more than enumerating something (a set of processes) that God has created, but it has no precedence over other things that God has created to justify being given its own tag; we don’t talk of ‘theistic gravity’.

### **5.1 Three Views**

There are three potential theistic evolutionary views. The first is that God created evolutionary processes in the beginning and then stepped back, **knowing** the outcome. The corollary of this view is that God has created *through the mechanism* of evolution. The second view is that God not only created evolutionary processes, but he has had to guide evolution through history. The third view is that God is in every causal moment of evolution; there is both a natural causality and a divine causality in every causal moment. The first allows the ‘freedom’ implicit in evolution to reign supreme while the second involves guidance of this freedom; the third is not about guidance but simply expresses the fact that God is in control in all things.

The first view is not necessarily evolutionary creationism; it could be just creationism: it says God created evolution in the beginning and stepped back, much as you might say that God created gravity. It becomes theistic evolution if it is held that God has *only* created through the mechanism of evolution. To say God has *only* created through the mechanism of evolution looks too constricting. If the second view is evolutionary creationism, then it is not clear that evolution *remains evolution* when it is guided; also, whether this is fair to Science is doubtful;<sup>28</sup> as for the third view, to say that God is in every causal moment looks very metaphysical, and it competes against the theology which holds that God has created an independent natural order capable of free expression.<sup>29</sup>

There is an alternative to theistic evolution/evolutionary creationism here: we can say that within the created order evolutionary processes were (and are) created; they remain **unguided** as an expression of freedom in creation; but they are not the only means of creation—rather, they exist alongside special acts of design and creation such as those described in Genesis. This is Old Earth Creationism (OEC) and it substantially relegates any evolution to the pre-Adamic space and this framework for handling evolution

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<sup>26</sup> Alexander, *Creation or Evolution*, chap. 8.

<sup>27</sup> For a recent discussion of ‘theistic evolution’ see Antje Jackelén, “A Critical View of ‘Theistic Evolution’” *Theology and Science* 5/2 (2007): 151-165.

<sup>28</sup> The theistic evolutionist’s insistence on guidance from God has no support from Science.

<sup>29</sup> God has created an independent *other*; in fact, this is what it is for God to create; were this not the case, God would merely be extending himself, which is a pantheistic or panentheistic view.

is therefore superior to TE/EC, because it doesn't insist that such evolution (whatever we say that is, however, likely or unlikely<sup>30</sup>) is guided.

## 5.2 In the Beginning

The first variation of theistic evolution that might be put forward is simply that God 'created' evolution in the beginning and this is how he has created in the main. In one sense, this is creationism, but we need to consider the idea further. It is saying that God 'set up' evolution in the first place and that it consists of the set of historical processes and events that comprise the evolution of life. The set of events has been brought about by natural causative processes, chief of which is natural selection operating upon what appear to be random mutations/changes.

The idea that God created a set of processes that amount to an historical development of evolution is not in conflict with creationism because it is allowed that God can intervene in the natural order at any time and on any level.<sup>31</sup> Since evolution is a purposeless process in scientific description, God has presumably created a process that is **open-ended** as to its outcomes. Natural selection is not random because there is a *principle* of selection, but the mutations/changes upon which it operates are random/chance<sup>32</sup> matters. A. Gibson observes,

Evolutionary design excludes a designer, and assumes a chance-induced design (represented as an unintended set of similarities and complementary features).<sup>33</sup>

Hence, this view would imply that God values freedom of expression in the natural order for, on one level, much the same reason he created free-will in humanity. The consequence of this view is that anything that comes about and falls within an evolutionary pathway is not *specifically* created but is *something or other* that God has created. This means that this view is not 'evolutionary creationism' but it could be 'theistic evolution' or 'creationary evolutionism' depending on our definition.

Collins offers a defence of the view that God can create specifically through the process of evolution:

If God is outside of nature, then he is outside of space and time. In that context, God could in the moment of creation of the universe also **know** every detail of the future. That could include the formation of the stars, planets, and galaxies, all of the chemistry, physics, geology, and biology that led to the formation of life on earth, and the evolution of humans, right to the moment of your reading this book-and beyond. In that context, evolution could **appear** to us to be driven by chance, but from God's perspective the outcome would be entirely specified.<sup>34</sup> (My emphasis.)

This argument tries to bridge a divide between epistemology and metaphysics. God's foreknowledge of everything that has or will come to be makes his initial act of creation a creation of each thing. The hidden premise here is that this kind of foreknowledge informs the choice made in that act of creation. This is a deterministic world-view and Collins notes that it makes evolution to be **only apparently driven by chance**. This is ironic because Darwin sought to show that design was only apparent, and here Collins

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<sup>30</sup> This qualification is important because it allows for a range of attitudes towards evolution on the part of Old Earth Creationists.

<sup>31</sup> If this is not allowed, then it is held that God can *only* create through evolution. Collins, *The Language of God*, 200, gives a six-point definition of a typical theistic evolution approach which includes "4. Once evolution got under way, no special supernatural intervention was required." This strong view might be said to be in conflict with creationism; it depends.

<sup>32</sup> The view of chance that we assume is not that there is no causal story to tell for any event (or that there cannot be one, assuming we don't know what it is at the moment) but rather that there isn't a non-anthropomorphic *teleology* in such stories, and so things are a matter of chance.

<sup>33</sup> A. Gibson, "Creation versus Evolution" *The Testimony* 53 (1983): 197-236 (204). The point of support in the quote is Gibson's use of 'unintended'.

<sup>34</sup> Collins, *The Language of God*, 205.

is making evolution apparent in order to include God. The irony shows that God and chance don't fit together.

An alternative, purely metaphysical, view would be that God created a wholly deterministic world in which all things that have happened were determined by him in the initial set of conditions that he created in the beginning of the universe. This is not because he *knew* what would as a matter of fact happen, but because he has caused all things that have happened or will happen in virtue of the conditions of his initial act of creation. This has the same upshot as in the previous paragraph: freedom and chance are only apparent.

The problem for deterministic views is how you reconcile determinism with the chance inherent in evolution and with free-will in the human sphere. The same problem arises when considering divine foreknowledge: God's knowledge of the future would seem to guarantee all outcomes and make freedom illusory. This is a classic problem in philosophy and particularly medieval philosophy.<sup>35</sup>

The divide between metaphysics and epistemology helps at this point. An epistemic state on the part of God has no obvious bearing on metaphysical questions about (deterministic) causality unless we develop our doctrine of God in such a way (non-Christian) as to make such a connection (say, panentheism or pantheism). An argument is needed to establish this connection: that God's foreknowledge of a chance outcome makes that outcome available to be counted as created.

Is it possible to foreknow a chance outcome? If it is not possible to know that  $2+2=5$ , is it equally impossible to know a chance outcome? If it is not possible, then Collins' presumption that that God knows every detail of the future is false. Suppose God is considering A and B and he knows the consequences that will follow A and B. He doesn't know whether he will choose A or B because he is a free agent. It is only after choosing A that he knows its consequences will come about. Before choosing A or B, he does not know what will come to be; hence, Collins' presumption is false because God is a free agent.

Furthermore, restricting God's knowledge to actualities, present or future, seems unfair to possibilities. Why does God not also equally know what is possible? In fact, isn't the knowledge of an actual future dependent on knowing that the condition for that contingent future has happened and that until it has happened, he does not know what will happen?

What we have here is a model for understanding chance in evolution. Where there is a choice of A or B and the consequences of A and B are known, then choosing A is a choice for those consequences. But what if the choice between A and B is for there to be a further *equivalent* choice, i.e. both A and B are themselves choosings. It follows that the consequences that come about, whether of A or B, will be unknown because A and B are choosings. If we think of the vastness of chance in evolutionary pathways, the consequences that actually come about appear to be very remote from any initial choice on the part of God.

We are comparing a choice between A and B on the part of a free agent to the equal chance that A or B might occur. This understanding of foreknowledge conforms to our perceptions about what we are doing as reasoning creatures in observing chance, and accepting possibilities and contingencies. God cannot foreknow his own choice if he is genuinely free, and if evolution (a free process) is his choice, then its implicit outcomes are not foreknown. Collins is unwittingly denying this rationality.<sup>36</sup>

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<sup>35</sup> See S. M. Kaye, *Medieval Philosophy* (London: Oneworld Publications, 2008), chap. 4; for a modern discussion see J. K. Beilby and P. R. Eddy, *Divine Foreknowledge: Four Views* (Carlisle: Paternoster, 2002).

<sup>36</sup> Our argument against Collins is based on our understanding of ourselves as an image of God as we apply that understanding to God. Hence, we are presenting a dynamic 'open' view of God and not a passive or static one. P. Todd notes that "Historically, however, open theism...has had distinctively theological motivations stemming from a (putative) 'plain reading' of certain scriptural passages and the desire for a particular account of divine providence" in "Geachianism" in *Oxford Studies in the Philosophy of Religion Volume 3* (ed. J. L. Kvanvig; Oxford: Oxford University Press, 2011), 222-251 (223).

We have assumed that if God chooses A rather than B, he has also chosen the consequences of A in virtue of his knowing that they will occur. But, of course, if the consequences of A are either C or D, God will not know whether C or D will obtain; his foreknowledge is only of the possible. This at least makes the creation of C or D somewhat indirect, which is not the notion of special creation.

The commitments in this first variation of theistic evolution are few. In fact, it is difficult to see what is being added by the adjective ‘theistic’. We can see this if we consider why theologians do not talk about ‘theistic gravity’. Gravity is a consequence of bodies in an arrangement. Since all creation is theistic, including the creation of gravity, there is nothing specially added to evolution as a created set of processes that warrants the adjective ‘theistic’. The rationale for the tag ‘theistic evolution’ being applied to this first view is that advocates think that evolution is more or less the *only* mechanism of creation. This is the rub and *how much* is attributed to evolution by a commentator is the measure of their theistic evolutionary position. The other variations of theistic evolution (discussed below) add more divine intervention to their picture.

### 5.3 Guidance and Evolution

The minimal apparatus of evolution is mutation/change and natural selection. Let us suppose God created this setup in some beginning. This would just be creationism. Let us further suppose that it is mostly left alone but that God *initiates* certain mutations/changes, which means they are not chance matters, and ‘guides’ evolution in this way. Most mutations/changes have been matters of chance, but some have not been. Is this evolutionary creationism? With an **act** of creation involving the bringing about of a mutation/change, how is this not just creationism? How is that act in and of itself evolutionary? Someone might say: because it is *part* of the process of evolution; there is a wider evolutionary whole. But evolution was created in the beginning and that is just creationism. It was (is) an historical developmental process comprised of a set of processes. How can an act be *part* of this rather than an *interruption*? We might just as well say that evolution returns to being evolution after the interruption.

If evolution was created and any interruption or intervention is a creative act, the only theology here is summed up in the equation: creationism+creationism=creationism. It would seem, so far, that there is no such thing as ‘evolutionary creationism’; it looks like a tag devised to make evolution palatable to Christians, but it has no coherent purpose.

Someone might reply that evolution is fact because the sciences have shown this, and God *must* have ‘guided’ or ‘controlled’ or ‘directed’ or ‘influenced’ (choose any intentional verb you want) evolution. We should ask: Why? If evolution is fact, why can’t we say God has **not** directed it **but** carried out his creative acts **on top of** and **in addition to** unguided evolution? The assertion that God *must* have guided evolution seems like an expression of faith being placed *into* Science.

There are two more things to this point. The first is the ‘how’ question – how has God guided evolution? Philosophers of Religion tackle this question. The second thing is this: would God’s involvement in evolution (however conceived) not turn evolution into something other than evolution, i.e. creation?

Why do I pose these questions? It’s simple. Theistic evolutionists present the Science and say evolution is a fact; what they don’t do is say how **theistic** evolution is a fact or even whether it *can be* a fact. (It is the ‘can be’ that is interesting.) They keep their presentation of theistic evolution vague and highly generalized, offering not much more than ‘God guided evolution’.<sup>37</sup> But this is just a smoke and mirrors

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<sup>37</sup> For example, J. Polkinghorne, “The Inbuilt Potentiality of Creation” in *Debating Design* (eds. W. A. Dembski & M. Ruse; Paperback Edition; Cambridge: Cambridge University Press, 2007), 246-260 (258), says, “...science does not preclude the possibility of *divine intervention within unfolding evolutionary process*. This is the proposal contained in the concept of ‘theistic evolution.’ It pictures God as acting within the open grain of nature and not against that grain.” The key term here is ‘within’ and our counter-argument is that divine intervention is precisely ‘against’ the grain of chance because it brings about something that would not have otherwise have happened (foreknowledge guarantees this reason for acting).

sentence and we need to know if there is anything underneath the sentence. Essentially, the ‘guidance’ is a black box and we do not know what is in the box, if anything.

A theistic evolutionist might say that we can see a divine hand at work in natural history, intervening at key times to nudge evolution in the right direction to bring about the evolution of humans. This postulates a plan (i.e. action towards the right direction) to bring about humanity, maybe at the beginning of the evolution of life, or at some time into that evolution, and then maybe multiple nudges towards that plan. How would we justify this theology?

Let us suppose we see the divine hand at work in natural history and we agree an example back in the mists of time. How would we know that God had a *plan* for humans at that time? Could it not be that the decision to make humans was instead rather recent and not planned back sometime before the hominid line began? These questions are all about how we can justify theistic evolution as a theology and not about casting doubt on evolution.

We have documentary evidence of a decision to make humanity and so we can construct a theology of special creation, but how would we time index God’s planning to a point way back in natural history before Adam in order to couple theology to evolution? Where’s the reasoning going to come from and what is it? It doesn’t appear that we can do this and there doesn’t therefore seem to be much mileage in the idea of ‘God guiding evolution’.

#### 5.4 Design and Evolution

Daniel Dennett, a well-known advocate of evolution, in his book *Darwin’s Dangerous Idea*, says, “Evolution is not a process that was designed to produce us, but it does not follow from this that evolution is not an algorithmic process that has in fact produced us.”<sup>38</sup> How can theistic evolutionists marry evolution to God’s design-intentions when it is not designed to produce us?<sup>39</sup> Creative acts are full of design intentionality but the process of evolution is not: so, any fair theological use of evolution should not relate evolution to ongoing acts of creation. This means that ‘evolutionary creationism’ is not fair to the process of evolution as scientists have described it, and possibly incoherent as a theological system if Dennett is correct in his description of evolution.

There is a difference between a ‘how’ question and a ‘can’ question. How God has used evolution is one thing, but whether God *can* use evolution is another, especially **if it is to remain evolution**.<sup>40</sup> So, whereas special creationists may point to ‘Let us make...’ or ‘God made...’ and have nothing more to say on any ‘how’, they are not left wanting on whether God *can* make or create. In this way, non-evolutionary creationism is theologically superior to evolutionary creationism.

#### 5.5 Process and Outcome

Take any two natural processes, whether God can intervene in either or both depends on the nature of the two natural processes. This means that for any two processes you should describe the processes and show why God can intervene in either or both. We can’t presume for our convenience that God cannot have set up processes which need no intervention. This isn’t about a ‘how’ but a ‘can’ and in what way God has created the two processes to operate. The phrase ‘natural process’ as used of the weather (say, convection rainfall) but evolution has a different import. To say, “look, ‘this is a natural process’ and ‘that is a natural process’, therefore God can intervene in either”, doesn’t enter into the problem of ‘chance’ as that is built into descriptions of evolution.

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<sup>38</sup> D. Dennett, *Darwin’s Dangerous Idea* (New York: Simon & Shuster, 1995), 56. Genesis 1 ends with the creation of us, so how can evolution be part of that creative work when it is not designed to produce us?

<sup>39</sup> We can express the general problem here by observing that evolution is blind to the future – it has no future goals; how then can we marry God’s purposive creative acts to evolution when his acts are all about realizing the future?

<sup>40</sup> One way to express this point is this: if God controls or selects the variations how is this ‘natural’ selection – isn’t it superfluous?

Theistic evolutionists put forward the view that God intervenes to guide evolution. We should not ask 'how' this is done but 'can' this be done and 'would' this be done. It is said that God intervenes in the weather, so he 'can' intervene in evolution. This is a superficial comparison. We need a description of a weather process and the process of evolution, and we need to be shown what it is about the two processes that allows God to intervene and guide in both.

The opening words of Wikipedia's introduction to evolution say, "Evolution is the process of change in all forms of life over generations" [Jan 2015]. And again, here is a quote from Wiki about convection rainfall, "Convection occurs when the Earth's surface, mainly in the equatorial region, within a conditionally unstable, or moist atmosphere, becomes heated more than its surroundings, leading to significant evaporation" [Jan 2015]. More is said, but my point is that the concept of 'process' used in any description of convection rainfall is clearly not going to be the same as that used in Wiki's introduction to evolution, which involves the concept of 'generations'. The critical point here is that evolution is an *historical* process.

Suppose we have an evolutionary pathway of 100 generations. God set up the pathway in generation 1 and then left it alone completely subject to chance. God creatively intervenes in generation 50. Because of that intervention, a specific change occurs in generation 51 and because of the specific change in generation 51 a specific change occurs in generation 52, *and so on* until generation 100. Why is this not an evolutionary pathway up until generation 50 and then a creative pathway thereafter until generation 100?

Conversely, suppose instead that God intervenes in generation 50 and because of that intervention a specific change occurs in generation 51 but thereafter the pathway continues completely subject to chance until generation 100. How is the life-form of generation 100 a guided creation? Why is it that God's creative interest was not just confined to generation 50 and 51?

What this argument shows is that once you have God intervene, evolution (as Science understands it) is stopped dead in its tracks. The theological variation of theistic evolution that has God occasionally intervening, making this the definition of what is theistic about evolution, is incoherent. However, this is not an argument against the definition of 'theistic evolution' which says 'God set evolution up in the beginning' or that 'God is in every causal moment of an evolutionary pathway' (see below).

Again, suppose you create a process that intrinsically has an outcome built into it, with the intent of it leading to the particular 'a'; then when that process leads to the outcome, say the formation of 'a', then you have created 'a'. Suppose you set in place a totally free and open process, which has no specific outcomes (particulars) built in, then the intentionality of the act of creation is divorced from any particular outcome that occurs, we cannot connect the initial act of creation to the outcome. Evolution cannot be a form of creation because, as it is currently defined, it cannot be a form of creating a particular 'a', 'b', 'c', etc.; it can only be a form of creating 'something or other'.<sup>41</sup>

We should ask whether there is anything left over that is particularly evolutionary when evolution is combined with theism. We can illustrate this question as follows: Suppose God is a system designer and he creates the system of evolution in the beginning and then tracks and manages the system. This scenario is not particularly evolutionary even though we have used the word 'evolution'. We haven't specified what, if anything we are bringing from evolutionary theory into our theology. We need to explain how our tracking and management is consistent with evolutionary theory. Does this include the randomness that is intrinsic to evolutionary theory? How can there be management of randomness?

If evolution operates 'as planned', and evolutionary theory tells us the plan, then evolution is open-ended in what it delivers: the plan is 'some life or other will come about'. If that is the design, how is God managing it? God's intervention is not actually management of that plan but action 'on top of and in

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<sup>41</sup> If God created evolution which has inbuilt randomness, then *whatever* comes about in the evolutionary process, is created by him. This doesn't place God into any causal moments in an evolutionary pathway. If we placed God into one or more causal moments of an evolutionary pathway, this could only bring about the 'guidance' of exclusion (not inclusion) – he could restrict the range of evolutionary possibility (see Section 5.8).

addition to an open situation'. Thus, it seems that theistic evolution does not have a coherent story to tell about how evolution can be 'guided'. The 'some life or other will come about' plan is not altered by God's tracking and management (if we even consider it a plan). The tracking and management model of theistic evolution is no different to the 'nudge movement' model or the 'guide a ship model' above – the involvement of chance in the historical process of evolution kills the idea of guidance.

What theistic evolution requires is a plausible defence of the definitive position of randomness in evolution and how divine action is possible in relation to such randomness. Evolution and creation are both universal acids;<sup>42</sup> you can have both in isolation for different moments in time but they cannot come together. (Evolution can be created, but creation cannot be evolved.)

## 5.6 Quantum Indeterminacy

Miller's solution is to place divine action at the quantum level. He remarks,

Events at the atomic level are indeterminate, but not random—they follow understandable statistical patterns, and those patterns are the ones we sometimes elevate to the status of physical laws.<sup>43</sup>

Any divine agency is placed at the quantum level for two reasons: first, we do not know the causality at the quantum level; our **knowledge** is probabilistic and not deterministic—it cannot exclude divine agency; and secondly, the material indeterminacy of quantum reality can allow in divine agency.

The materialist assumption in Miller's position is that "the biological world of today, which we can test and study, analyse and dissect, is one that works according to purely material rules."<sup>44</sup> The key word here is 'purely' and we should ask why the biological world cannot also have material effects brought about by divine speech. This question does not challenge the view that the world *does* work according to material rules; it challenges the view that it can *only* work (or has only worked) according to such rules. With a baseline of such rules in place, divine acts would naturally work with the material to hand. Miller doesn't offer justification for his assumption of a "fully materialist view of biology that emerges from contemporary biology."<sup>45</sup> Full materialism is a philosophy embedded in biology and it requires philosophical justification.

The motivation for placing divine agency at the quantum level is the prior philosophical doctrine of materialism. The counter-point is not that God cannot or has not acted at the quantum level, but that divine action can be supervenient on any quantum state of affairs, (following the lead of Scriptural descriptions of divine actions). So, for example, if we can act irrespective of the quantum state of affairs, this is true more so of God.<sup>46</sup> God has acted and can act in ways consistent with laws and contrary to laws—this shows that even when laws are statistical patterns, God's power to act supersedes such patterns. The scriptural model for divine action is *personal*.

Miller says, "Therefore any effort to view God's work in light of modern science must find a way to understand how His will can be accommodated at all times, not just in some distant past."<sup>47</sup> The mistake is to view God's work in the light of modern science rather than in *personal* terms. Creationists can well accept the adequacy of material explanations of the present and the past, but this doesn't mean that they accept the philosophy of scientific materialism (*contra* Miller).

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<sup>42</sup> This notion is derived from Dennett; see Miller, *Finding Darwin's God*, 174-179, for a critique.

<sup>43</sup> Miller, *Finding Darwin's God*, 213.

<sup>44</sup> Miller, *Finding Darwin's God*, 217.

<sup>45</sup> Miller, *Finding Darwin's God*, 217.

<sup>46</sup> The qualification 'more so' is the key point. Someone might say that human beings have a quantum reality and so they do not act irrespective of a quantum state of affairs. But we are images of God and the point is an analogy: we have no basis for saying that God has a quantum reality. So, a point that is analogously true of us is true more so of him.

<sup>47</sup> Miller, *Finding Darwin's God*, 218.

## 5.7 Causal Moments

We have shown that ‘God guided evolution’ is not possible through divine intervention because of chance in the evolutionary pathway. The alternative defence for theistic evolution is to say God is in every causal moment of an evolutionary pathway. It has been said that God works through natural law and God works through time and chance and we cannot exclude him from any natural causal moment. This is a different theology of theistic evolution/evolutionary creationism. Control is placed in **every causal moment**. God is supervenient over all natural causality. We might in fact say that chance is an illusion for us, a consequence of our limited abilities as knowing creatures. One way in which this point of view might be expressed is to say that Theology and Science offer two corresponding explanations of the same event.

The ‘two different but corresponding explanations of the same event’ approach is a high-level generality and it is a common strategy for harmonising divine and natural causality. It can be used for ‘one-off’ events as well as every causal moment. The choice it presents is whether we accept the **independent causality** of the natural order.

Suppose someone says that ‘God causes the sun to rise each day’; they also describe this daily event in terms of planetary motion; these two descriptions don’t actually match in terms of causal moments, as if to say that God makes the planet turn on its axis each day. The causal moment behind ‘God causes the sun to rise each day’ may lie in the distant past. The causal chain that someone offers for why the sun rises each day may be quite extensive before it gets to that moment where we can also include God and it maybe that we only have God at that point as a First Cause. In order to capture ‘the present tense feel’ of ‘God causes the sun to rise each day, the causal story only has to be supplemented by God’s ongoing agreement that the sun should rise each day.

Or again, suppose someone hypothesizes that God delivered a strong dose of radiation from a sunbeam which brought about a mutation/change in a gene and it conferred a survival advantage to its organism which then went on to become dominant in its environment. This scenario is not matching divine causality with natural causality since the change was *initiated* and not spontaneous.

The point in the above two examples is that divine causality comes in (or exists) as a *further element* rather than as a corresponding and supervenient element upon natural causality.

We might suspect that this version of theistic evolution is even less ‘evolutionary’ than the ‘occasional guidance’ approach and we would be right. The whole point of the theory of evolution is that it explained how life *appeared to be designed* without using a notion of actual design. Popular Science has presented evolution in terms of spontaneous mutations/changes and non-random natural selection and without recourse to notions of purpose or plan. If God is in every causal moment, we have to ask what is actually wrong with natural causality and why God cannot have wanted open-ended natural causality? What have theologians got against natural causality so that it cannot be left alone for its freedom of expression?

The alternative theology is that God is **not** in every causal moment; he has created an **independent** natural causality but he can act in the natural order at any time and at any level. This theology will not yield theistic evolution, but it does allow evolution to exist in the natural order. Special creation will consist of acts of God ‘on top of’ the natural order as from heaven he works ‘with’ natural law and ‘with’ time and chance **alongside** his creation.<sup>48</sup>

Is God then in every causal moment? If theistic evolutionists say ‘No’, they lose the theistic side of ‘theistic evolution’ because chance prevents God guiding evolution; if they say ‘Yes’, they lose the evolution side – they lose both ‘spontaneous’ mutation/change and anything that is ‘natural’ about selection. The success of Science is evidence for causal independence in the natural order which is to say

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<sup>48</sup> Haught, “Darwin, Design, and Divine Providence”, 242, “...if the world is distinct from and other than God, then its existence is not necessary (as is God’s existence), nor are its specific characteristics. In other words, the world is contingent, and wherever there is contingency, there has to be room for the undirected events we call accidental or random.”

that the natural order can be causally sufficient.<sup>49</sup> This shows that God is not in every causal moment. A view of divine action which retains the causal independence of the natural order is more consistent with Science. It is also more consistent with the Bible: theistic evolutionists say that God works ‘through’ time and chance, placing God *inside* time and chance, but the Bible says instead that God works ‘with’ time and chance placing God *alongside* natural causality (e.g. Exod 3:12-14, ‘I will be *with* you’).

Evolutionary Creationism is therefore an all-round weaker theology of creation than Old Earth Creationism for handling evolution.

### 5.8 The Free-Will Attack and Defence

Evolutionary Creationism has the problem that the concept of ‘creation’ in the Bible is tied to *particulars* and not any *generality* that could suggest evolution; so, it would seem that it has no biblical licence to promote this tag.

We can make an analogy comparing free-will with the open-endedness of evolution and its pathways (its freedom of expression). We could then say that just as we have free-will but God guides our life,<sup>50</sup> so too evolution is open-ended and yet guided by God. God can still be in control and responsible for evolution just as he is in control of and responsible for history (and his children). We could call this argument ‘the free-will defence of theistic evolution’.<sup>51</sup>

The argument is a high-level and abstract generality. It doesn’t work with the notion of ‘causality’ but the vaguer ideas of ‘responsible for’ and ‘control’ which are here undefined. The argument draws on the common beliefs in one’s free-will and the guidance of God in one’s life. These two beliefs are not contradictory because God’s guidance need not be negating the expression of free-will, but be part of the context in which that freedom is expressed. The context may *influence* the choice but it doesn’t determine the choice.

There is a distinction to mark in this analogy. I may choose to go out for the day because it is a sunny day or I may decide to do so because my wife asks me. If God guides my wife to ask me, my free-will is intact, but hers might be compromised. If God brings about a sunny day, then nobody’s free-will is compromised.

Taking the analogy to evolution, the argument is that God would guide evolution by modulating the environment in which natural selection operates. This might prompt the thought that in such a case the selection is not all that natural and the suggestion rather defeats the point of the theory of evolution. However, the more severe difficulty is that the analogy only offers ‘wait-and-see’ guidance, which is rather passive and hardly creative. There is also a further problem: a free-will defence of theistic evolution can become a free-will attack.

An analogy with free-will is not helpful to the theistic evolutionist. When God guides the expression of free-will (evolution) it is no longer free-will (evolution): this is a ‘free-will argument against theistic evolution’. God is in control of his own actions and the achievement of all his goals in creation. This doesn’t mean he is in control of any, some or all of the causal moments of an evolutionary pathway or in control of free-will. This is part of the *givenness* of creation.

God can be ‘responsible for’ evolution by dint of the fact he set up the process of evolution in the beginning; this doesn’t connect God to the causal moments of an evolutionary pathway, which is what you need for any notion of ‘God guiding evolution’ – a central posit of theistic evolutionists (e.g. Ayala, Collins). Further, the desideratum of God being ‘in control’ can easily be satisfied by placing his creative acts *on top of* evolution; for there to be control there does not have to be guidance of evolutionary pathways. So, the expression of free will in evolution does not mean God cannot be in control of history; equally, if God determines a human choice, then that choice is not an expression of free will.

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<sup>49</sup> Note, however, this is not to say that the natural order is ‘all there is’, which is metaphysical naturalism.

<sup>50</sup> Miller, *Finding Darwin’s God*, 236.

<sup>51</sup> See Ward, “Theistic Evolution”, 263.

## 5.9 Guidance in Limits

In our consideration of theistic evolution in this section, we have looked at three ways to connect God to evolution: (1) God created evolution in some beginning; (2) God intervenes in one or more causal moments to guide evolution; and (3) God is in every causal moment of an evolutionary pathway.

One way to connect God to evolution (to explain (2) or (3)) is to say that he sets **limits** to the expression of randomness. Whether he sets these limits at the beginning or during an evolutionary pathway, it doesn't matter. The point of this model is to preserve an element of randomness alongside meaningful divine control.

Take an example. Suppose there is a *range control* on the randomness of a random number generator computer program. Things are under control, but there is no guidance of the actual random numbers that are generated within the limits. You might say that a range control is a form of guidance, but it is a form of guidance of *the whole* and not the particular expressions that happen to be generated.

The defence of theistic evolution here focuses on a central notion of evolution, which is randomness. The value of this defence is not in proposing God may have set limits to evolution in the beginning, since we have seen that this would just be creationism; rather, the value of the proposal is that God has guided evolutionary pathways by limiting randomness along a path.

However, we can well ask, if God breaks into an evolutionary pathway, A-Z, at M, to restrict the randomness that subsequently follows, in N-Z, what justifies our retaining the notion that we still have a *single* evolutionary pathway, A-Z? Why is it not the case that we have two pathways, A-L and N-Z? It doesn't appear that we can say Z evolved from A precisely because of the intervention. What this shows is that theistic evolutionists cannot solve their problem of guidance by restricting the guidance to only a modulation of randomness because any intervention will not be naturally occurring. This point becomes obvious when we consider, for example, what changes might be brought about by God. At some point in the description of the change we will step out of the natural and involve the supernatural.

What 'guided theistic evolution' needs in order to work as a theological doctrine is a coherent story about God's guidance of *particular* causal moments. However, God doesn't eliminate the random, he plans alongside the random to achieve the end goal. Whatever we define as evolution, it should remain intact and unguided; guided theistic evolution is a false dawn.<sup>52</sup>

## 5.10 Summary

Even though the phrase 'evolutionary creationism' expresses a category mistake (mixing the categories of act and process),<sup>53</sup> we will still use it and its sister expression 'theistic evolution' to refer to those views that try and bring the ideas of creation and evolution together in some sort of *ongoing* causal way.

Evolutionary Creationism and localised Old Earth Creationism share something in common. They both accept an ancient history of life on earth prior to Adam. This means they both accept whatever is current scientific knowledge about that time-period, although OEC tends to **limit the knowledge claims of evolution** whereas EC tends to accept evolution at face value. Moreover, OEC allows evolution to be unguided in the pre-Adamic space whereas EC tends to insist that it is guided and/or exclusive. Because OEC does not say that evolution is 'guided', it is more faithful to Science,<sup>54</sup> even though it limits Science.

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<sup>52</sup> Miller, *Finding Darwin's God*, 231, "The ability of organisms to generate, shuffle, and test multiple versions of their genetic information is the reason why evolution does not require a programmer to get things right first time." But, if we can 'program' the genetic information, God can; hence, the proposition that evolution does not 'require' a programmer does not mean that evolution has not had programmers alongside. The biochemistry allows programming. In a theological framework, the possibility of special creation is always present.

<sup>53</sup> On 'category mistakes' see the classic essay, G. Ryle, "Categories" in *Logic and Language: Second Series* (ed. A. G. N. Flew; Oxford: Blackwell, 1953), 65-81.

<sup>54</sup> Miller, *Finding Darwin's God*, 207, "...the fact that mutation and variation are inherently unpredictable means that the cause of evolution is, too."

The Bible contains no information about that time and so OEC limits the theory of evolution from a philosophical and theological standpoint.

The difference between the two 'isms' is also in how they treat Genesis and in how they couple creationism and evolution. OEC doesn't allow the theory of evolution to crossover the line that is the special creation of Genesis;<sup>55</sup> it takes a fairly literal approach to the text of Genesis. In OEC, any evolutionary processes are subsumed<sup>56</sup> as part of pre-Adamic history and thereby made irrelevant to Genesis (i.e. left alone). The basis upon which OEC takes the idea of creation back in time is speculative, part of theology and philosophy but not biblical interpretation. In EC, the Genesis account is regarded as the thinking of its day and subordinate to evolutionary explanation. Modern EC does not allegorize Genesis as a way of making it relevant today; rather, it relegates the material detail of Genesis to the culture of its day.<sup>57</sup>

Finally, it is worth distinguishing localised Old Earth Creationism from Progressive Creationism (Wikipedia, Apr 2014). One definition of 'Progressive Creationism' is "God has acted throughout history to bring about things in nature, layering complexity in organisms, life-forms and eco-systems, progressively working towards an earth ready for humankind."<sup>58</sup>

In taking the idea of creation back into the pre-Adamic space, a range of possibilities are opened-up including, for example, God creating (some or all) species in a progressive manner, God acting on top of a macroevolutionary dynamic, God acting at all levels of the world's ecosystems, God modulating genetic or chromosomal mutations/changes<sup>59</sup> to create varieties, *and so on*. Our theological position here is one of choosing **not** to specify the divine action because we lack the information that would facilitate that choice. It would, moreover, be a vast exercise. Is there a distinction between Progressive Creationism and Old Earth Creationism? We might try and make one by saying Progressive Creationism commits to denying macroevolution; localised Old Earth Creationism commits to elaborating only 'possibilities' for the pre-Adamic space.<sup>60</sup> But this looks difficult to sustain theoretically. The old problem that bedevils Bible-Science Apologetics is to set up binary exclusive choices. Instead, we should look to establish the theoretical foundation for Special Creation.

This means that we explain 'God has created all things' in terms of the laws and open-ended processes he sets up in beginnings and in terms of his acting creatively through history. Where he has allowed freedom of expression, he has done so through the laws and processes; where he has acted creatively, he has done so on top of and with the natural order. Because of this split approach to creation, we can see both intelligent design and apparent design in nature. And we might say that we also make chance apparent when we choose a design explanation.

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<sup>55</sup> Theology has a strong testimony of divine action in the world. It would seem then that if evolution is to be allowed, it must leave at the door any claim to universality that impinges on the existing scope of divine action in special creation as that has been established on the basis of testimony.

<sup>56</sup> It is for this reason that Old Earth Creationism has been called an 'intellectual sibling' to theistic evolution in its Progressive Creationism form (Wikipedia). See R. L. Numbers, "Scientific Creationism and Intelligent Design" in *Science and Religion* (ed. P. Harrison; Cambridge: Cambridge University press, 2010), 127-147 (131).

<sup>57</sup> E. McMullin, "Evolution and Special Creation" in *The Philosophy of Biology* (eds. D. L. Hull and M. Ruse; Oxford: Oxford University Press, 1998), 709.

<sup>58</sup> Compare R. Stackpole and R. D. Brown, "More than Myth: Introduction" in *More than Myth* (eds. R. Stackpole and R. D. Brown; Chartwell Press, 2014), 1-6 (3).

<sup>59</sup> See F. J. Ayala, *Population and Evolutionary Genetics: A Primer* (Menlo Park, CA: Benjamin Cummings Publishing, 1982), 20-27, for a description of types.

<sup>60</sup> This means that we don't regard special creation as more likely than evolution in an *a priori* antecedent way; nor does it mean that we only place special creation into the 'gaps' of evolutionary theory; rather, evolution and creation compete equally in the pre-Adamic space (even if we ourselves favour creation.)

## **6. Conclusion**

In this paper, we have introduced evolution, theistic evolution/ evolutionary creationism and outlined the main philosophical criticisms.